univers FW

FWU flush-mounted field distributor enclosures protection type IP30

Manual

:hager

Table of contents

1 About this manual

Integral part of enclosure

This manual is an integral part of the FWU flush-mounted field distributor enclosure.

NOTE

This enclosure type is referred to as an 'FWU enclosure' in this document.

Chapter index

1.1 Subject of the manual

Target group

This document is intended for users of FWU enclosures:

Specifiers, manufacturers, operators and users of switchgear and controlgear assemblies in accordance with DIN EN 61439-3. "Distribution boards intended to be operated by ordinary persons (DBO)".

The manual also contains information regarding the efficient use of the enclosures, as well as guidance on intended use, design, function, assembly, installation and operation, along with technical data.

Objective

This manual describes the design, function, and use of FWU enclosures. It conveys important information which is required for safe operation and work on and with these enclosures.

1.2 Observe related documents

Accompanying documents

The following documents are applicable components and must always be read in conjunction with this manual. The instructions and notices contained in these documents supplement this manual and must be observed and complied with.

- Installation manuals for the relevant enclosure
- Installation manuals for the enclosure accessories

Storing the documents

This manual is an integral part of the FWU enclosure.

The operator is responsible for storing the documents.

- ➢ Carefully read through this manual before performing work on the enclosure system.
- ➢ Store the manual at the operating site of the enclosure system. The authorised personnel must have access to the manual at all times.

1.3   Imprint

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Revisions

Manual for FWU enclosures

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1.4   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.

Lists and instructions

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 Safety

Read carefully

> ➢ Observe the safety information in the operating instructions of the components used.
> ➢ The information about intended use as provided in this chapter should also be taken into account.

The safety-related information is provided to help you identify and avoid risks in good time. It is the prerequisite for safe assembly and use of the enclosure system.

Chapter index

Technical changes reserved

2.1   Intended use

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 61439-3 "Distribution boards intended to be operated by ordinary persons (DBO)".

The Hager FWU field distributor can be expanded with components from the **univers FW** internal fitting system.

Features of the FWU field distributor:

- for residential and commercial buildings with a maximum supply current of 125 A
- for flush-mounted installations, protected to IP30
- available in 6 heights and 3 widths
- mounting depth 110 mm

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 indoor installation according to EN IEC 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 plain or slotted doors. The instructions in this manual regarding compliance with the protection type must be observed during installation work.

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

For more detailed information, refer to the technical data.

Further conditions for intended use

To use the enclosure as intended:

- ➢ Read and observe the information in this manual.
- ➢ Read and observe the instructions provided with the system components (where available).
- ➢ Comply with the safety regulations.

2.2 Misuse

Misuse

Any use deviating from the intended use is considered misuse.

Hager does not assume any liability for damages resulting from misuse.

Danger due to electric shock or arc faults in case of misuse

Misuse can result in high voltages and high currents, which can lead to dangerous situations. This may result in serious injuries and even death.

➢ Only use the product in areas for which the product is designed.
➢ Never operate the product outside the specifications as provided in the Technical Data.
➢ Observe the instructions for extension and the upscaling regulations.
➢ Always observe the requirements for personnel qualifications.

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.

2.3   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 intended to be operated 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 an ordinary person with no electrical skills. 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

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 fitted out, 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 impulse withstand voltage U_{imp} = 4 kV; overvoltage category III
- Rated insulation voltage U_i = 400 V
- Degree of pollution 3
- Minimum clearances = 3 mm
- Minimum creepage distances = 5.6 mm

Rated current I_{nA}

I_{nA} max. 125 A

Short-circuit current rating 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 once the installer has consulted with the specifier and takes into account the precautions in accordance with 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 ZZ44SF accessory set (lock nuts + screws)

Protection class

Protection class II (double insulated)

Symbol for protection class II

Note:

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

Protection classes

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

Note:

- Observe the operating equipment protection type.

Impact protection

- IK09 all round for an enclosure with plain 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): Underparts, double towers
  - Polycarbonate (PC): Overparts

- 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 sections) pass a glow-wire test at 850°C. Therefore, the enclosure is suitable for hollow wall applications.

Summary of 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
- Clearances 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

Technical changes reserved

4 About the FWU field distributor

Detailed information on the FWU field distributor

Chapter index

4.1   Delivery form of enclosure (as a complete system or as individual parts)

The FWU field distributor is supplied as a "complete" system or as "individual" parts.

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

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
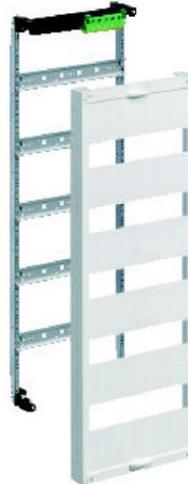
Example: UW51UA

4.2 Body/wall cabinet

4.2.1 Features

- Can be turned 180° (top/bottom)
- Interior is double-insulated with plastic parts
- Cable duct is built in laterally inside the box (11 cm^2)
- 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
- FWU00Lx 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
- Includes full-size plaster guard
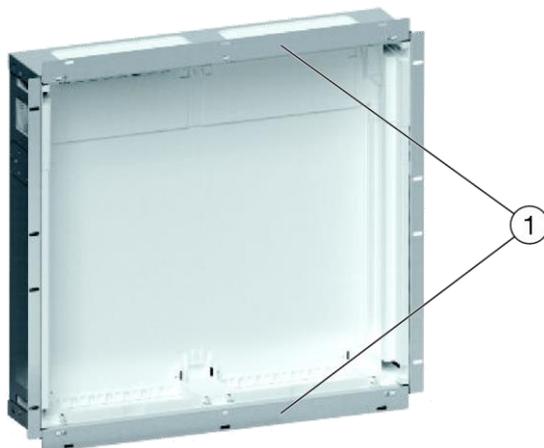
Example: Wall cabinet FWU32L

① FWU00Lx removable transverse cleats

4.2.2 Cable entries and cable ducts

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 is **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)
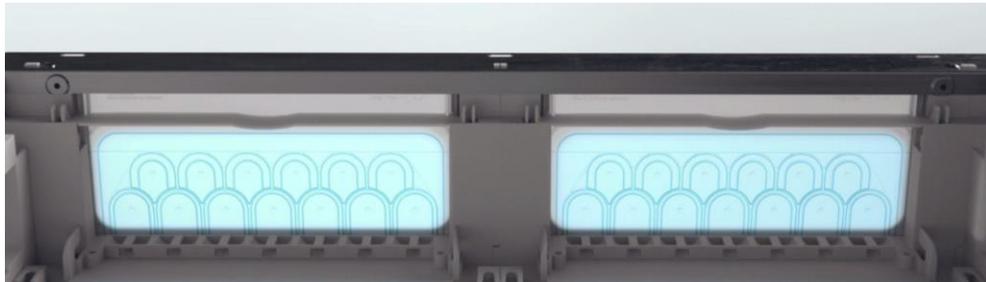
Enclosure top/base with two mounted cable entries (view from inside)
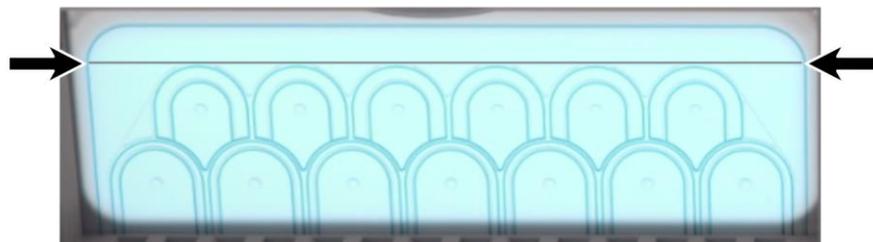
Enlarged illustration of the transverse ridge for cutting the entire cable entry area (highlighted with arrows)

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 wall installation)
- 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)
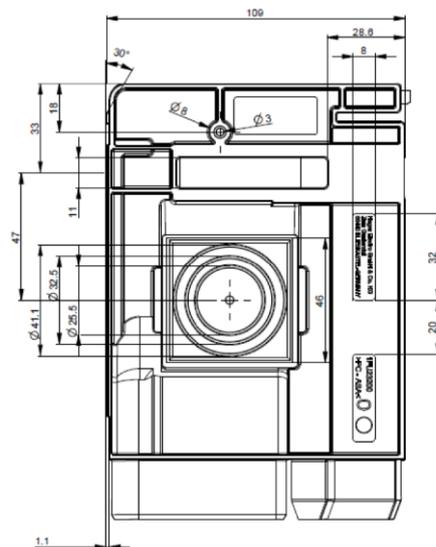
Dimensions and position

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 wall installation)
- 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). The cutting out must be done 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)
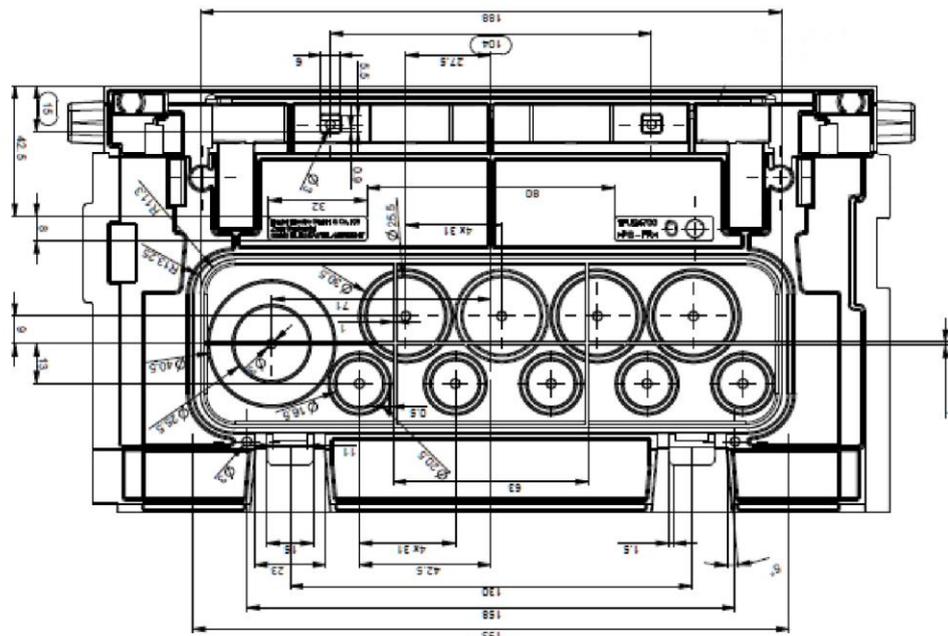
Dimensions and position of the rear cable entries
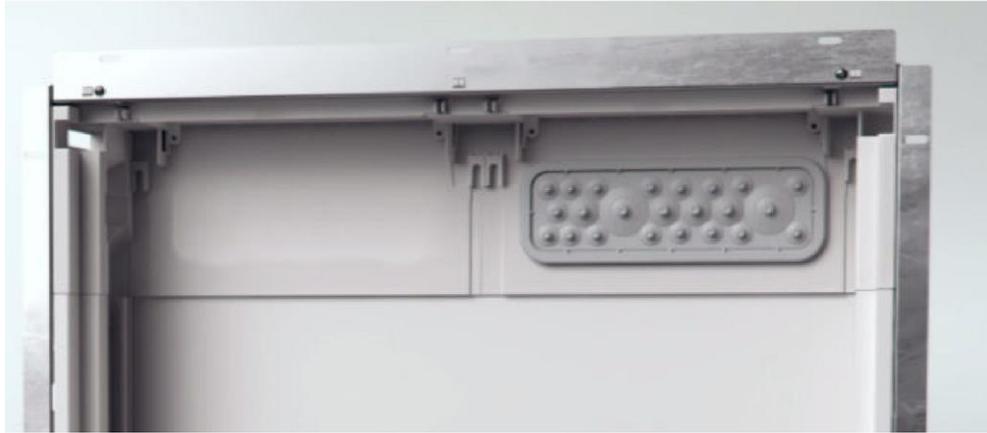
Enclosure with flange VZ741 mounted on the top rear cable entry
(view from the front)

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 these specially shaped (bent) insertion points, cable ties with a maximum width of 12 mm can be easily pushed under the duct and come out again on the other side, at the front (see illustrations below).
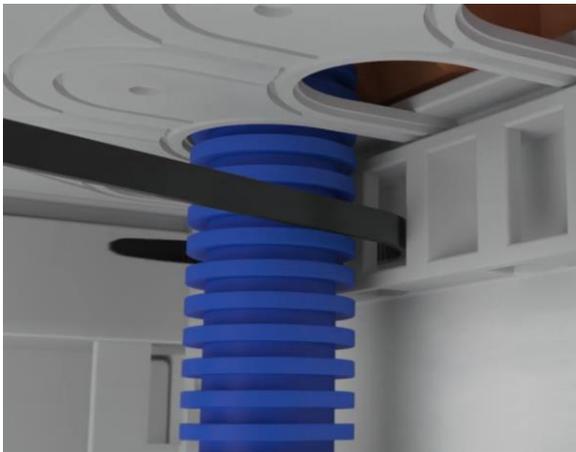
Inserting cable tie into specially shaped (bent) insertion point in plastic part

Attaching conduits and cables via insertion points for cable ties

You can also mount cable strain relief bar FZ850F as an additional option for attaching cables/increasing strain relief (see the section entitled "Internal fitting accessories").

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

Lateral 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 cm² (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.
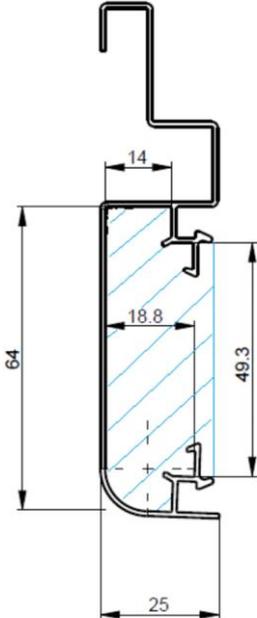
Cross section of lateral cable duct
in wall cabinet
(shaded, view from the top)

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.
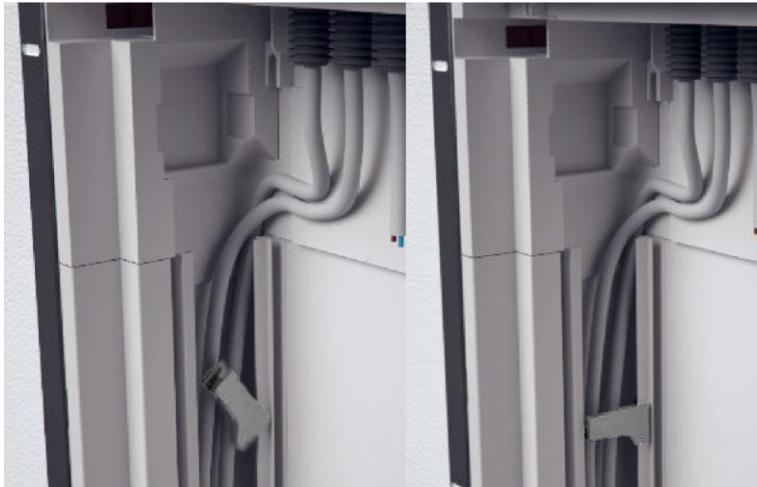
Cable duct clip for side cable ducts
Left: inserted diagonally – Right: fully assembled

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 kit. This halogen-free cover can also be clipped into place via 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 part.

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

4.2.3 Coding

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

The code is made up of three components:

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

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

Product code ending	With internal fitting system	Internal fittings	With terminals	Clamp type	With frame and door	Door type	Door handle
A	Yes	Distribution kit	Without		Yes	Plain	FZ598N
D		(empty)			Yes	Plain	FZ598N
GS	Yes	Distribution kit	Yes	N + PE QuickConnect	Yes	Transparent	FZ598N
K	Yes	Distribution kit + multimedia kit	Yes	PE QuickConnect	Yes	Plain	FZ598
K1	Yes	Distribution kit + multimedia kit	Yes	N + PE QuickConnect	Yes	Slotted	FZ598N
K2	Yes	Distribution kit + multimedia kit	Yes	N + PE QuickConnect	Yes	Plain	FZ598N
K3	Yes	Distribution kit + multimedia kit	Yes	N + PE QuickConnect	Yes	Slotted, multimedia	FZ598N
L		(empty)					
M2	Yes	Distribution kit	Yes	PE QuickConnect	Yes	Plain	FZ598N
M3	Yes	Distribution kit + multimedia kit	Yes	PE QuickConnect	Yes	Plain	FZ598
M4	Yes	Distribution kit + multimedia kit	Yes	N + PE QuickConnect	Yes	Plain	FZ598N
N	Yes	Distribution kit	Without	(equipped to receive terminal blocks)	Yes	Plain	FZ598N
S	Yes	Distribution kit	Yes	N + PE QuickConnect	Yes	Plain	FZ598N
S1	Yes	Distribution kit	Yes	PE QuickConnect	Yes	Plain	FZ598

The different enclosure dimensions are listed in chapter "Overview of enclosure product codes".

4.2.4   Overview of enclosure product codes

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

Size 4	Enclosure width		
	300 mm	**550 mm**	**750 mm**
	FWU41A	FWU42A	FWU43A
	FWU41D	FWU42D	FWU43D
	-	FWU42GS	-
	-	FWU42K	FWU43K
	-	FWU42K1	-
Enclosure height 650 mm	-	FWU42K2	-
	-	FWU42K3	-
	FWU41L	FWU42L	FWU43L
	-	FWU42M2	-
	FWU41S	FWU42S	FWU43S
	FWU41S1	FWU42S1	FWU43S1

Size 5	Enclosure width		
	300 mm	**550 mm**	**750 mm**
	FWU51A	FWU52A	FWU53A
	FWU51D	FWU52D	FWU53D
	-	FWU52GS	-
	-	FWU52K	FWU53K
	-	FWU52K1	-
	-	FWU52K2	-
Enclosure height 800 mm	-	FWU52K3	-
	FWU51L	FWU52L	FWU53L
	-	FWU52M2	-
	-	FWU52N	FWU53N
	FWU51S	FWU52S	FWU53S
	FWU51S1	FWU52S1	FWU53S1

Size 6	Enclosure width		
	300 mm	**550 mm**	**750 mm**
	FWU61A	FWU62A	FWU63A
	FWU61D	FWU62D	FWU63D
	-	FWU62GS	-
	-	FWU62K	-
	-	FWU62K1	-
	-	FWU62K2	-
Enclosure height 950 mm	-	FWU62K3	-
	FWU61L	FWU62L	FWU63L
	-	FWU62M2	-
	-	FWU62M3	-
	-	FWU62M4	-
	-	FWU62N	FWU63N
	FWU61S	FWU62S	FWU63S
	FWU61S1	FWU62S1	FWU63S1

Size 7	Enclosure width		
	300 mm	**550 mm**	**750 mm**
	FWU71A	FWU72A	FWU73A
	FWU71D	FWU72D	FWU73D
	-	FWU72GS	-
Enclosure height 1100 mm	-	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	-	-

4.2.5 Enclosures in detail

4.2.5.1 FWUxxA

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

Example: FWU33A

Internal fittings

Distribution kit(s):
- Slot width for 12 modules
- Distance between DIN rails: 125 mm

Without QuickConnect and without QuickConnect support

Door:
- **Plain**
- 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

4.2.5.2   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:
- **Plain**
- 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

4.2.5.3 FWUxxGS

Product code
FWU32GS
FWU42GS
FWU52GS
FWU62GS
FWU72GS

Example: FWU62GS

Internal fittings

Distribution kit(s):
- Slot width for 12 modules
- Distance between DIN rails: 125 mm

QuickConnect configuration (at the top of each distribution kit)

Height 3:	**2x KN10N**		**+ KN18E**	
Heights 4, 5, 6 and 7:	**2x KN10N**		**+ KN22E**	

Door:
- Plain
- 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

4.2.5.4   FWUxxK

Product code
FWU42K
FWU43K
FWU52K
FWU53K
FWU62K

Example: FWU43K

Internal fittings

Distribution kit(s):	Multimedia kit:
- Slot width for 12 modules - Distance between DIN rails: 125 mm	- 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 kit

Vertical partition FWU00Vx pre-mounted between the distribution kit and the multimedia kit

QuickConnect configuration (at the top of each distribution kit)

Heights 4, 5 and 6:	**KN22E**

Door:
- **Plain**
- 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

4.2.5.5 **FWUxxK1**

Product code

FWU32K1
FWU42K1
FWU52K1
FWU62K1
FWU72K1

Example: FWU42K1

Internal fittings

Distribution kit:	Multimedia kit:
- Slot width for 12 modules - Distance between DIN rails: 125 mm	- 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 kit

Vertical partition FWU00Vx pre-mounted between the distribution kit and the multimedia kit

QuickConnect configuration (at the top of each distribution kit)				
Height 3:	**2x KN10N**		**+ KN18E**	
Heights 4, 5, 6 and 7:	**2x KN10N**		**+ 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

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4.2.5.6 FWUxxK2

Product code
FWU32K2
FWU42K2
FWU52K2
FWU62K2
FWU72K2

Example: FWU52K

Internal fittings

Distribution kit:	Multimedia kit:
- Slot width for 12 modules - Distance between DIN rails: 125 mm	- 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 kit

Vertical partition FWU00Vx pre-mounted between the distribution kit and the multimedia kit

QuickConnect configuration (at the top of each distribution kit)

Height 3:	**2x KN10N**	**+ KN18E**
Heights 4, 5, 6 and 7:	**2x KN10N**	**+ KN22E**

Door:
- **Plain**
- 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

4.2.5.7 FWUxxK3

Product code
FWU42K3
FWU52K3
FWU62K3

Example: FWU62K3

Internal fittings

Distribution kit:	Multimedia kit:
- Slot width for 12 modules - Distance between DIN rails: 125 mm	- 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 kit

Vertical partition FWU00Vx pre-mounted between the distribution kit and the multimedia kit

QuickConnect configuration (at the top of each distribution kit)

Heights 4, 5 and 6:	**2x KN10N**		**+ KN22E**	

Door:
- **Slotted, multimedia**
- Steel frame
- **univers door handle**
- Slotted plastic plate in the centre for better WLAN access
- All doors without 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

4.2.5.8 **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

4.2.5.9   FWUxxM2

Product code
FWU32M2
FWU42M2
FWU52M2
FWU62M2
FWU72M2

Example: FWU72M2

Internal fittings

Distribution 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:
- **Plain**
- 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

4.2.5.10 FWUxxM3 / FWUxxM4

Product code

FWU62M3

FWU62M4

Example: FWU62M4

Internal fittings

Distribution kit:	Multimedia kit:
- **Slot width for 26 modules** - Continuous DIN rails (500 mm wide) - Distance between DIN rails: 125 mm	- Pre-mounted plastic mounting plates - Number of mounting plates: 3

Pre-mounted cable duct cover FWU00C6 at the side (left and right)

Horizontal partition ZZ10H between the distribution kit and the multimedia kit

QuickConnect configuration (top)

	FWU62M3	**FWU62M4**	
Height 6:	**2x KN22E**	**4x KN10N**	**+ 2x KN22E**

Door:
- **Plain**
- Steel
- **90SL door handle (M3) or univers (M4)**
- Door with stiffener strip

Included in the scope of delivery:
- 20 long and 20 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

4.2.5.11 FWUxxN

Product code
FWU52N
FWU53N
FWU62N
FWU63N
FWU72N
FWU73N

Example: FWU63N

Internal fittings

2 top rows:
- For terminal blocks
- Plain covers
- **Insulated DIN rails UT22C**
- **Distance between DIN rails: 150 mm**

Distribution kit(s):
- Slot width for 12 modules
- **Distance between DIN rails: 150 mm**

Without QuickConnect and without QuickConnect support

Door:
- **Plain**
- 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

Technical changes reserved

4.2.5.12   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 distribution kit)

Height 3:	**2x KN10N**		+ **KN18E**	
Heights 4, 5, 6 and 7:	**2x KN10N**		+ **KN22E**	

Door:
- **Plain**
- 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

4.2.5.13   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 distribution kit)

Height 3:	**KN18E**	
Heights 4, 5, 6 and 7:	**KN22E**	

Door:
- **Plain**
- 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
- Internal, adjustable hinge
- Available with metal plate doors (plain 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 locking with door latch and push rods on double doors
- 1-point locking with door latch 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 chapter "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 on next page

		A (mm)	B (mm)	C (mm)
FZ598N		8,5	23	31,5
FZ598		6	17	23
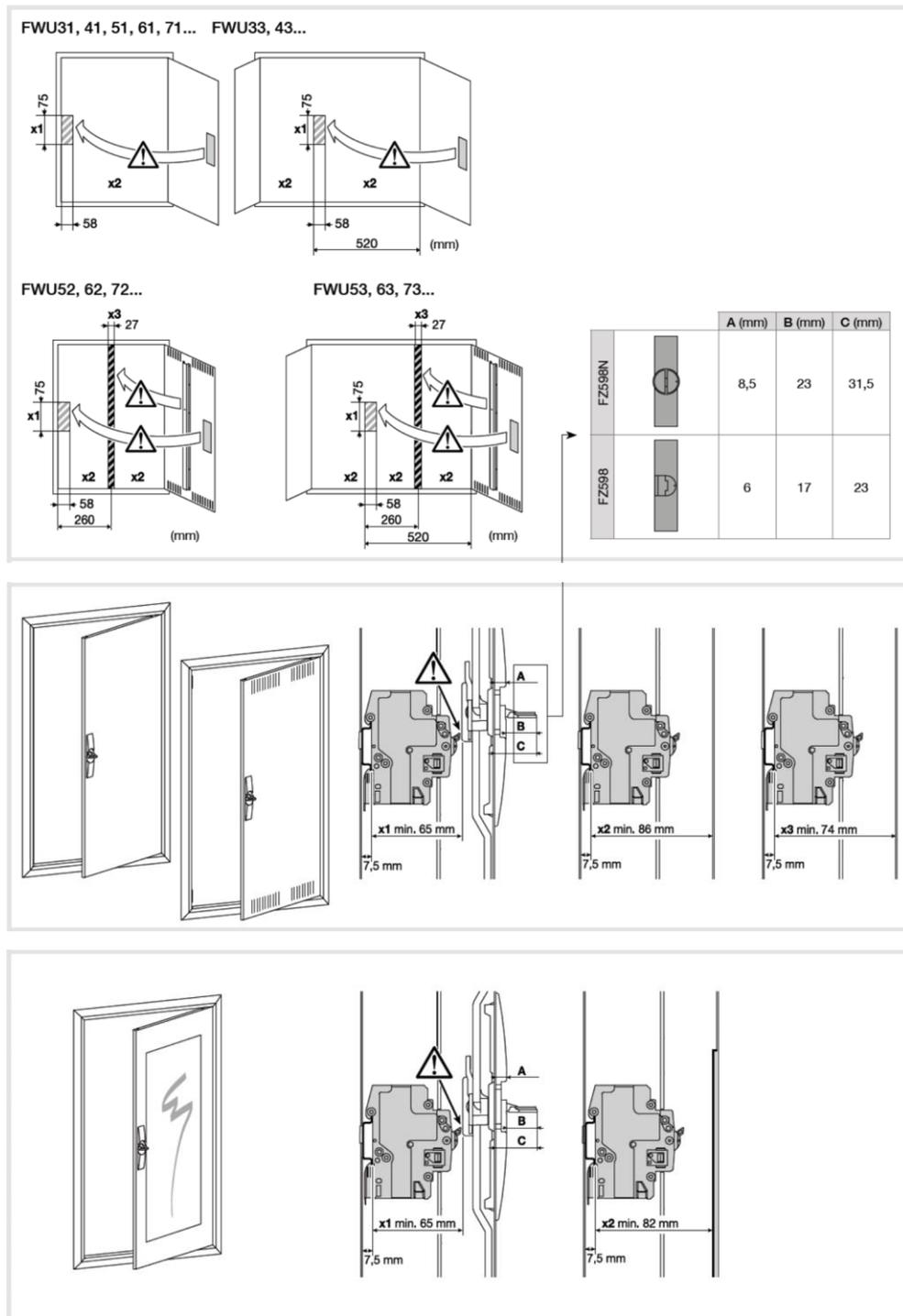
Notes for installing the door: Distance of door to internal fitting elements

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 version (product code ending): FZ142**NV1**

Product code ending	Door type	Door handle
F	Frame with plain door	FZ598
FM2	Frame with plain 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

Plain door, max. IP44, univers door handle

Height	Width 1 (300 mm)		Width 2 (550 mm)		Width 3 (800 mm)	
	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	-	-	-	-

Plain door, max. IP30, univers door handle

Height	Width 1 (300 mm)		Width 2 (550 mm)		Width 3 (800 mm)	
	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

Height	Width 1 (300 mm)		Width 2 (550 mm)		Width 3 (800 mm)	
	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

Height	Width 1 (300 mm)		Width 2 (550 mm)		Width 3 (800 mm)	
	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

Height	Width 1 (300 mm)		Width 2 (550 mm)		Width 3 (800 mm)	
	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

Height	Width 1 (300 mm)		Width 2 (550 mm)		Width 3 (800 mm)	
	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 plain door, max. IP44, univers door handle

Height	Width 1 (300 mm)		Width 2 (550 mm)		Width 3 (800 mm)	
	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

Plain door, max. IP44, 90SL door handle

Height	Width 1 (300 mm)		Width 2 (550 mm)		Width 3 (800 mm)	
	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

Height	Width 1 (300 mm)		Width 2 (550 mm)		Width 3 (800 mm)	
	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

Height	Width 1 (300 mm)		Width 2 (550 mm)		Width 3 (800 mm)	
	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 plain door, max. IP43, 90SL door handle

Height	Width 1 (300 mm)		Width 2 (550 mm)		Width 3 (800 mm)	
	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 frame product codes

	Enclosure width		
	300 mm	**550 mm**	**750 mm**
Size 3			
Enclosure height 500 mm	FZ031F	FZ032F	FZ033F
Size 4			
Enclosure height 650 mm	FZ041F	FZ042F	FZ043F
	FZ141F	FZ142F	FZ143F
	FZ141FM2	FZ142FM2	FZ143FM2
	FZ141NM	FZ142NM	FZ143NM
	FZ141NV1	FZ142NV1	FZ143NV1
Size 5			
Enclosure height 800 mm	FZ051F	FZ052F	FZ053F
	FZ151F	FZ152F	FZ153F
	FZ151FM2	FZ152FM2	FZ153FM2
	FZ151NM	FZ152NM	FZ153NM
	FZ151NV1	FZ152NV1	FZ153NV1
Size 6			
Enclosure height 950 mm	FZ061F	FZ062F	FZ063F
	FZ161F	FZ162F	-
	FZ161FM2	FZ162FM2	-
	FZ161NM	FZ162NM	-
	FZ161NV1	FZ162NV1	-
Size 7			
Enclosure height 1100 mm	FZ071F	FZ072F	FZ073F
	FZ171F	-	-
	FZ171FM2	-	-
	FZ171NM	-	-
	FZ171NV1	-	-
Size 8			
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 chapter "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 in the centre of the enclosure for ensuring the 3-point locking.

Important note: 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.

Technical changes reserved

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.
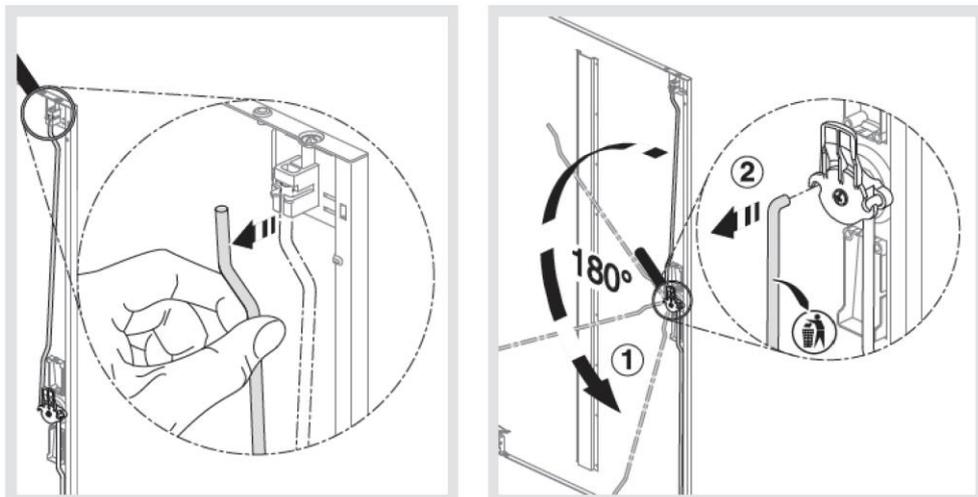
FZ1xxF

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:

    - **Plain**
    - Steel
    - **90SL door handle**
    - From size 5, right-hand door with stiffener strip
    - On enclosure sizes 43 and 53, plain left-hand door made of steel

- 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:

    - **Plain, multimedia**
    - Steel frame
    - Plastic insert in the centre for better WLAN access, opaque (not transparent)
    - **90SL door handle**
    - Without stiffener strip
    - On enclosure sizes 43 and 53, plain left-hand door made of steel (without plastic insert)

- 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 43 and 53, plain left-hand door made of steel (without plastic insert)

- 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 43 and 53, slotted left-hand door made of steel

- Colour: RAL 9010
- Included in the scope of delivery:

    - 4 screws for fixing to the wall cabinet
    - DIN A4 circuit table

4.3.7 Accessories

4.3.7.1 Standard door locks as replacement part

The doors for FWU enclosures are fitted with the FZ598 or FZ598N door handle as standard and close by means of a folding handle and plastic door latch.

- The FZ598 door handle is from the previous univers IP43 delivery programme and is somewhat flatter and narrower than FZ598N.
- The FZ598N door handle is from the current univers IP44 delivery programme and is supplied with various accessories.
- Both door handles can be sealed directly with a sealing wire (see illustration on the bottom right).
- The FZ598N can also be sealed with an additional cover.

FZ598 door handle

FZ598N door handle

Example: Fitting a sealing wire on the FZ598N

4.3.7.2 Door locks for retrofitting

A wide range of special locks can be fitted on the standard door handles. A number of locks are shown in the table below, other locks are available on request.

Description of special lock	Lock type	For FZ598 door handle	For FZ598N door handle
With E405 cylinder		FZ452	FZ452N
With E455 cylinder		FZ453	FZ453N
With E012 cylinder		FZ455	FZ455N
With EK333/1333 cylinder		FZ458	FZ458N
With E1242 cylinder		FZ597	FZ597N
Two-way key bit 3 mm		FZ449	FZ449N
Triangular lock 7 mm		FZ450	FZ450N
Square lock 7 mm		FZ451	FZ451N
With T-handle			FZ530N

Description of special lock	Lock type	For FZ598 door handle	For FZ598N door handle
With T-handle and EK333/1333 cylinder			FZ531N
With ratchet handle			FZ532N
With ratchet handle and EK333/1333 cylinder			FZ533N
Sealing cover			FZ226
Square 8 mm made of plastic with sealing cover			FZ821N
Square 7 mm with sealing cover			FZ822N
Slot made of plastic with sealing cover			FZ823N
1242E cylinder with sealing cover			FZ824N

Sample illustrations

FZ531N

FZ451

FZ597N

FZ226

FZ532N

FZ822N (mounted)

4.3.7.3   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. The frame can be moved up to 32 mm forward using the FZ279 depth adjustment set. A distance of up to 20 mm can thus be gained between the device and door or door latch.

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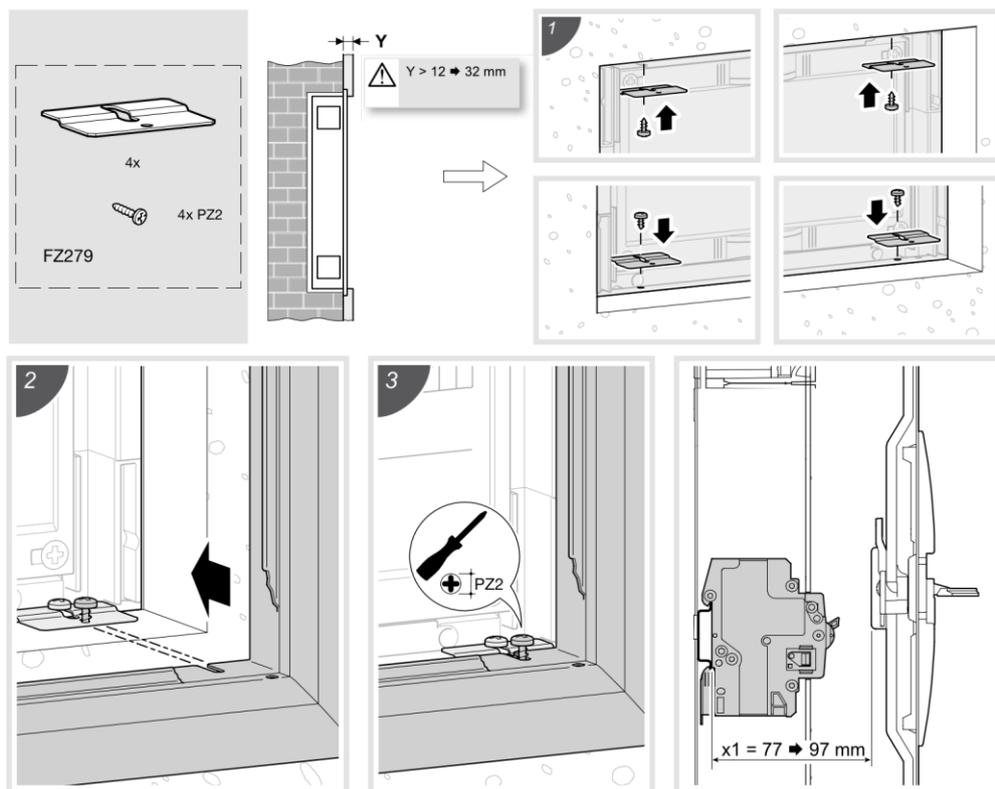
Mounting of depth adjustment set FZ279: up to 20 mm more distance between the device and the door

5   Mounting the body/wall cabinet

Chapter index

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 wall installation

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 assembly 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 improved 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 at the side, 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:
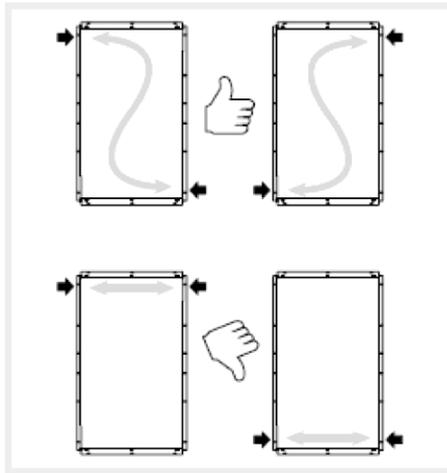
Positioning the ventilation panels, illustrating how the air circulates
- Top:
  2 examples of asymmetric assembly: maximum effect
- Bottom:
  2 examples of asymmetric assembly: not recommended

Mounting the ventilation inserts

Positioning the FD00P5 on the wall cabinet
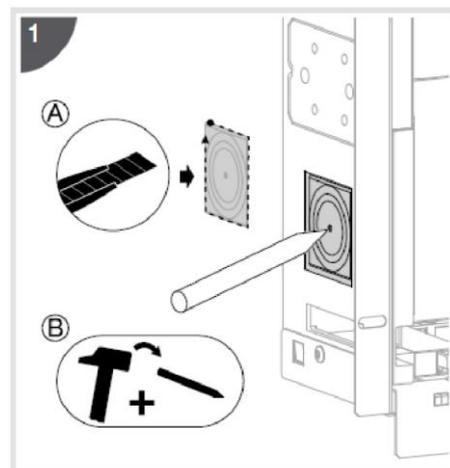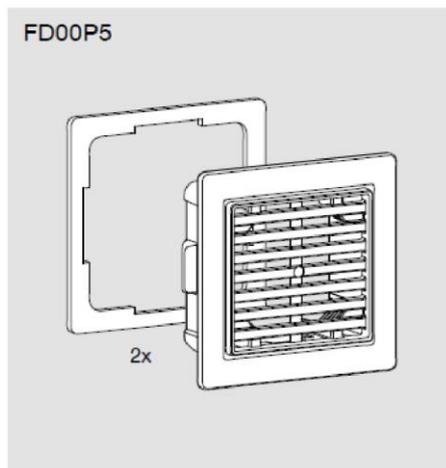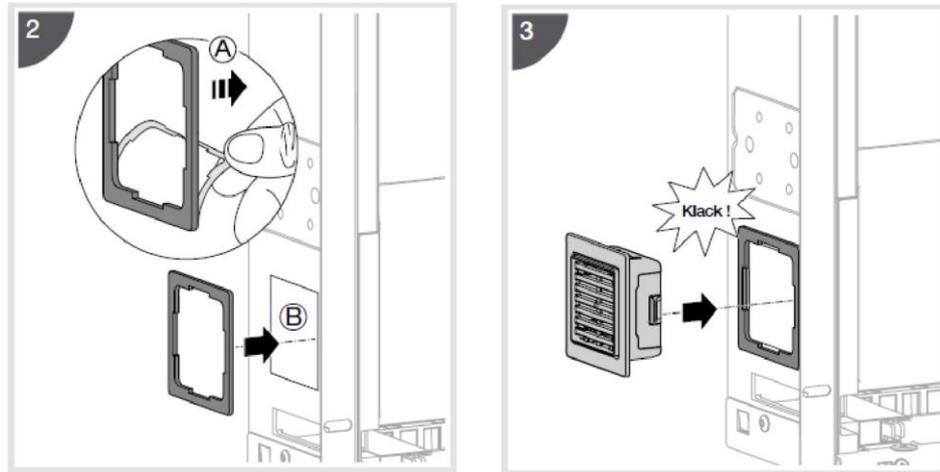
Mounting the FD00P5 ventilation insert before installing the wall cabinet in the wall

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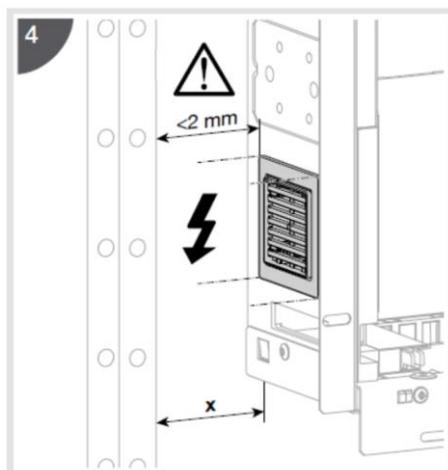
At least 2 mm in front of the ventilation openings must be kept clear of metal components.

- 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 at the sides 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 together with the aid of the connection set.
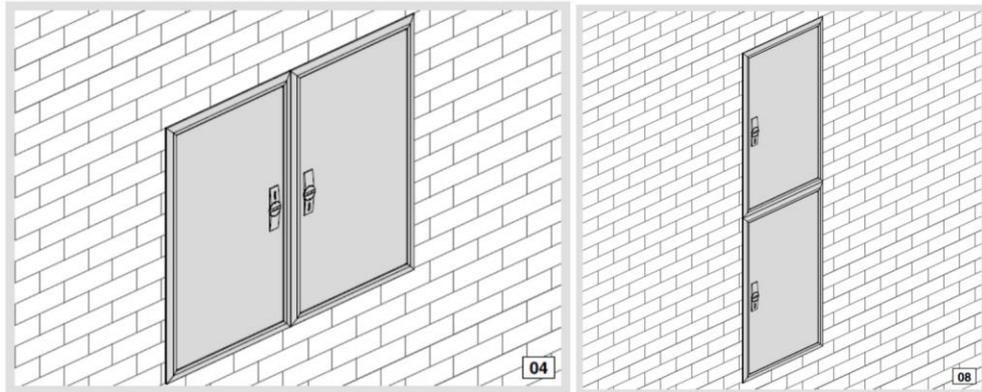
Flush-mounting of frames over two wall cabinets connected together

FWU00F1
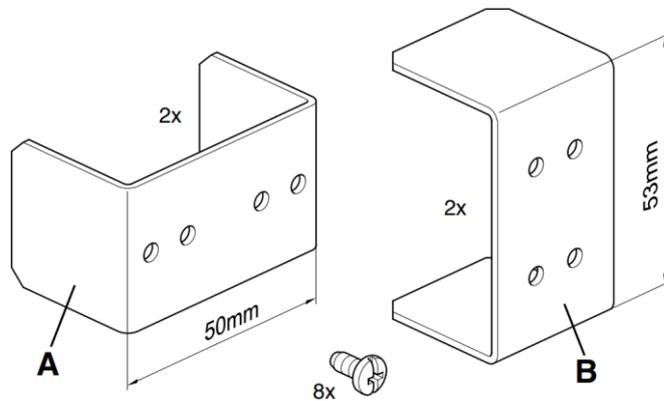
Width of bracket in the FWU00F1 connection set

Horizontal enclosure-to-enclosure connection

The FWU00F1 connection set enables two wall cabinets to be mechanically connected at the elongated holes at the sides with the aid of two U-profiles. All 4 holes in the brackets are lined up horizontally. The 2 brackets for the horizontal connection are 50 mm wide.
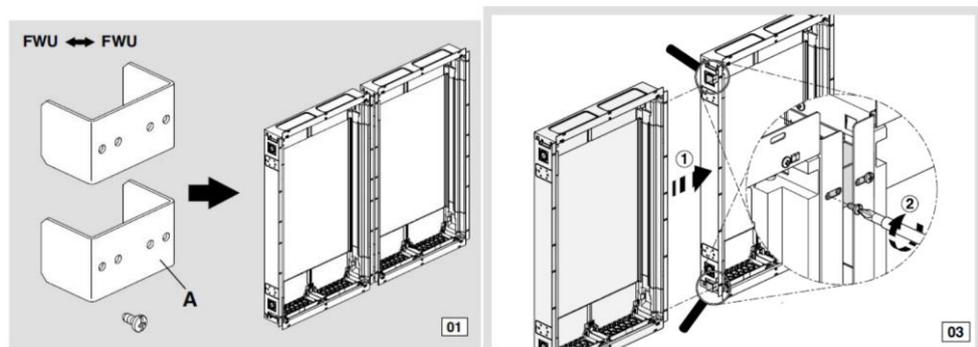
Attaching two wall cabinets next to each other (horizontally)

Vertical enclosure-to-enclosure connection

The FWU00F1 connection set enables two wall cabinets to be mechanically connected at the elongated holes at the top and bottom with the aid of two U-profiles. One pair of holes is arranged above another pair on the brackets. The 2 brackets for vertical connection are 53 mm wide.
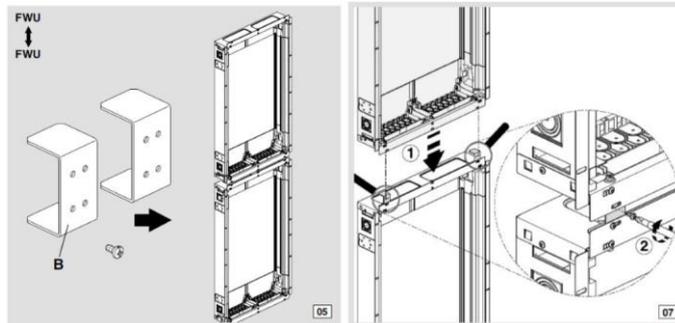
Attaching two wall cabinets above one another (vertically)

The assembly procedure is described in detail in mounting instruction sheet 6LE006998.

Dimensions of wall cut-out for connected enclosures

The dimensions for the wall cut-out (niche) for enclosures connected by means of connection set FWU00F1 are determined using the following drawings and tables.

- Dimensions L1 and H2 apply to enclosures connected one above the other (vertically).
- Dimensions L2 and H1 apply to enclosures connected beside each other (horizontally).
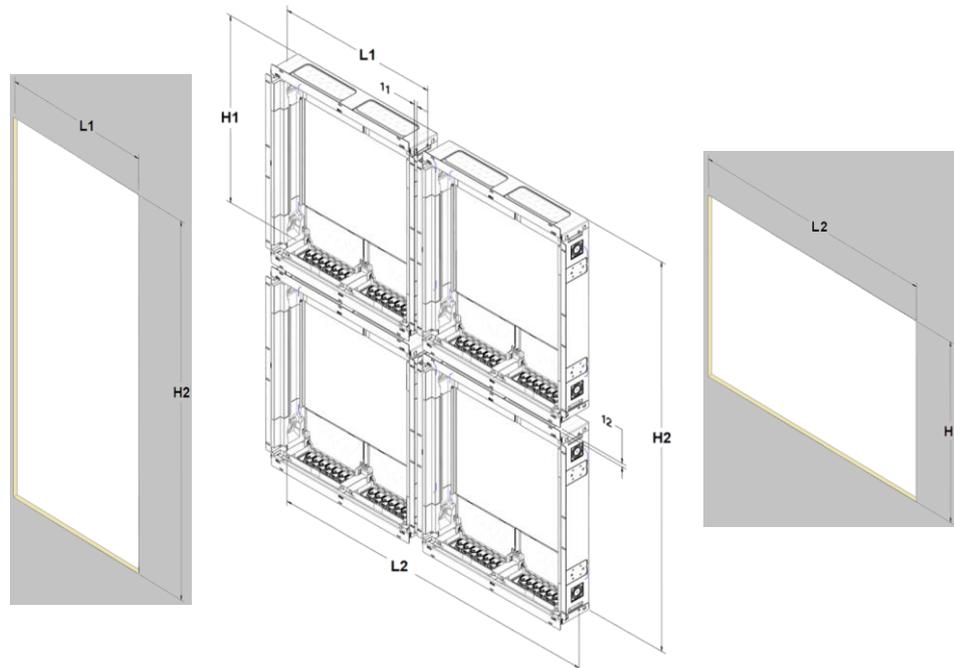
Dimensions for two connected enclosures (FWUwx.. + FWUyz.. + FWU00F1)

Meaning of the placeholders:

w	Height code of the first FWU enclosure
y	Height code of the second (connected) FWU enclosure
x	Width code of the first FWU enclosure
z	Width code of the second (connected) FWU enclosure

Total height H2 [mm]

FWU first enclosure		FWU second enclosure Height code y					
Height code w	H1 [mm]	3	4	5	6	7	8
3	502	1057	1207	1357	1507	1657	1807
4	652	1207	1357	1507	1657	1807	
5	802	1357	1507	1657	1807		
6	952	1507	1657	1807			
7	1102	1657	1807				
8	1252	1807					

Total width L2 [mm]

FWU first enclosure		FWU second enclosure Width code z		
Width code x	L1 [mm]	1	2	3
1	310	662	912	1162
2	560	912	1162	1412
3	810	1162	1412	1662

Example:

One FWU42K1 and one FWU41S enclosure are to be mounted side by side using the FWU00F1 connector.

- The width code of enclosure FWU4**2**K1 is x = 2.
- The width code of enclosure FWU4**1**S is z = 1.

=> This means a required total width L2 of 912 mm for the wall cut-out.

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:
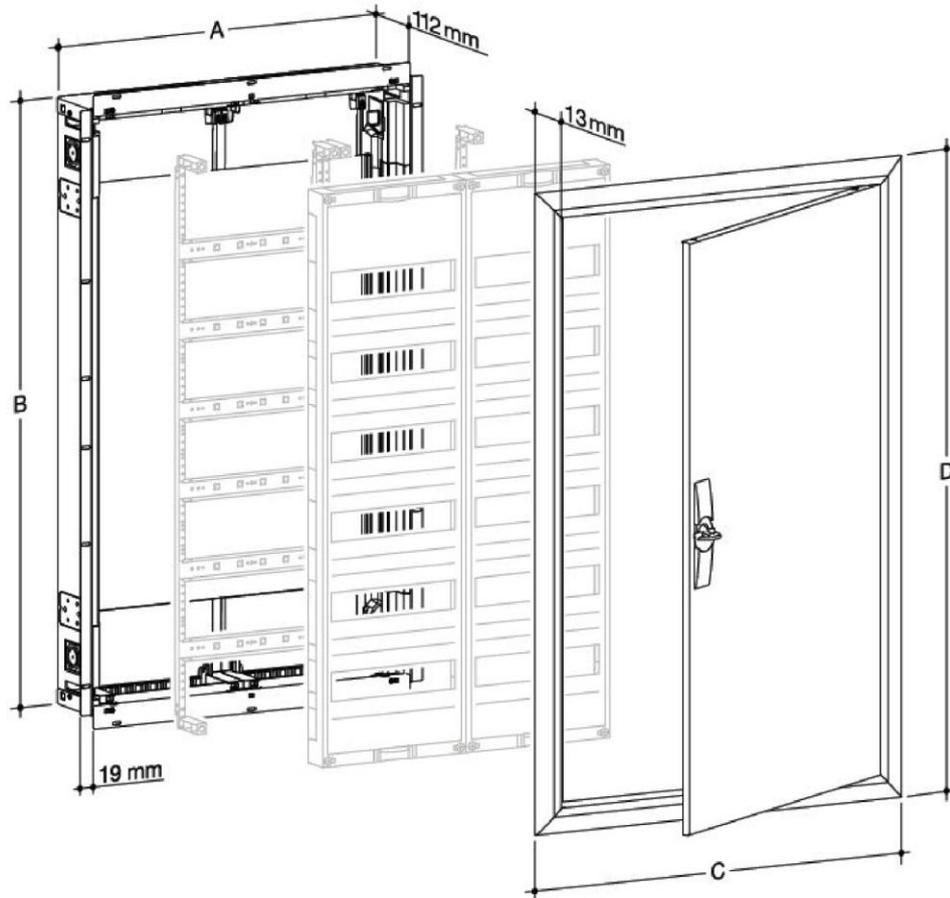
	A (mm)	B (mm)	C (mm)	D (mm)
FWU31…	310	502	353	553
FWU32…	560	502	603	553
FWU33…	810	502	853	553
FWU41…	310	652	353	703
FWU42…	560	652	603	703
FWU43…	810	652	853	703
FWU51…	310	802	353	853
FWU52…	560	802	603	853
FWU53…	810	802	853	853
FWU61…	310	952	353	1003
FWU62…	560	952	603	1003
FWU63…	810	952	853	1003
FWU71…	310	1102	353	1153
FWU72…	560	1102	603	1153
FWU73…	810	1102	853	1153
FWU81…	310	1252	353	1303
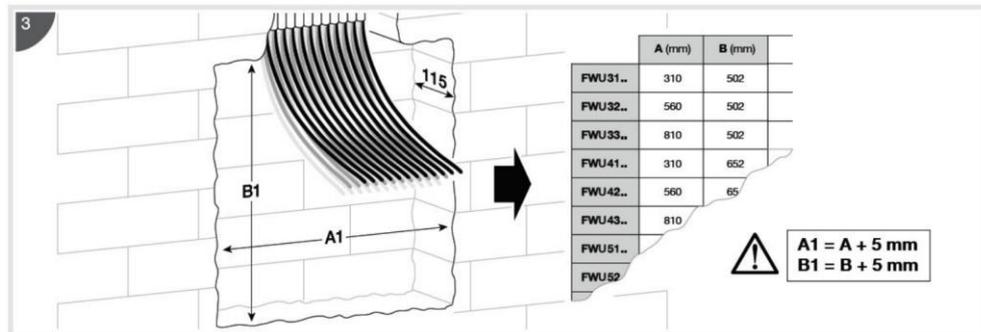
Dimensions of the wall niche or hollow wall for the enclosure installation

The dimensions for the wall cut-out for connected enclosures can be found in section 5.2.3 'Enclosure-to-enclosure connection with connection set FWU00F1' or in the 6LE007280B installation manual.

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. See illustration below.

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.
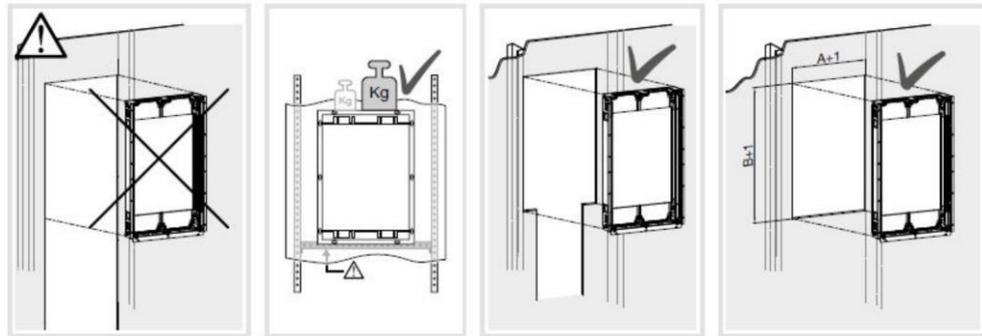
The wall cabinet can also be installed inside a hollow wall using the hollow wall anchors. You can find more information on attaching the wall cabinet to the wall using VZ405N hollow wall anchors in the "VZ405N hollow wall anchors" section.

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.

BEFESTIGUNG MAUERKASTEN

wasserabweisender und verstärkter Putzschutz

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

Important 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.
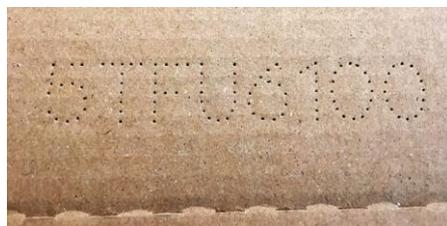
Product number
(on back)
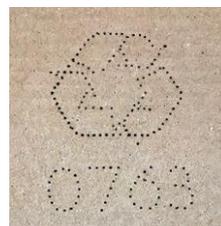
Recycling symbol
(on back)

6 univers FW internal fitting system

Chapter index

6.1   Coding

The FWU enclosure is pre-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
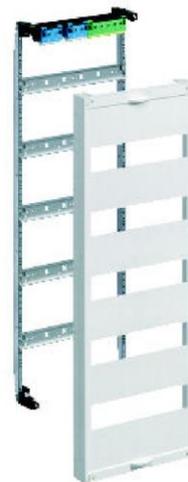
Example: The UW51U kit is 750 mm high and 250 mm wide.

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

6.2 Kits pre-mounted

6.2.1 Distribution kits UWxxUx

Distribution 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. For all covers, the distance between the rows of modules is 125 mm (slots).

Example: UW81U   Example: UW81UA

Kit	Height	Width 1 (250 mm)	QC terminal
Distribution 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
Distribution 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	KN26E

6.2.2 Multimedia kits

Important note: Multimedia kits UMx1UK and UNxxTN are not equipped with UZ01A2 tower overparts.

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)	Num-ber of plates	Number of 9.5 mm-long screws	Number of 25 mm-long screws
	3 (450 mm)	UM31UK	1	10	10
	4 (600 mm)	UM41UK	2	10	10
Multimedia kit with plastic mounting plate	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
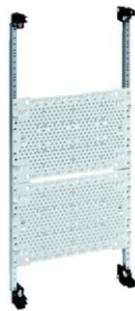
Example: UM41UK

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

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

These screws are also available as accessories under the product code **UM00Z0** (10 x short and 10 x long).

Package of screws **UM00Z0** for multimedia plastic plates
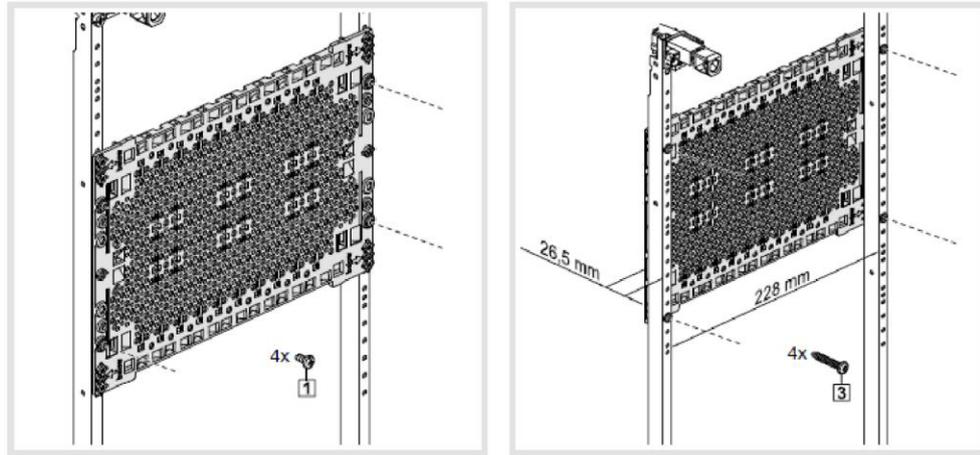
Assembling the UMx1UK plastic mounting plate
- Left: on the front of the vertical uprights
- Right: on the back of the vertical uprights

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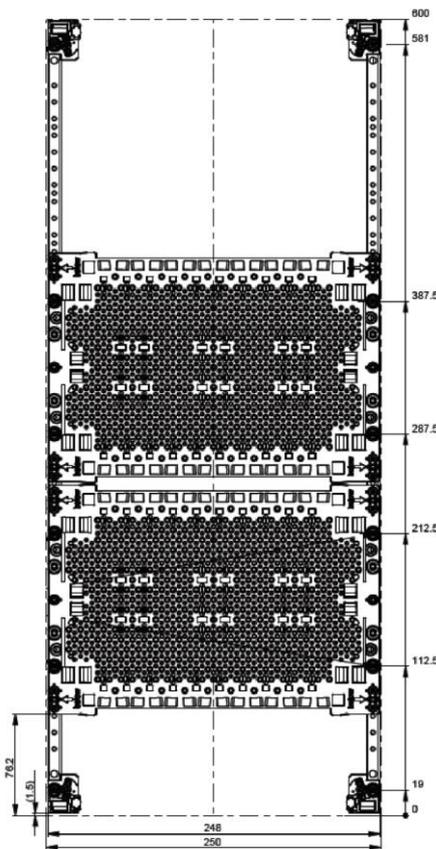
UMx1UK support frame: distance of 75 mm between edge of vertical upright and lowest plate

Important note: When attaching multimedia devices to the plastic plate with screws, do not exceed the specified maximum tightening torque of 1.2 Nm (see "UM00M0 plastic mounting plate").

UNxxTN

The existing UNxxTN multimedia kits with perforated plates are also available. They are composed of one single plate that cannot be moved downwards. These kits 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 kit with sheet 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

Hybrid kits with univers FW vertical uprights are available as accessories. They consist of rows of modules at the top and mounting plates at the bottom. Hybrid kits are only intended for installation in single-field enclosures (especially if there is no space for a 550 mm-wide multimedia enclosure at the installation site) and in 2-field enclosure heights 4, 5 and 6. These kits are not compatible with the vertical partitions FWU00Vx. These partitions must be mounted on the distribution kit side.

The last letters U or UM mean that the product is suitable for flush-mounted field distributors. The following number gives the number of modular rows in the upper part of the kit. Kit UN61**U3** is suitable for a FW**U** flush-mounted field distributor for example and contains **3** rows for modular devices.

UNx1U1/UNx1U2/UNx1U3/UNx1U4/UMx1UM3/UMx1UM4

The ...1U1 to ...1U4 or ...1UM3 to ...1UM4 modules include DIN rails with a cover and PEN supports with a PE or PEN QuickConnect (QC) terminal at the top, a horizontal partition in the middle, UM00M0 plastic mounting plates at the bottom and a UM00Z0 package of screws.

Comment: Kits with 1 and 2 DIN rails are fitted with the KN00A universal PEN support, which, when installed on 12 module-wide DIN rails, reduces the number of division units for switches by 5 modules.

UNx1U1
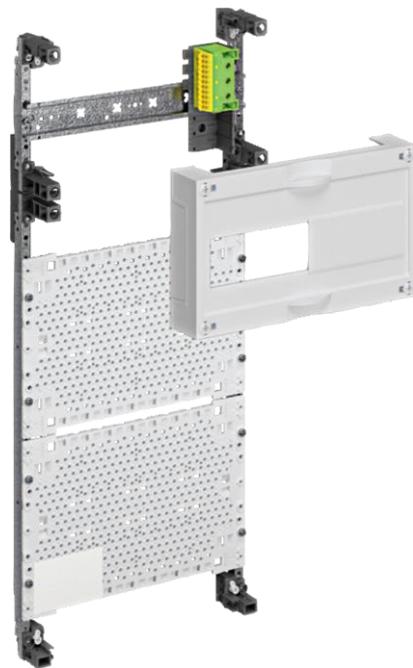
Example: UN41U1

Kit	Height	Width 1 (250 mm)	PEN support	QC terminal	UM00M0 mounting plate
1 x DIN rail at the top, multimedia kit with plastic mounting plates	4 (600 mm)	UN41U1	KN00A	KN14E	2 x

UNx1U2
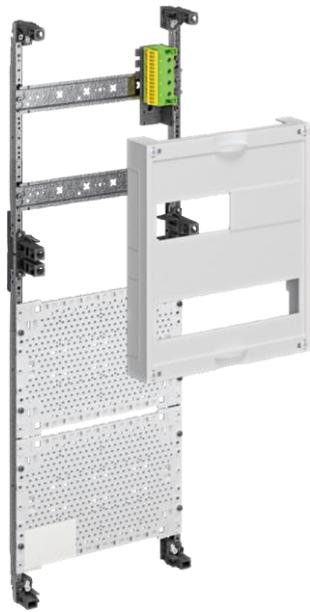
Example: UN51U2

Kit	Height	Width 1 (250 mm)	PEN support	QC terminal	UM00M0 mounting plate
2 x DIN rail at the top, multimedia kit with plastic mounting plates	5 (750 mm)	UN51U2	KN00A	KN14E	2 x
	6 (900 mm)	UN61U2	KN00A	KN14E	2 x

UNx1U3/UMx1UM3

Example: UN71U3

Kit	Height	Width 1 (250 mm)	PEN support	QC terminal	UM00M0 mounting plate
3 x DIN rail at the top, multimedia kit with plastic mounting plates	6 (900 mm)	UN61U3	UZ00K1	KN18E	2 x
	7 (1050 mm)	UM71UM3	UZ00K1	2 x KN10N + KN18E	2 x
		UN71U3	UZ00K1	KN18E	2 x
	8 (1200 mm)	UM81UM3	UZ00K1	2 x KN10N + KN18E	3 x
		UN81U3	UZ00K1	KN18E	3 x

UNx1U4/UMx1UM4

Example: UM81UM4

Kit	Height	Width 1 (250 mm)	PEN support	QC terminal	UM00M0 mounting plate
4 x DIN rail at the top, multimedia kit with plastic mounting plates	7 (1050 mm)	UM71UM4	UZ00K1	2 x KN10N + KN22E	2 x
		UN71U4	UZ00K1	KN22E	2 x
	8 (1200 mm)	UM81UM4	UZ00K1	2 x KN10N + KN22E	2 x
		UN81U4	UZ00K1	KN22E	2 x

6.2.4 Protection class on multimedia and hybrid kits

Hybrid kits in the lower section without a cover and 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. The label below is affixed to the mounting plate to draw the customer's attention to it.
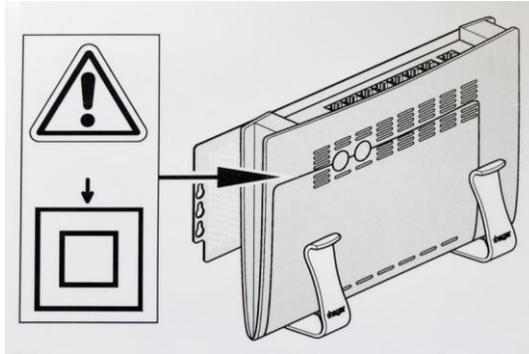
"Protective insulation" label

This is the only way to guarantee protection class II. Only the distribution kit is equipped with double insulation ex-works (with cover).

Protection class II can also be met by mounting UZ01A2 individual towers 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 mounting instruction sheet.
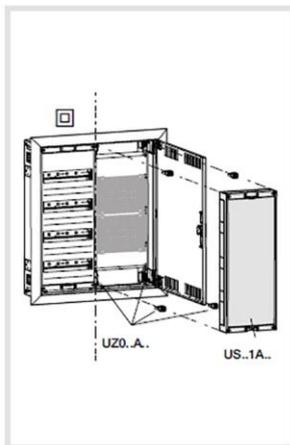
▫		UN0..FN	UZ03A1	UZ01A2	UZ04A1	UM00M0	UZ..1M..	US31A1	US41A1	US51A1
FWU3....	1x UN03FN	2x	4x	-	2x	1x UZ31M5/M6	1x	-	-
FWU4....	1x UN04FN	2x	4x	-	3x	1x UZ41M5/M6	-	1x	-
FWU5....	1x UN05FN	2x	4x	-	3x	1x UZ51M5/M6	-	-	1x
FWU6....	1x UN06FN	2x	4x	2x	4x	2x UZ31M5/M6	2x	-	-
FWU7....	1x UN07FN	2x	4x	2x	5x	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

Kit	Height	Width 1 (250 mm)
2 vertical uprights	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 (1 x)

UZ01A4 (4 x)

Tower overpart

UZ01A1 (100 x)

UZ04A1: Double tower

Technical changes reserved

6.3.3 U… DIN rail

U842B: Standard DIN rail 12 modules

U842C: DIN rail 26 modules

UT22C: Insulated DIN rail, 11.5 modules,
lowered, 1 field wide, depth-adjustable up to 21 mm

6.3.4 UM00M0 plastic mounting plate

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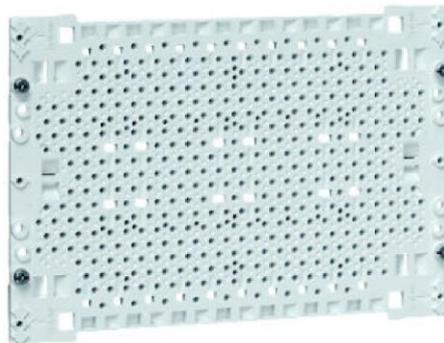
Example: UM00M0
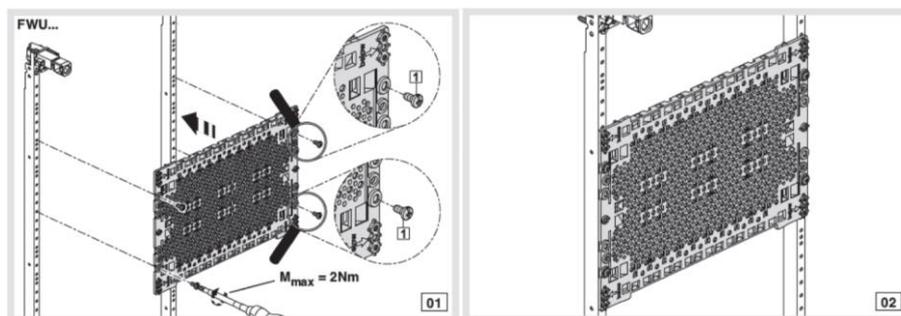
Mounting the UM00M0 plastic mounting plate on the front of vertical uprights

Functions

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
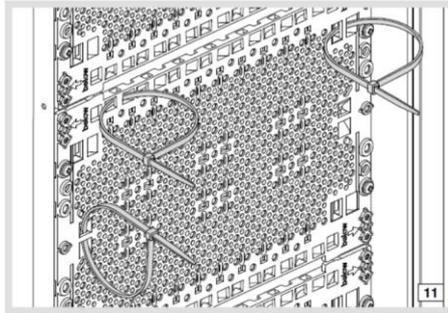
Cable ties mounted on UM00M0 plastic mounting plate
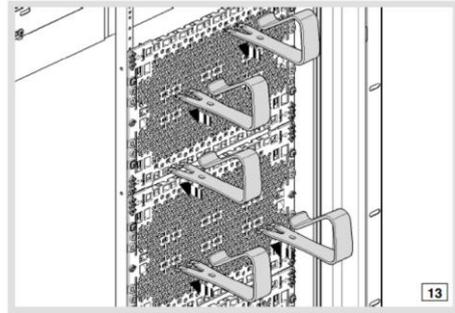
VZ02MM modem holder mounted on UM00M0 plastic mounting plate
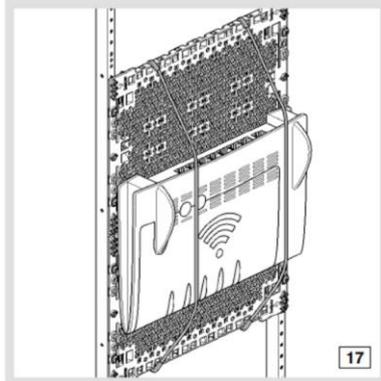
VZ340 fixing kit with modem mounted on UM00M0 mounting plate
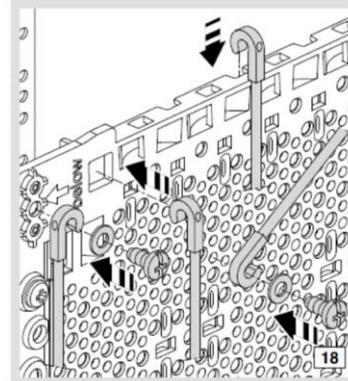
Mounting options for VZ340 fixing kit

Assembly

The mounting plate is provided with 10 short and 10 long screws suitable for plastic 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).
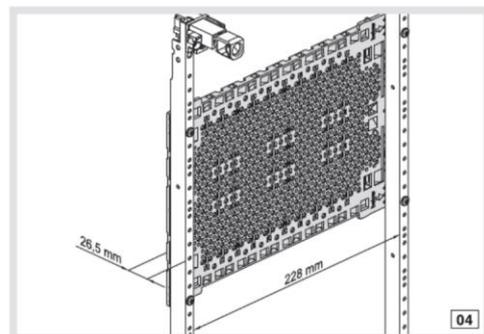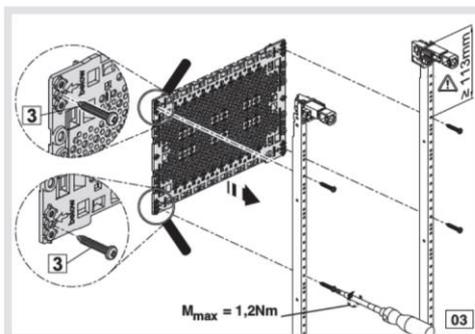
Mounting the UM00M0 plastic plate on the back of vertical uprights
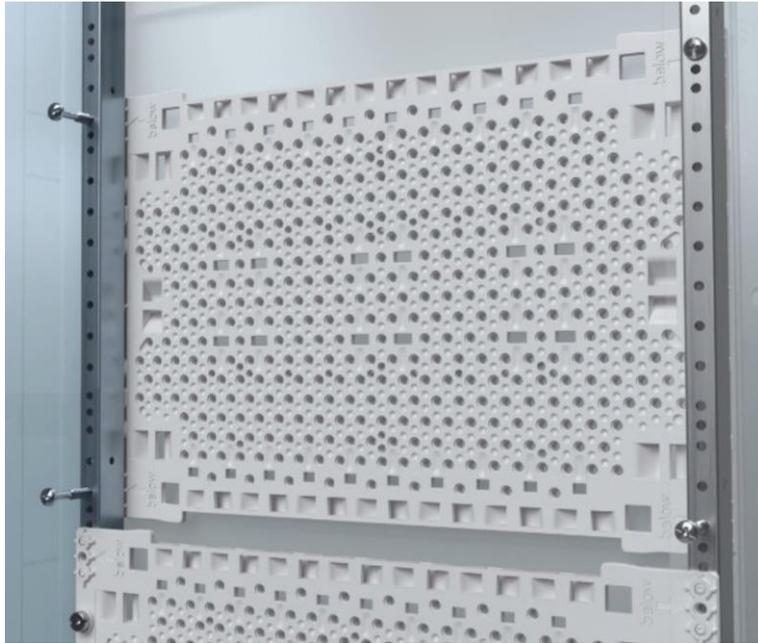
Mounting plate attached to the back of the vertical uprights (top of picture)
and to the front of the vertical uprights (bottom of picture)

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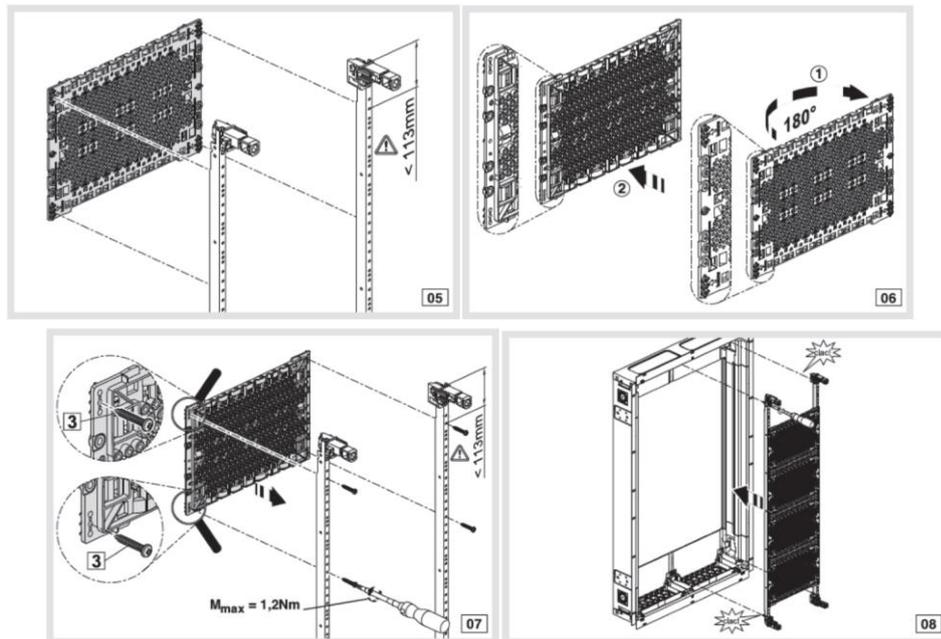
Mounting the plastic plate < 113 mm above the top corner of the support frame: the mounting plate must be turned 180°

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 is not exceeded (1.2 Nm).

6.3.5 Steel mounting plates UZxxMx

Kit	Height	Width 248 mm	Width 498 mm
Steel mounting plate, perforated Ø 3.2 mm, 1.2 mm thick (rectangular shape)	310	UZ31M5	UZ32M5
	460	UZ41M5	UZ42M5
	610	UZ51M5	UZ52M5
	760	UZ61M5	UZ62M5

Example: UZ42M5

Kit	Height	Width 248 mm
Steel mounting plate, perforated Ø 3.2 mm, 1.2 mm thick (elongated shape)	240	UZ21M6
	390	UZ31M6
	570	UZ41M6
	720	UZ51M6
	890	UZ61M6
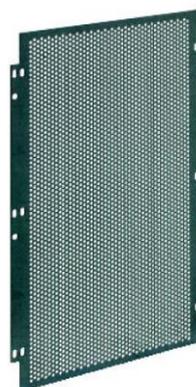
Example: UZ31M6

6.3.6 USxxAx covers

Plastic covers that are 1 field wide (250 mm) can be ordered as individual parts under the following product codes:

Field height	Cover type		Distance T: Top row to top edge (mm)	Distance B: Bottom row to bottom edge (mm)
	Plain	Slotted with 12 module openings and distance of 125 mm between the rows		
1 (150 mm)	US11A1	US11A2/US11A3 *	75/81.25	75 / 68.75
2 (300 mm)	US21A1	US21A3	100	75
3 (450 mm)	US31A1	US31A3	125	75
4 (600 mm)	US41A1	US41A5	125	100
5 (750 mm)	US51A1	US51A5	125	125
6 (900 mm)	-	US61A5	150	125

* US11A2 with central opening/US11A3 with asymmetrical opening (offset downward by 6.25 mm)

US11A2

US11A3

US31A1
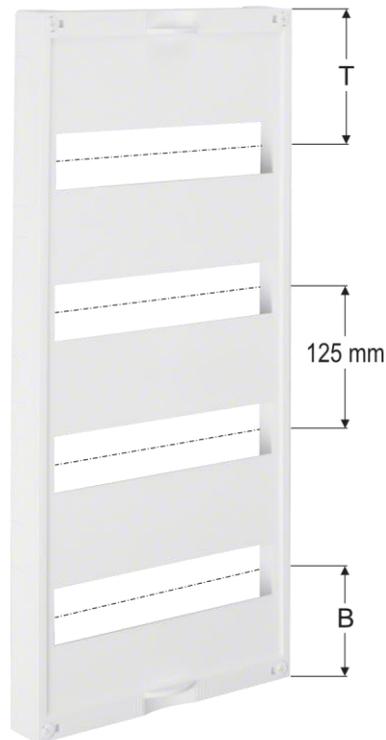
US41A5

6.4 Multimedia accessories

The FWU field distributor is pre-equipped to receive the multimedia fittings. You can choose between multimedia kits with perforated steel mounting plates or with 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 kits are fitted with perforated steel mounting plates and the new UMx1UK kits with plastic mounting plates.
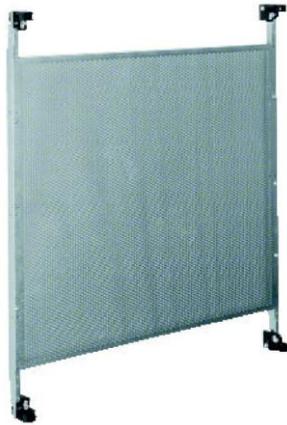
Example: UN42TN perforated plates

Example: UM41UK
plastic plates

In each UMx1UK multimedia kit, empty spaces have been created at the top and bottom for installing new multimedia accessories. For example, patch panels and UM00Hx and UM00Kx sockets can be installed at the top and neatly covered with a cover. At the bottom, Volta VZ00AS and VS00ASF triple sockets can be mounted horizontally and also covered with a cover (see illustration on next page).

Equipped enclosure with mounted multimedia kits 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.
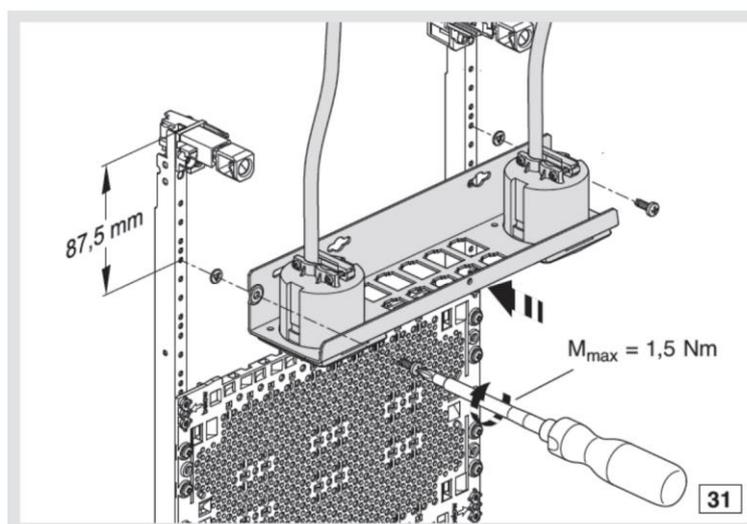
Horizontal installation of patch panel at the top on the vertical up-
rights

A special cover can be mounted on top. Before doing so, two 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. In both items, the tower overparts are 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.
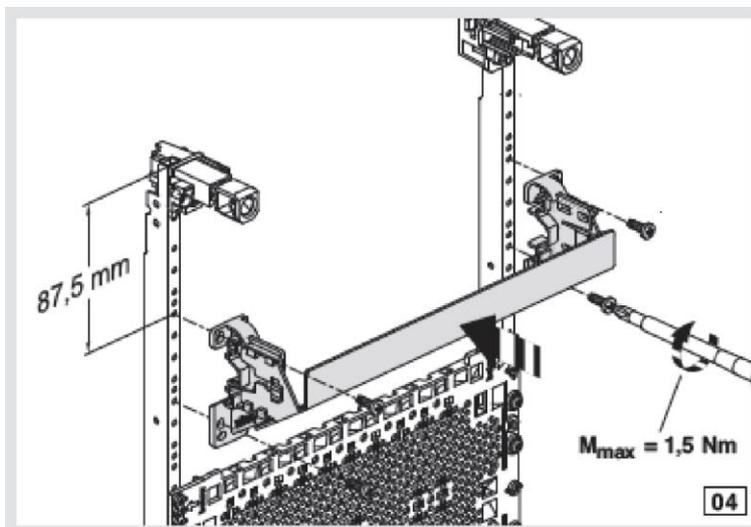
Mounting the cover for the Volta patch panel support

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, two tower overparts (UZ02A1) must be inserted.

The cover can be ordered with product code UM00S3 or with the UM00S1 set. In both items, the tower overparts are 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
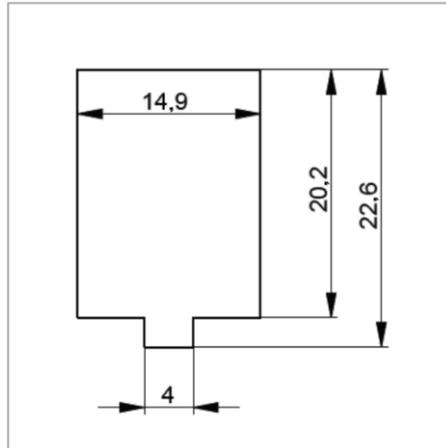
HMS system
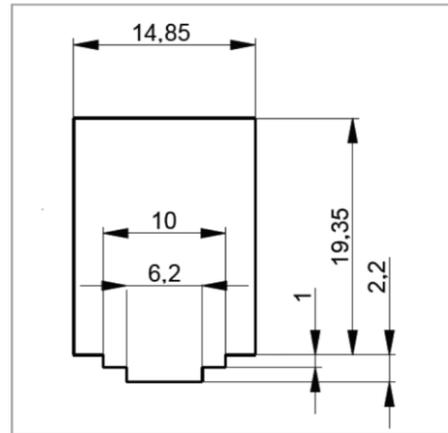
E-DAT
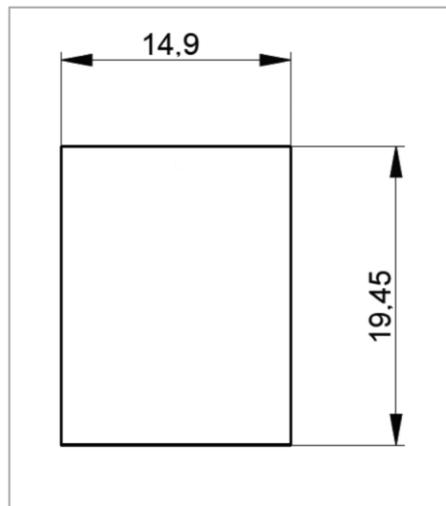
Keystone
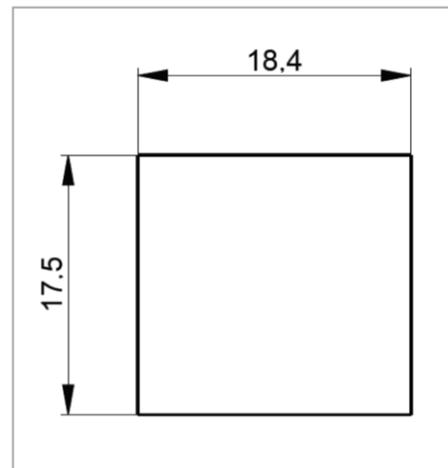
Lexcom

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

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 plate patch panel

UM00M4

UM00M5/UM00M6

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 plate 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 included. These can be ordered, for example via product code VZ314RJ. FZ12MK is suitable for Keystone and has no Keystone modules included.

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 plate 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

A special patch panel and socket combination has been designed for the German market.

UM00K3

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 UM00K3 patch panel for this 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 panel is similar to UM00K3 but has 5 openings for Lexcom patch inserts and 1 opening for fibreglass in the centre.

UM00K7

UM00K8

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

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

UM00H1

UM00H2

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

WH70300200Z

UM00K1/UM00K2

UM00K1

UM00K2

In the centre, the UM00K1 and K2 patch panels 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 holder can be directly screwed vertically onto vertical uprights or mounting plates.

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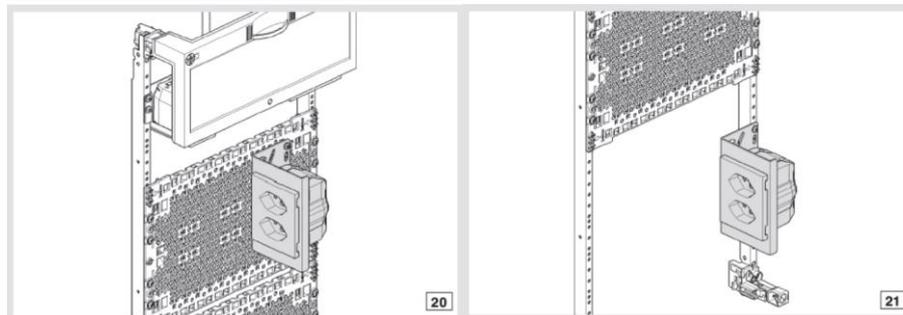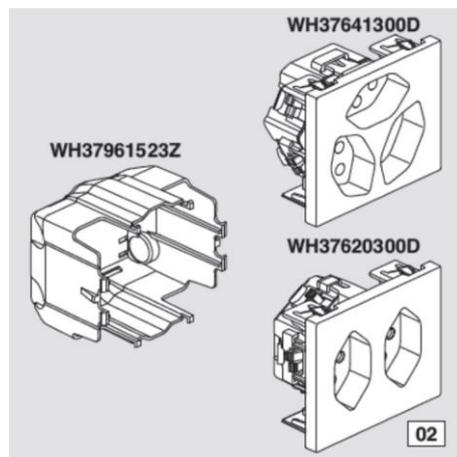
Top: snap-in sockets and cover
Bottom: Mounting the UM00H0 socket holder

Important note: FLF sockets must be covered with the WH37961523Z cover to guarantee protection class II.
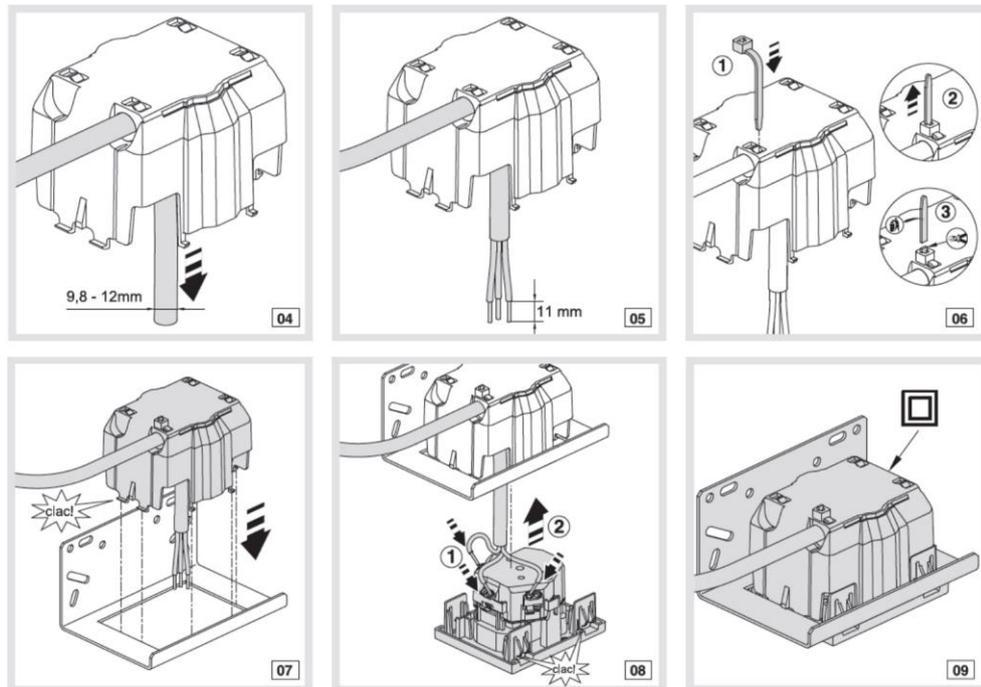
Mounting the WH37961523Z cover for FLF sockets to guarantee protection class II

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:
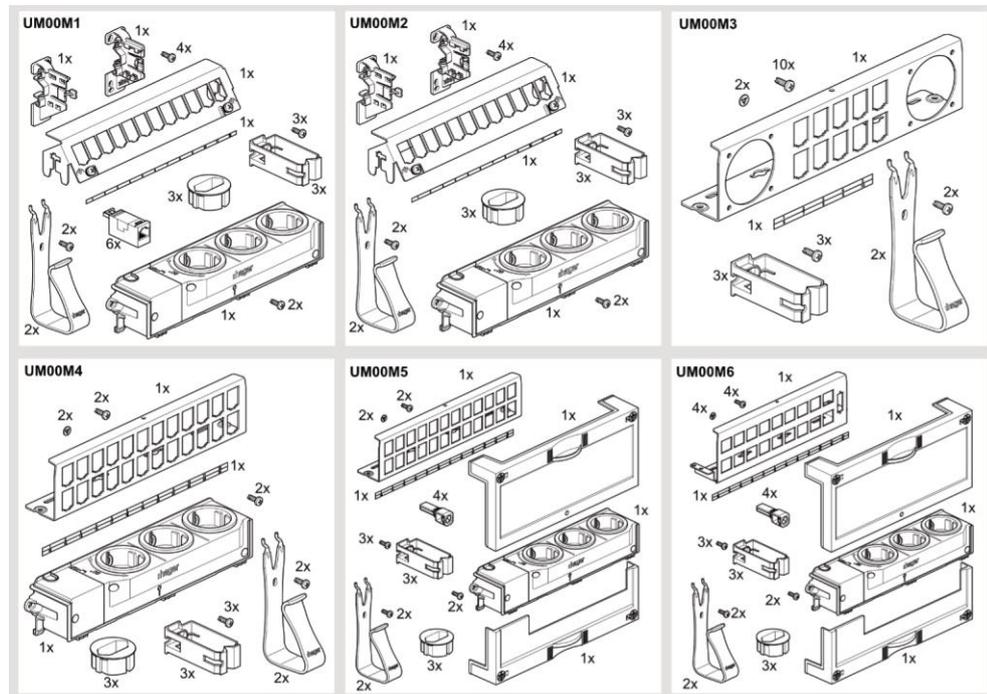
Overview of UM00Mx multimedia set

- 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 internal fittings

Chapter index

7.1　Coding

Order number code for accessories

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	Cable duct cover sideways for FWU 219 mm
FWU00C4	Cable duct cover sideways for FWU 369 mm
FWU00C5	Cable duct cover sideways for FWU 519 mm
FWU00C6	Cable duct cover sideways for FWU 669 mm
FWU00C7	Cable duct cover sideways for FWU 819 mm
FWU00C8	Cable duct cover sideways for FWU 969 mm
FWU00F1	Association kit univers FW
FWU00L1	Stiffener strip, 1-field, univers FW
FWU00L2	Stiffener strip, 2-field, univers FW
FWU00L3	Stiffener strip, 3-field, univers FW
FWU00P1	Cable entry plate flush mounting box FWU
FWU00V3	Partition, vertical, for FWU board 500 mm
FWU00V4	Partition, vertical, for FWU board 650 mm
FWU00V5	Partition, vertical, for FWU board 800 mm
FWU00V6	Partition, vertical, for FWU board 950 mm
FWU00V7	Partition, vertical, for FWU board 1100 mm

Accessories from other product ranges

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

Additional accessories from the univers system

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...
UN…, UM…	Vertical uprights, multimedia accessories, etc.
UW…	Support frames...
UZ…, ZZ…	Towers, mounting plates, screws, etc,

7.2 Universal 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 in 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 mounting instruction sheet 6LE005468A supplied with the enclosure.
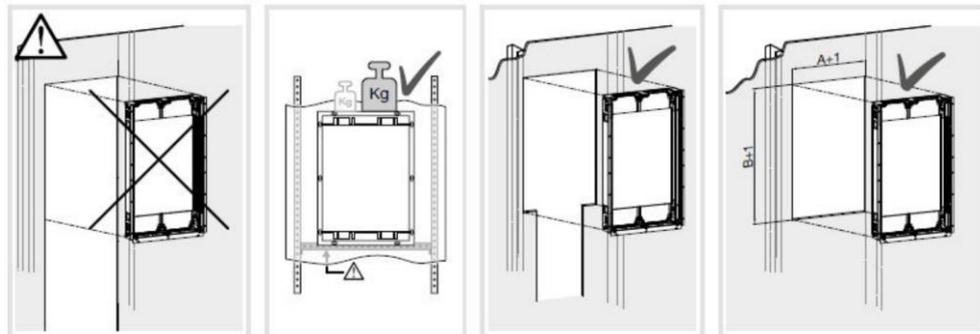
For a hollow wall installation, support the weight of the enclosure from below. If the enclosure is very heavy, mount a transverse batten beneath the enclosure to support it.
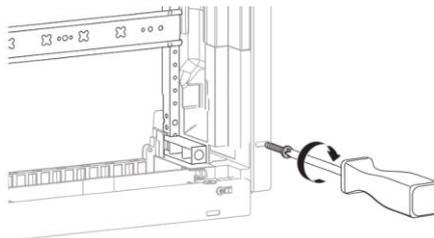
You can also secure the wall cabinet initially by screwing it through the elongated holes on the side walls of the body.

Mounting hollow wall anchors
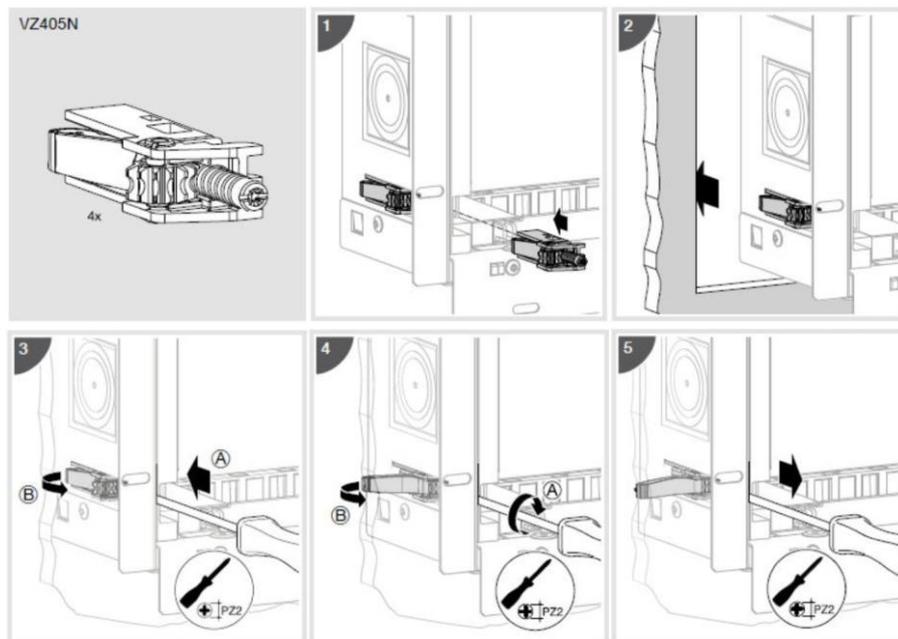
Mounting the VZ405N hollow wall anchor in wall cabinets

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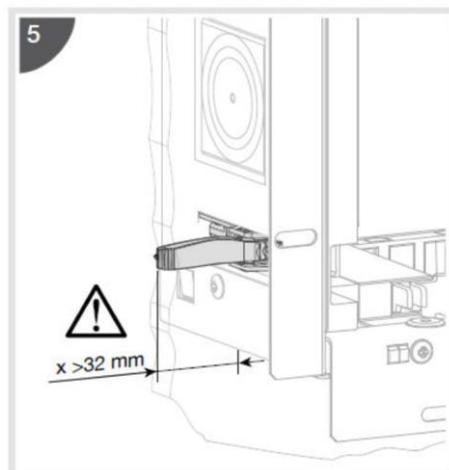
Keep a space of at least 32 mm around the sides so that the hollow wall anchor can be flipped forward

Technical changes reserved

7.2.2 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

7.2.3 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 insert the wall cabinet into a hollow wall above existing cables and conduits.

7.2.4 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.

You can also mount the FZ850F cable strain relief bar as another option for attaching cables/increasing strain relief. One set contains 2 bars for FWU and 4 screws.
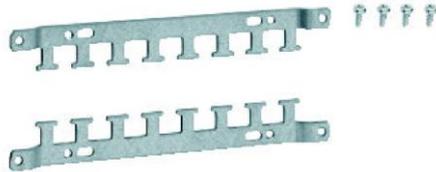
Accessory set FZ850F with 2 cable strain relief bars and 4 screws

The metal bar, made of galvanised steel, has been specially developed as an accessory for the FWU enclosure. It consists of 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, where 2 screw holes have been designed for this purpose.
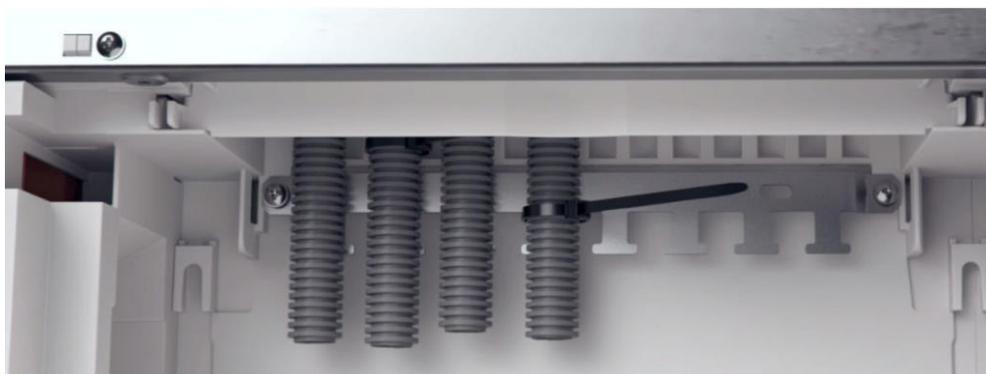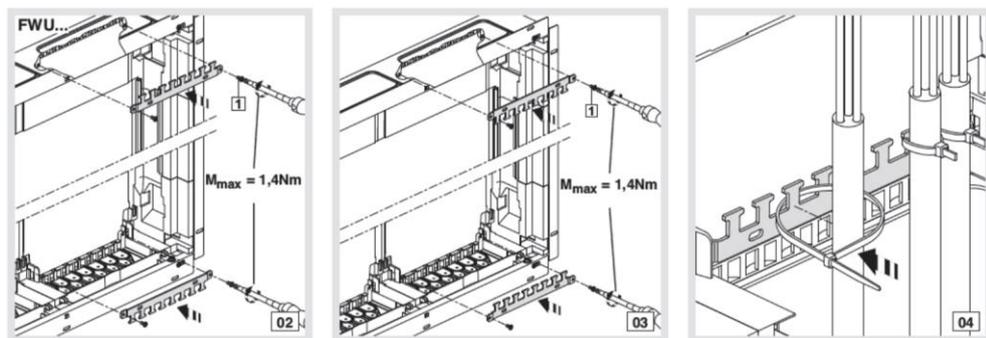
Attaching conduits and cables to the mounted FZ850F metal bar

Mounting cable strain relief bar FZ850F

The bars can be turned 180° upwards or to the side.
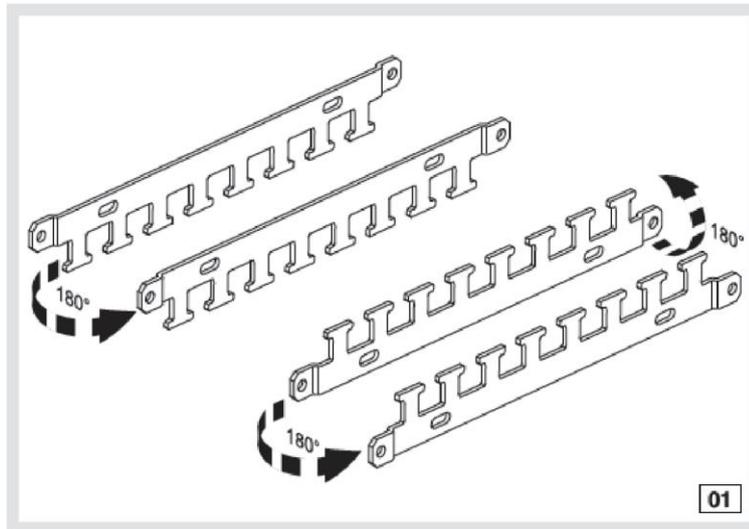
Options for turning cable strain relief bar FZ850F

Important note: The screws must be fastened with a max. torque of 1.4 Nm.
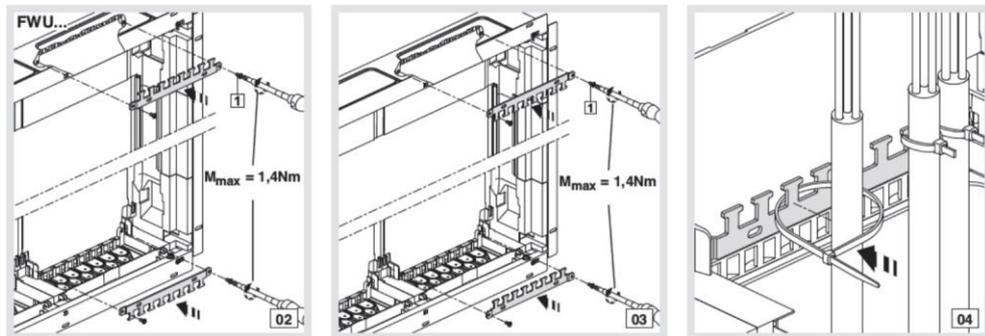
Mounting the FZ850F cable strain relief bar

7.2.5 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 page 25).

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

Assembly
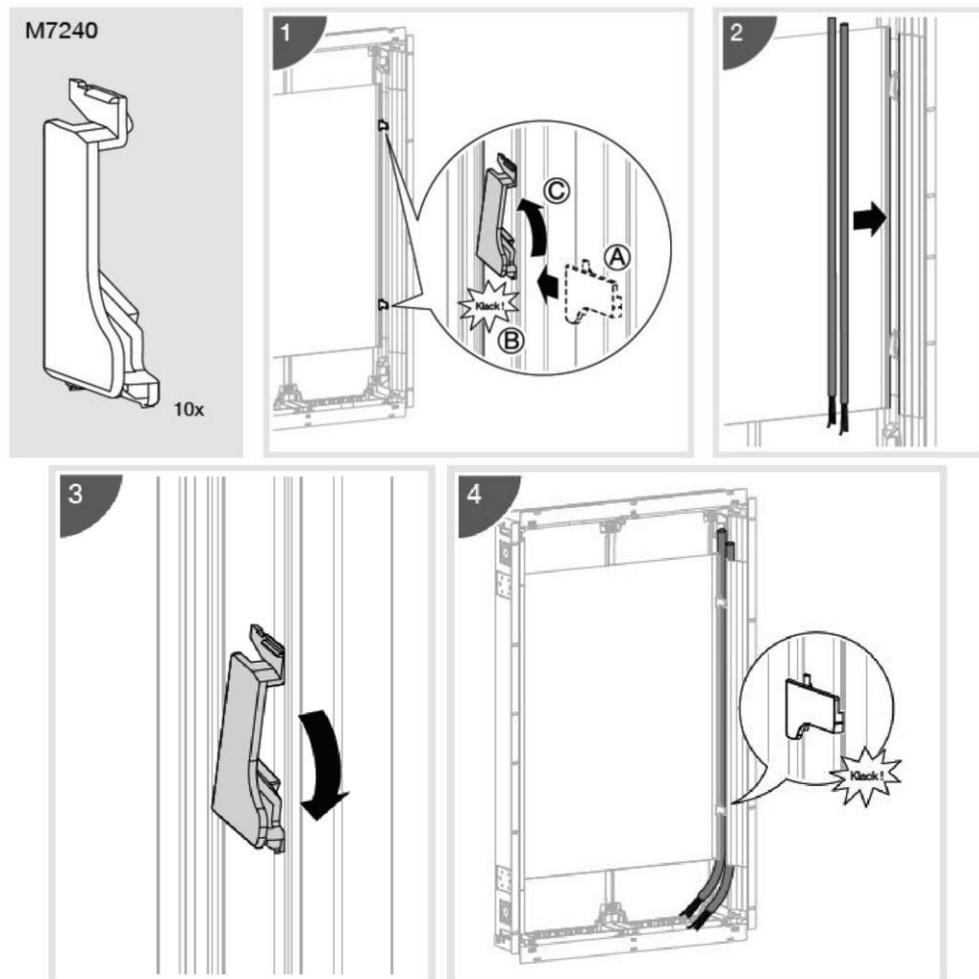
Mounting the cable clips from accessory set M7240

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 are designed slightly differently and cannot be mounted into the FWU enclosure. Pivoting these parts ("C" in figure 1) can damage the plastic guide in the side part of the cabinet (figure 3).

7.2.6 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 as standard. 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 via the clips (similar to the Tehalit LFH cable trunking system).

Enclosure height	Product code	Length [mm]
3 (500 mm)	FWU00C3	219
4 (650 mm)	FWU00C4	369
5 (800 mm)	FWU00C5	519
6 (950 mm)	FWU00C6	669
7 (1100 mm)	FWU00C7	819
8 (1250 mm)	FWU00C8	969

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
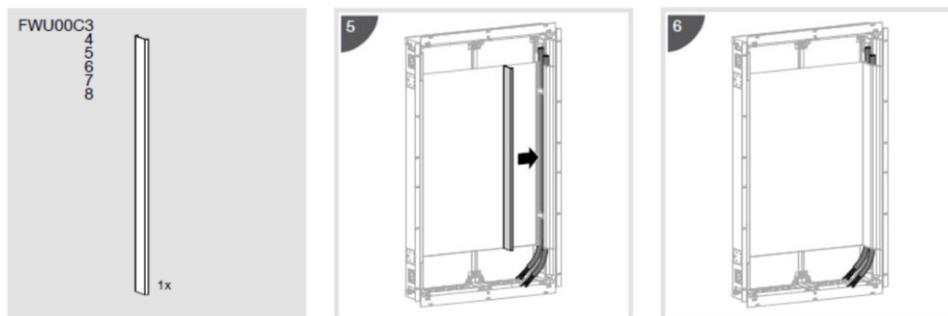
Mounting the FWU00Cx cable duct cover

7.2.7 Partitions

The univers FW kits can be partitioned vertically and horizontally.

Enclosure with mounted partitions

Horizontal partition

A horizontal partition inside a 250 m-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
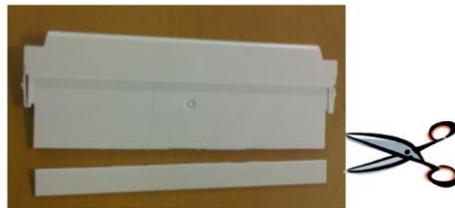
Preparing ZZ10H for installation in the FWU flush-mounted field distributor

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

Two kits next to one another can also be separated vertically. The new FWU00Vx partitions have been designed for the purpose. They replace the 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 offer interesting features:

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

- Top/bottom pre-punches for cable entry
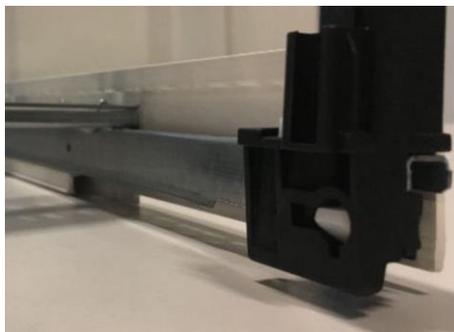
- Small cable ducting system (8 x 8 mm) below the vertical upright

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

Assembly instructions - Positions for installing double towers

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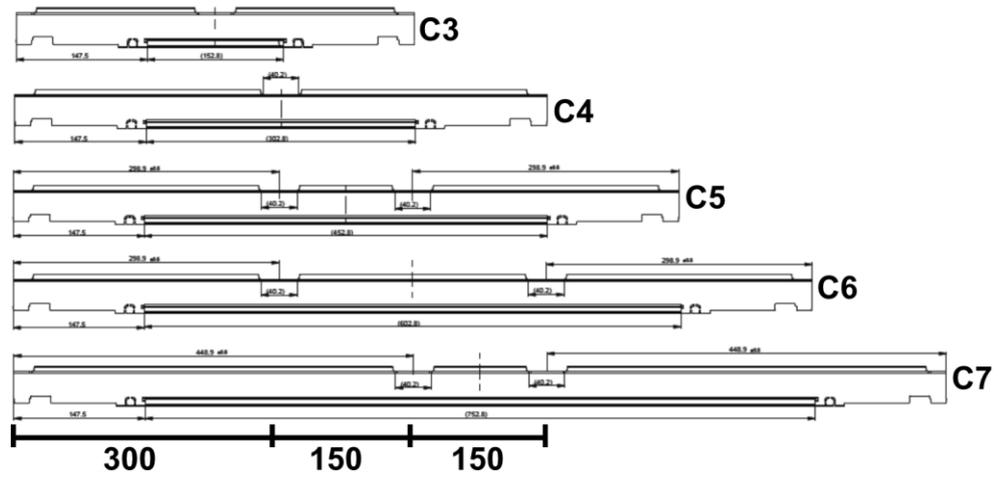
Positions for installing double towers

7.2.8 Screw set ZZ44SF for fixing vertical uprights

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 rails and screwed into place.

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

Assembly
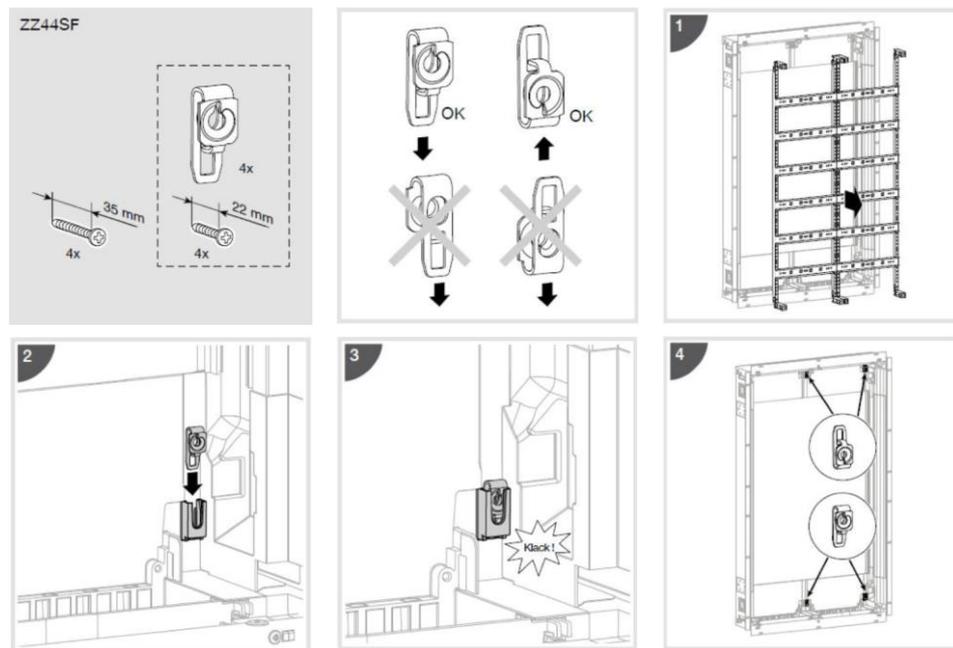
Mounting the ZZ44SF screw set to fix the vertical upright

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 persons with appropriate testing experience

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

Chapter index

8.1 Testing intervals for recurring tests

In the interest of ensuring a high level of operational safety, commercial switchgear and controlgear assemblies 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/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)
Enclosure, jacketing and protective devices	1 year Recommendation	External visual inspection Switching operation/functional testing	Electrically skilled person (with testing experience)
RCD (RCCB)	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	Repair if necessary, 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

Inspections	Remarks
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 plate/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.

Interior cleaning by electrically skilled persons only

- ➢ 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 supplies a cleaning agent for plastic surfaces; the order number is **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 feeder
- ➢ 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.

Correct disposal of this product (Electrical waste).

(To be applied in European Union countries and other European countries with a separate collection system).

The marking on the product or on the accompanying documentation indicates that it cannot be disposed of with normal household waste after its service life. Please dispose of this device separately from other waste in order to protect human health and the environment from the adverse effects of unregulated waste disposal. Recycle the device in order to promote the sustainable reuse of material resources.

Private users should contact the distributor who sold the product, or the relevant authorities, to find out how to recycle the device in an environmentally responsible manner. Business users should contact their suppliers and refer to the conditions in the sales contract. This product must not be disposed of with other industrial waste.

10 List of all product codes

Product code	Page	Product code	Page	Product code	Page	Product code	Page
FD00P5	61	FWU42K2	35	FWU62GS	32	FZ001N	46
FWU00C3	111	FWU42K3	36	FWU62K	33	FZ001NV1	46
FWU00C4	111	FWU42L	37	FWU62K1	34	FZ002F	46
FWU00C5	111	FWU42M2	38	FWU62K2	35	FZ002F1	48
FWU00C6	111	FWU42S	41	FWU62K3	36	FZ002FM	48
FWU00C7	111	FWU42S1	42	FWU62L	37	FZ002FM2	48
FWU00C8	111	FWU43A	30	FWU62M2	38	FZ002N	46
FWU00F1	63	FWU43D	31	FWU62M3	39	FZ002NM	47
FWU00P1	107	FWU43K	33	FWU62M4	39	FZ002NM2	47
FWU00V3	113	FWU43L	37	FWU62N	40	FZ002NV1	46
FWU00V4	113	FWU43S	41	FWU62S	41	FZ003F	46
FWU00V5	113	FWU43S1	42	FWU62S1	42	FZ003N	46, 48
FWU00V6	113	FWU51A	30	FWU63A	30	FZ003NV	46, 48
FWU00V7	113	FWU51D	31	FWU63D	31	FZ005F	46
FWU31A	30	FWU51L	37	FWU63L	37	FZ005FM	48
FWU31D	31	FWU51S	41	FWU63N	40	FZ005N	46
FWU31L	37	FWU51S1	42	FWU63S	41	FZ005NM	47
FWU31S	41	FWU52A	30	FWU63S1	42	FZ005NV	48
FWU31S1	42	FWU52D	31	FWU71A	30	FZ005NV1	46
FWU32A	30	FWU52GS	32	FWU71D	31	FZ006F	46
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FWU32GS	32	FWU52K1	34	FWU71S	41	FZ006FM2	48
FWU32K1	34	FWU52K2	35	FWU71S1	42	FZ006FT	46
FWU32K2	35	FWU52K3	36	FWU72A	30	FZ006N	46
FWU32L	37	FWU52L	37	FWU72D	31	FZ006NM	47
FWU32M2	38	FWU52M2	38	FWU72GS	32	FZ006NM2	47
FWU32S	41	FWU52N	40	FWU72K1	34	FZ006NV	48
FWU32S1	42	FWU52S	41	FWU72K2	35	FZ006NV1	46
FWU33A	30	FWU52S1	42	FWU72L	37	FZ007F	46
FWU33D	31	FWU53A	30	FWU72M2	38	FZ007FM	48
FWU33L	37	FWU53D	31	FWU72N	40	FZ007N	46, 48
FWU33S	41	FWU53K	33	FWU72S	41	FZ007NM	47
FWU33S1	42	FWU53L	37	FWU72S1	42	FZ007NV	46, 48
FWU41A	30	FWU53N	40	FWU73A	30	FZ009F	46
FWU41D	31	FWU53S	41	FWU73D	31	FZ009FM	48
FWU41L	37	FWU53S1	42	FWU73L	37	FZ009N	46
FWU41S	41	FWU61A	30	FWU73N	40	FZ009NM	47
FWU41S1	42	FWU61D	31	FWU73S	41	FZ009NV	48
FWU42A	30	FWU61L	37	FWU73S1	42	FZ009NV1	46
FWU42D	31	FWU61S	41	FWU81D	31	FZ010F	46
FWU42GS	32	FWU61S1	42	FWU81L	37	FZ010FM	48
FWU42K	33	FWU62A	30	FZ001F	46	FZ010FM2	48
FWU42K1	34	FWU62D	31	FZ001F1	48	FZ010FT	46

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Product code	Page	Product code	Page	Product code	Page	Product code	Page
UM00M6	92	UN41U1	77	US51A5	86	UZ41M5	85
UM00S1	101	UN42TN	76	US61A5	86	UZ41M6	85
UM00S2	101	UN51TN	76	UT22C	82	UZ42M5	85
UM00S3	101	UN51U2	77	UT44EN	112	UZ51M5	85
UM00Z0	74	UN52TN	76	UW31U	73	UZ51M6	85
UM31UK	74	UN61TN	76	UW31UA	73	UZ52M5	85
UM41UK	74	UN61U2	77	UW41U	73	UZ61M5	85
UM51UK	74	UN61U3	77	UW41UA	73	UZ61M6	85
UM61UK	74	UN62TN	76	UW51U	73	UZ62M5	85
UM71UK	74	UN71TN	76	UW51UA	73	VZ00APZ	100
UM71UM3	77	UN71U3	77	UW61U	73	VZ00AS	100
UM71UM4	77	UN71U4	77	UW61UA	73	VZ00ASF	100
UM81UK	74	UN72TN	76	UW71U	73	VZ02MM	82
UM81UM3	77	UN81U3	77	UW71UA	73	VZ340	82
UM81UM4	77	UN81U4	77	UW81U	73	VZ405N	105
UN02FN	81	US11A1	86	UW81UA	73	VZ741	107
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UN04FN	81	US11A3	86	UZ01A2	81	WH37620300D	96
UN05FN	81	US21A1	86	UZ01A4	81	WH37641300D	96
UN06FN	81	US21A3	86	UZ03A1	81	WH66549000D	96
UN07FN	81	US31A1	86	UZ04A1	81	WH70300200Z	96
UN08FN	81	US31A3	86	UZ21M6	85	ZZ10H	39, 113
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UN32TN	76	US41A5	86	UZ31M6	85		
UN41TN	76	US51A1	86	UZ32M5	85		

11 Glossary

Degree of pollution

The degree of pollution defines the ambient conditions of a switching device. If the switching device is installed in a housing, the ambient conditions within the housing apply. The degree of pollution according to EN (IEC) 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 micro environment.

- 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 intended to be operated by ordinary persons (DBOs) to EN (IEC) 61439-3

According to EN (IEC) 61439-3, a DBO is a 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 (IEC) 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 (IEC) 61439-3 (VDE 0660-600-3) as the applied standard.

Characteristic features of such a switchgear and controlgear assembly:

1. 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.
2. Outgoing circuits are installed with short-circuit protection devices intended for operation by ordinary persons; in line with e.g. IEC 60898-1 (miniature circuit breakers/MCBs), IEC 61008 (residual current operated circuit breakers, RCCBs), IEC 61009 (residual current circuit breakers with overcurrent protection, RCBOs), IEC 62423 (type B RCCBs and RCBOs) and IEC 60269-3 (D fuse inserts for use by ordinary persons). Additional information is provided in Section 8 of EN (IEC) 61439-3.
3. Their rated voltage to earth does not exceed 300 V AC.
4. The rated current (I_{nc}) of the outgoing circuit is 125 A maximum; the rated current of the switchgear and controlgear assembly (I_{nA}) is 250 A maximum.
5. The switchgear and controlgear assembly is intended for distributing electrical energy and may also include the appropriate controlling and signalling devices.
6. The switchgear and controlgear assembly is closed and fixed.
7. The switchgear and controlgear assembly may be intended for indoor or outdoor installation (if with the univers N interior equipment system: indoor installation).
- The protection type of a DBO for indoor installation must be at least IP2XC.

- Devices or replacement components intended for operation by ordinary persons: Protection against contact with live parts must be in place when operating devices or replacing components.
- The IK code against mechanical impacts must be at least IK05 for indoor installation.
- Operating conditions: Degree of pollution 2 applies as a minimum.
- The number of neutral conductor connections must be at least the number of outgoing connections on outgoing circuits that require a neutral conductor connection.
- The DBO must have at least two connections for protective equipotential bonding conductors to the electrical system.

Switchgear and controlgear assemblies to EN (IEC) 61439-3 that permit operation by ordinary persons may also include equipment that ordinary persons are not allowed to operate. Effective measures must be in place to prevent ordinary persons from operating this equipment.

Additional information is provided in EN (IEC) 61439 Parts 1 and 3.

EN (IEC) 61439/DIN EN (IEC) 61439

The EN (IEC) 61439 series of standards aims to harmonise the rules and requirements for switchgear and controlgear assemblies.

The valid part of the EN (IEC) 61439 standard series is always the applicable part of the standard, e.g. Part 2 of the (EN (IEC) 61439-2) standard for power switchgear and controlgear assemblies, together with the basic Part 1 of the standard (EN (IEC) 61439-1).

Connection between European standard and International standard

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

Parts of the EN (IEC) 61439 standard

Part of European standard	Content
EN (IEC) 61439-1	Low-voltage switchgear and controlgear assemblies - Part 1: General rules
EN (IEC) 61439-2	Low-voltage switchgear and controlgear assemblies - Part 2: Power switchgear and controlgear (PSC) assemblies
EN (IEC) 61439-3	Low-voltage switchgear and controlgear assemblies - Part 3: Distribution board for operation by ordinary persons (DBO)
EN (IEC) 61439-4	Low-voltage switchgear and controlgear assemblies - Part 4: Particular requirements for assemblies for construction sites (ACS)
EN (IEC) 61439-5	Low-voltage switchgear and controlgear assemblies - Part 5: Assemblies for power distribution in public networks
EN (IEC) 61439-6	Low-voltage switchgear and controlgear assemblies - Part 6: Busbar trunking systems (busways)
EN (IEC) 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

IP protection type/IP degree of protection

The protection type indicates the suitability of electrical equipment, and therefore also of switchgear and controlgear assemblies, for use in different environmental conditions. For each switchgear and controlgear assembly, the protection type is specified with the IP code according to IEC 60529 and verified according to EN (IEC) 61439.

- Verification of protection against ingress of foreign bodies and against contact with live parts.
- Verification with regard to preventing water from entering the system.

The protection type IP code enables the selection of suitable equipment to prevent the risk of electric shock. It applies to jacketings, covers and housings. It is specified using two code numbers and an optional, additional letter.

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

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Technical changes reserved

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