

**univers FWB manual**  
**Wall-mounting cabinets**  
**FWB**  
**Degree of protection IP44**



**:hager**

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## **1 About this manual**

This manual is part of the distribution board wall cabinet FWB.

### **1.1 Aim of this manual**

This document has been written for users of the distribution board wall cabinets FWB by Hager. The manual contains safety-related information on the life phases of the product for electricians / installers.

- Read and refer to these instructions before working on the cabinet or switching device combination.
- Please also refer to the assembly instructions attached for the respective cabinet or cabinet accessories.
- Keep the instructions in a safe place. Authorised staff must have access to these instructions at all times.

### **1.2 Warranty and liability**


These instructions do not form part of Hager's terms and conditions of sale and supply. No new warranty or guarantee claims in excess of the terms and conditions of sale and supply may be derived from this manual.

#### **Disclaimer**

Hager reserves the right to amend or supplement the product or documentation at any time and without notice. Hager does not assume any liability for printing errors and resulting damages.

### 1.3 Symbols and warning signs used

#### Warning sign structure

 <b>Signal word</b>
<b>Type and source of the danger!</b> <b>Consequences of ignoring the danger</b> ➤ Measures for preventing the danger


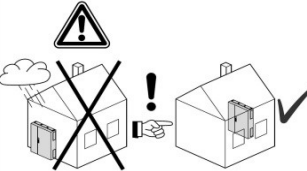
#### Danger levels in warning signs

Colour	Signal word	Consequence on non-observance
	DANGER	Death, serious injury
	WARNING	Potential death or serious injury
	CAUTION	Injury
	ATTENTION	Physical damage

#### Instructions with a fixed sequence

Step	Action
1	Instructions step 1
2	Instructions step 2

#### Additional symbols and their meaning

Symbol	Meaning
	All work must be completed by a qualified electrician.
	The product is for indoor assembly and use.

Presentation	Meaning
1., 2., 3., ...	Numbered lists with a fixed sequence
-	Lists and instructions without a fixed sequence
➤	Measures / instructions to prevent danger

## 2 For your safety

- Avoid danger. Take notice of the safety-related information in this chapter to ensure that the distribution board is assembled and used safely.
- Please also take note of the safety-related information in other chapters.

### 2.1 Proper use

The Hager distribution boards FWB are made for wall installation up to IP44 for residential and special purpose buildings up to 125 A infeed current.

The FWB distribution boards have a depth of 161 mm and can be installed on the wall, flush or partially recessed. These cabinets come in 6 heights and 4 widths.

The Hager FWB distribution boards are ready to be expanded with the **univers Z** internal installation system components.

With the tested FWB distribution board and univers Z internal installation system by Hager, switching device combinations compliant with EN 61439 Part 3 (Distribution boards intended to be operated by ordinary persons / DBO) can be realised.

#### Fixed indoor use / wall installation

The FWB distribution boards are closed and made for surface or flush wall installation on the insides of buildings. The operating conditions for internal installations specified in EN 61439 and the maximum environmental temperatures must be complied with at the place of installation.

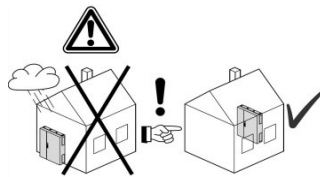


Fig. 1: Indoor installation

By using the FWB distribution boards with a plain door, protection class IP44 and/or protection class IP31 with a slotted door can be achieved. The notices in these instructions regarding compliance with the protection class must be taken note of when installing the unit.

The FWB distribution boards are available in protection class SK II (double insulated). The notices in these instructions regarding compliance with the protection class must be taken note of when installing the unit.

For further information, please read the technical data.

Proper use also includes:

- Reading and referring to this manual, installation instructions and the instructions for the internal system
- Compliance with the requirements for authorised staff.

#### Misuse


Any other or additional use as well as changes and modifications to the distribution board cabinet are classed as misuse. Hager does not assume any liability for damages resulting from misuse.

#### Operating area restrictions

The FWB distribution boards must not be used in various areas to prevent danger or damage to the sheath. The distribution board is unsuitable in:

- areas requiring a higher protection class,
- areas in which the ATEX guidelines must be complied with,
- business premises with a high risk of fire,
- corrosive environments. Particularly environments containing chlorine, sulphur, acid or salt can damage the cabinet and internal components.

## 2.2 Authorised staff requirements



- Switching device combinations must always be installed, commissioned, expanded repaired, maintained, removed and disposed of by qualified electricians.
- Qualified electricians must have experience in initial testing as well as subsequent commissioning, repairs and maintenance.

Product life phase	Minimum vocational training, qualifications or skills
Planning	Qualified electrician, consultant electrical engineer
Transport, assembly, installation	Qualified electrician
Commissioning	Qualified electrician with experience in testing
Operation	Short-circuit devices for operation by inexperienced staff within distribution boards for operation by inexperienced staff in accordance with EN 61439-3 (DBO) All additional components must be secured against use by inexperienced staff.
Inspection and maintenance	Qualified electrician with experience in testing
Expansions	Qualified electrician, planning and documentation required
Removal and disposal	Qualified electrician, for mechanical and electrical work with specific instructions only: person instructed in work on electrical installations

- A qualified electrician is able to assess the work assigned to them and recognise potential dangers thanks to their vocational training, knowledge and experiences as well as knowledge of the relevant regulations.
- A person instructed in work on electrical installations must be sufficiently instructed and supervised by a qualified electrician. The instructed person must therefore be able to recognise risks and prevent dangers arising from electricity.
- All persons who are not qualified electricians and who have not been instructed in working on electrical installations must be regarded as persons inexperienced in working with electrical installations. Persons inexperienced in working with electrical installations must never work inside electrical installations on their own and independently. Persons inexperienced in working with electrical installations may only operate short-circuit devices that are intended for operation by inexperienced persons in accordance with EN 61439-3.

### 3 Technical data

#### Proper use

The technical data must be consulted to ensure proper use.

#### Switching device combination information

The FWB distribution board is ready for the univers Z internal system (with mounting rails UN0xA and towers UZ01A2 or UZ04A1). In this configuration, it is suitable as a switching device combination in accordance with EN 61439-1/-3 for:

- Frequency  $f_n = 50 \text{ Hz}$
- Rated voltage  $U_n = 230 \text{ V} / 400 \text{ V}$
- Rated surge voltage resistance  $U_{imp} = 4 \text{ kV}$ ; overvoltage category III
- Rated isolation voltage  $U_i = 400 \text{ V}$
- Pollution degree 2
- Minimum clearances = 3 mm
- Minimum creepage distances = 4 mm

#### Rated current

$I_{nA}$  max. 250 A

$I_{nc}$  max. 125 A

#### Resistance to short-circuiting $I_{cc}$

$I_{cc} < 10 \text{ kA}$

#### Application / operation

- Fixed
- Indoor installation
- For wall, flush or partially recessed mounting
- Unsuitable for hollow wall application
- When setting up the switching device combination in accordance with EN 61439 Part 3, operation by inexperienced staff is permissible (distribution board for operation by inexperienced staff / DBO). Devices that must not be operated by inexperienced staff must be marked according to the standards prior to setting them up and/or must require use of a key or tool. The additional requirements stated in standard EN 61439 must be met.
- Prepared for use under standard operating conditions in accordance with the EN 61439 series of standards. Deviations are possible if agreed between the installer and planner and taking into consideration the requirements stated in the EN 61439 series of standards.

#### Mechanical installation of devices / internal system

- Prepared for the univers Z internal system
- Compatible with some accessories from univers FW and univers N systems (restrictions due to size)
- For installation on univers Z UN0\*A mounting rails (not included in the scope of delivery for empty cabinets)
- Internal system pre-installed in complete cabinets, quick installation / removal thanks to locking technology
- Fixing the internal system with screws, optionally with the help of accessory set **ZZ44SF** (locknut + screws).

#### Protection class

- Protection class II double insulated



Note:

- When using multimedia panel (no covers), all devices and wiring must be double insulated. Only the distribution panel is double insulated from factory.

**Protection classes**

- IP44 with door (plain, transparent or multimedia non-slotted) and IPx4 standard lock FZ598N
- IP43 with door (plain, transparent or multimedia non-slotted) and IPx3 lock FZ598
- IP31 with door (slotted, or multimedia slotted)
- IP30 without door with covered internal panels. IP30 without door from factory is only ensured when distribution panels are inside.

**Note:**

- Take note of the protection class of the equipment.

**Impact protection**

- IK09 all around with plain door, except flange (excluded in the Standards)
- IK07 for slotted, transparent or multimedia door
- IK05 for cabinet with internal system, without door

**Colour**

- Door, exterior walls, covers and internal insulation: RAL 9010 (pure white)
- Metal parts of the internal system: grey and hot-galvanised
- univers Z fixing towers: black

**Equipment**

- Door and cabinet walls:
  - Made of steel, 1 mm thickness
  - Powder-coated with epoxy polyester paint, burnt in
- Insulating parts material:
  - Polystyrene (PS): covers, top / bottom parts, rear, sides
  - Polycarbonate / Acrylester-Styrol-Acrylnitril (PC / ASA): corners, multimedia plate
  - Polycarbonate (PC): multimedia door inserts
  - Acrylnitril-Butadien-Styrol (ABS): sealing plug
- univers Z mounting towers material:
  - Polyamide 6 (PA6): bottom parts, double towers
  - Polycarbonate (PC): top parts
- Blue seal made from Ethylene-Propylene-Dien (EPDM)
- Mounting rails and DIN rails made from hot-galvanised steel, 1 mm thickness
- Multimedia steel beams (patch panels) made from hot-galvanised steel, 1.5 mm thickness
- Multimedia perforated metal plates made from hot-galvanised steel, 1 mm thickness

Plastic parts in direct contact with the area behind the wall, e.g. corners and top and bottom parts pass the heat filament test at 750 °C. The cabinet is therefore unsuitable for hollow wall application (850 °C required).

**Summary of standards and regulations**

- Tested in accordance with EN 61439 -1/-3 (VDE 0660-600 -1/-3)
- Dimensions in accordance with DIN 43780
- IP44 degree of protection in accordance with VDE 0470, part 1 (DIN EN 60529)
- Protection class IP3X with open or without door
- Clearance and creepage distance in accordance with VDE 0110, part 1 and 2/1.89
- Rated isolation voltage: AC 400 V
- Overvoltage category III
- Pollution degree 2
- Insulation material class I
- Unsuitable for hollow wall application

## 4 Information about the FWB distribution board range

### 4.1 Cabinet delivery forms (complete / partially equipped / empty)

The FWB cabinet is available in three versions:

**Complete:** Order number includes enclosure, door and internal system.



Example: FWB42S



Example: FWB52N

**Partially equipped:** Order number includes enclosure but door or part of the internal system is missing. Customer can optionally complete the cabinet with a door and internal system components. This version is particularly useful if the multimedia panel design has not yet been clarified, prior to installation at the construction site or if a special door type is required that is unavailable in the complete version (e.g. multimedia door).



Example: FWB42P2



Example: FWB63T1S

**Empty:** The order number includes one empty cabinet. Customer can optionally complete the cabinet with a door and internal system. This version is particularly useful if the cabinet is to be installed at the construction site at a much earlier date and the internal system planning has not yet been full completed.



Example: FWB44D1

## 4.2 Body

### 4.2.1 Properties

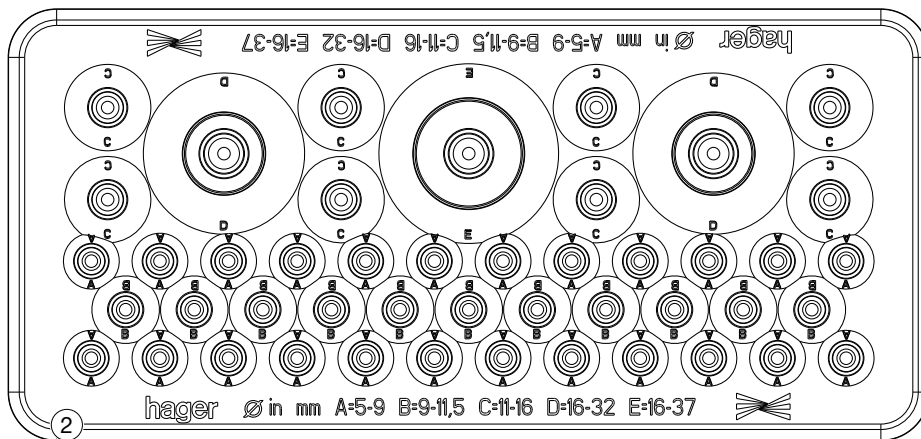
- ① The interior is double insulated with plastic cladding
- ② With two cable routing flanges (top / bottom) per panel
- ③ Two recesses (top / bottom) per panel for feeding cables through the rear panel
- ④ Entirely closed on the outside
- ⑤ With two exterior holes near the edges (top / bottom) for the installation of accessories such as cable storage box



Example: FWB42GS

**Two cable routing flanges per panel**

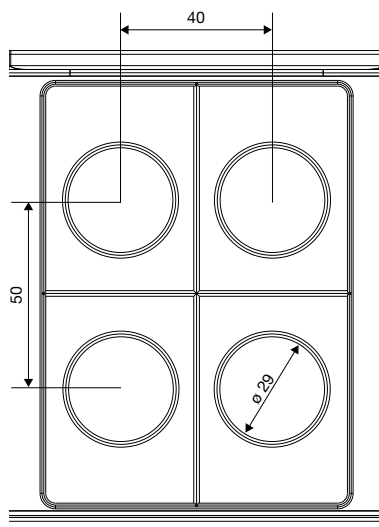
- 2 cable entries per panel (top and bottom), also available as accessory **FZ426**
- Flange at top / bottom made from 2 components with knobs for sticking through
- Internal cable entry surface: 191 x 75 mm
- Prepared for various cable diameters:
  - 24 x Ø5 / 10.5 mm
  - 11 x Ø9 / 11.5 mm
  - 8 x Ø11 / 16 mm
  - 2 x Ø16 / 32 mm
  - 1 x Ø16 / 37 mm



Hole pattern of the top / bottom cable entry flange FZ426

**Rear cable entries**

- 2 rear cable entries (top and bottom) in the top and bottom plastic parts are available in each panel with a width of 250 mm
- Can be punched out from the outside (first slightly scratch the grooves with a knife)
- Max. cable entry surface: 112 x 82 mm
- With 4 pre-stamps for cutting out for cable routings Ø 29 mm
- Circumferential groove for cutting out for installation of the IP44 flange **FZ428**. It is recommended to cut out the metal from the rear (prior to installing on the wall). Flange FZ428 is installed and screwed in from the front.



Rear cable entries in the plastic top / bottom part

- Flange FZ428 is made of 2 different plastic materials with knobs for sticking through. 20 cable openings for cable diameters up to Ø 11.5 mm are available.

Holes in the flange that have been opened can be resealed with the **FZ401** plug set.

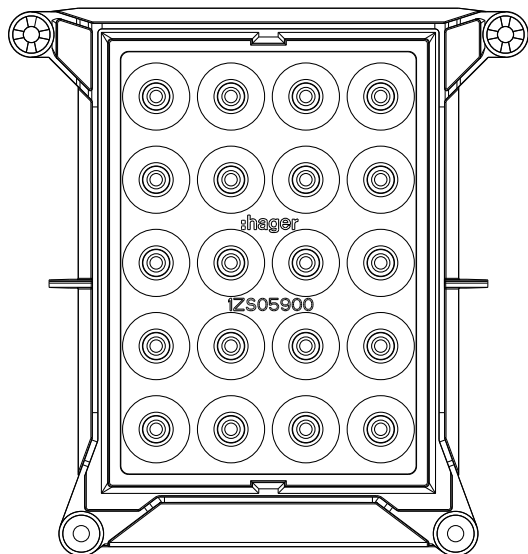
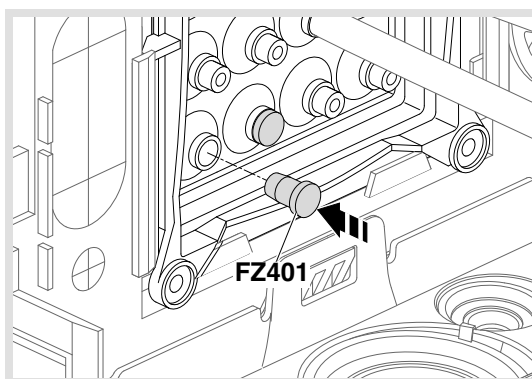
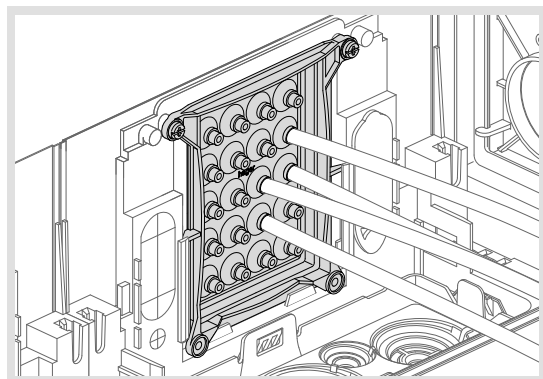


Image of flange FZ428



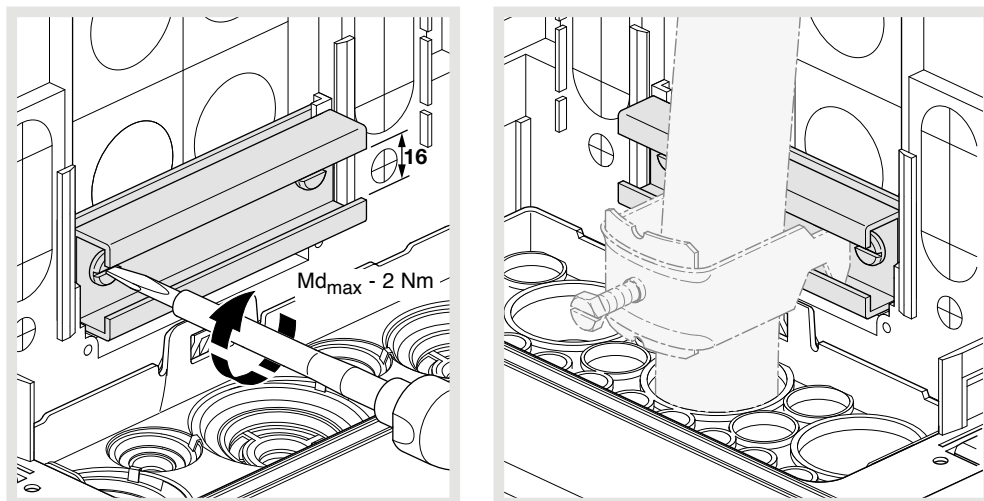
Cabinet with flange FZ428 installed on the plastic bottom part (front view)



Plug set FZ401

## Cable strain relief

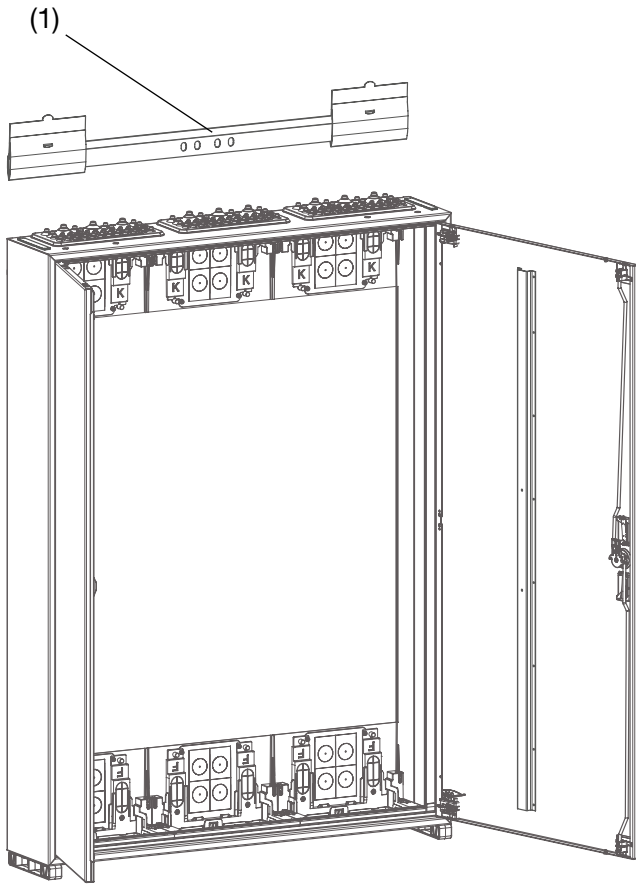
Large pipes and cables can be optionally fixed to the top and bottom of the FWB / cabinet with a cable strain relief. The 100 mm long C profile rail **FZ850S** (30 x 15 x 2 mm) can be used at the top and bottom per 250 mm panel width. The cable clamp can then be inserted in the C profile rail. Slot width: 16 mm.



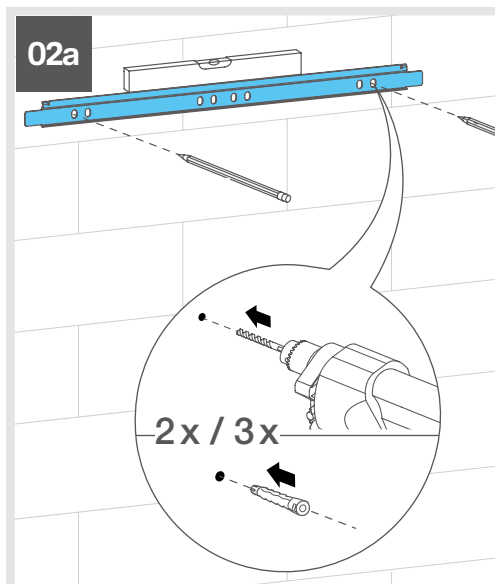
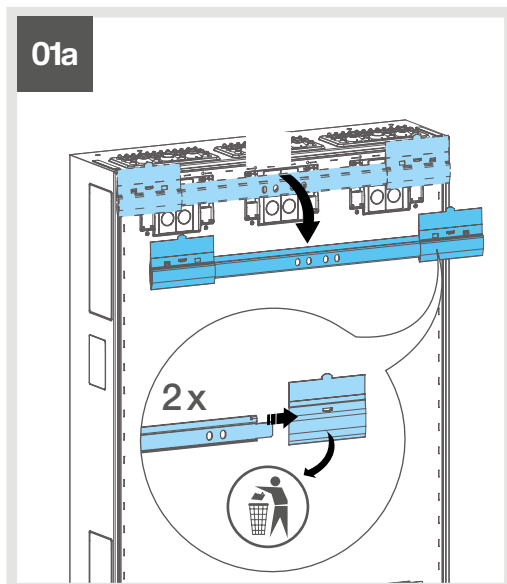
Fixing thick pipes to the plastic bottom part of the cabinet

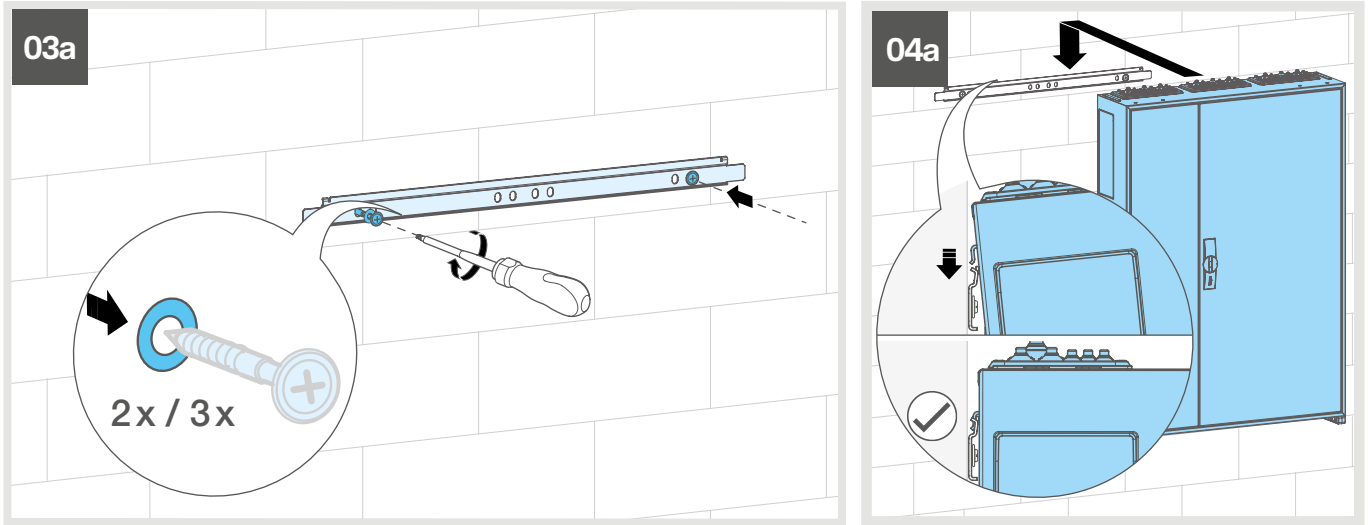
**Integrated cabinet mounting rail suspension:**

Since April 2026, the surface-mounted cabinet has been fitted with a cabinet mounting rail suspension system (1) and replaces the previous Basic and Quickset versions. It allows the cabinet to be mounted on the wall without having to remove the interior fittings or doors. The new mounting system consists of four 2 mm thick brackets and a rail pre-fitted behind the cabinet.

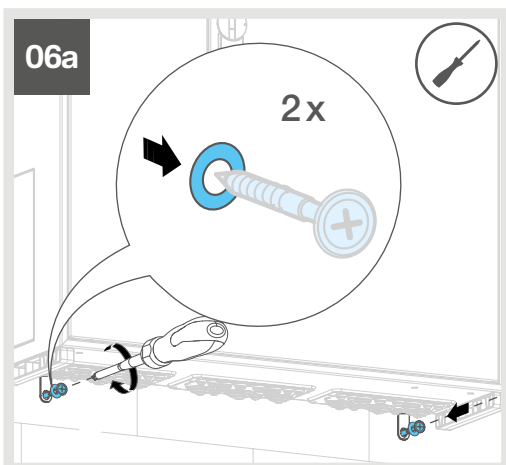
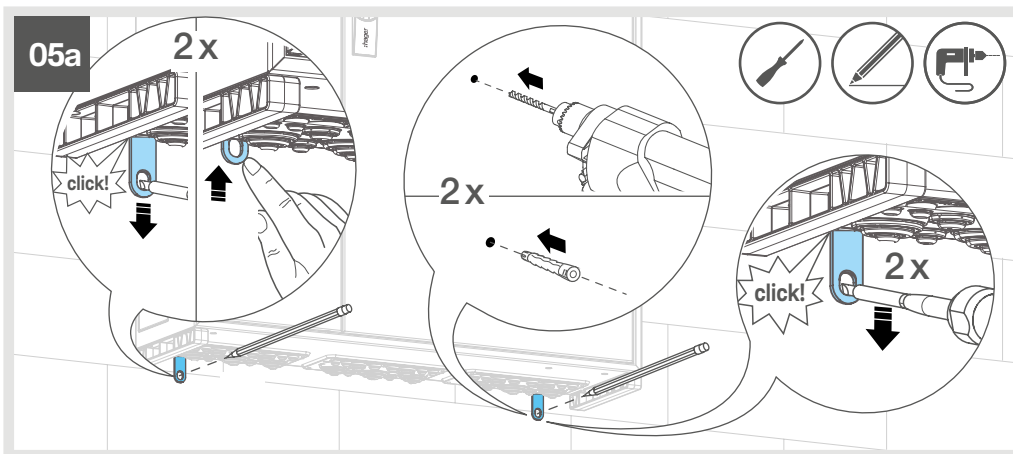


The rail (1) can be removed from the outside. To do this, first remove the cardboard corner protectors (Fig. 01a). Then fix the rail to the wall and level it using a spirit level (Fig. 02a). Finally, secure it using standard screws and wall plugs (Fig. 03a). The cabinet can then be hung onto the rail (Fig. 04a).



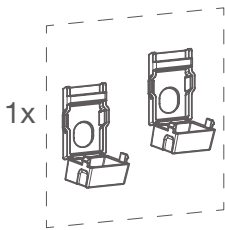


The two tabs (2) must be pulled down completely at the bottom using your finger or a screwdriver, until they reach the stop (Fig. 05a). They are then fixed to the wall using standard screws and wall plugs (Fig. 06a).

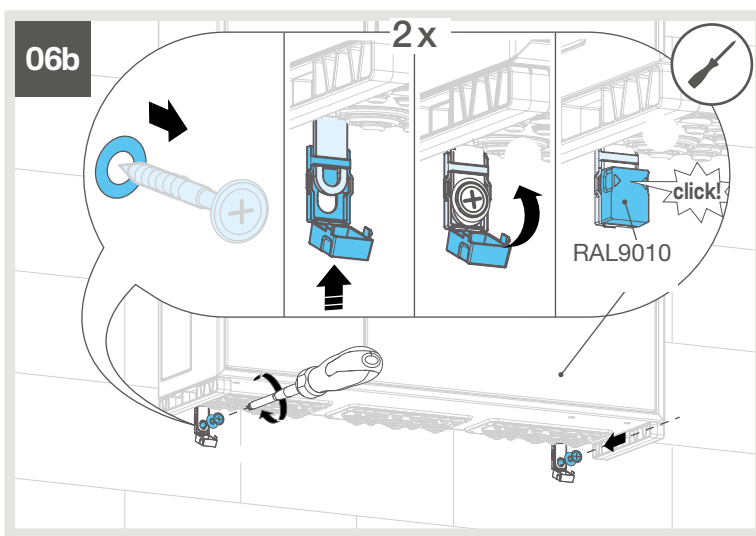


**Cover for lower fixation tab**

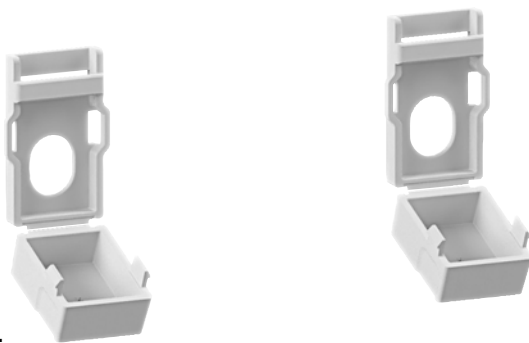
If, for aesthetic reasons, you do not wish any difference in colour, the lower screws can be concealed using two cover plates (3). These are included with every FWB.



These white plastic parts (RAL 9010) are inserted into the lower brackets before the screws are inserted. The screws are then tightened and the covers folded shut (see Fig. 06b).



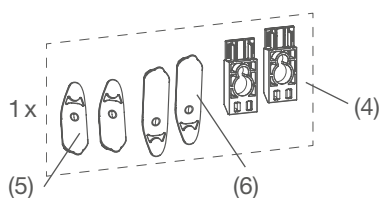
These two covers are also available as accessory **FZ967S**.



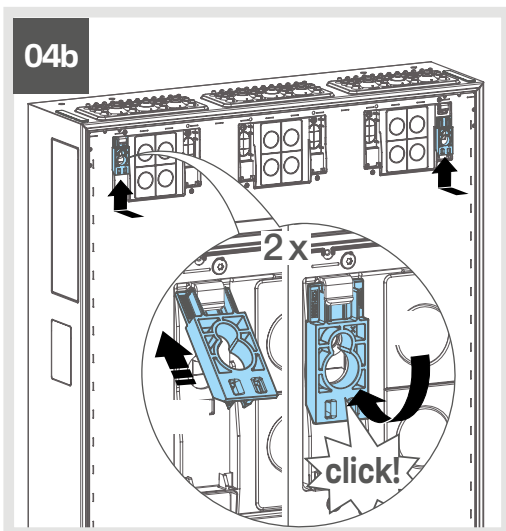
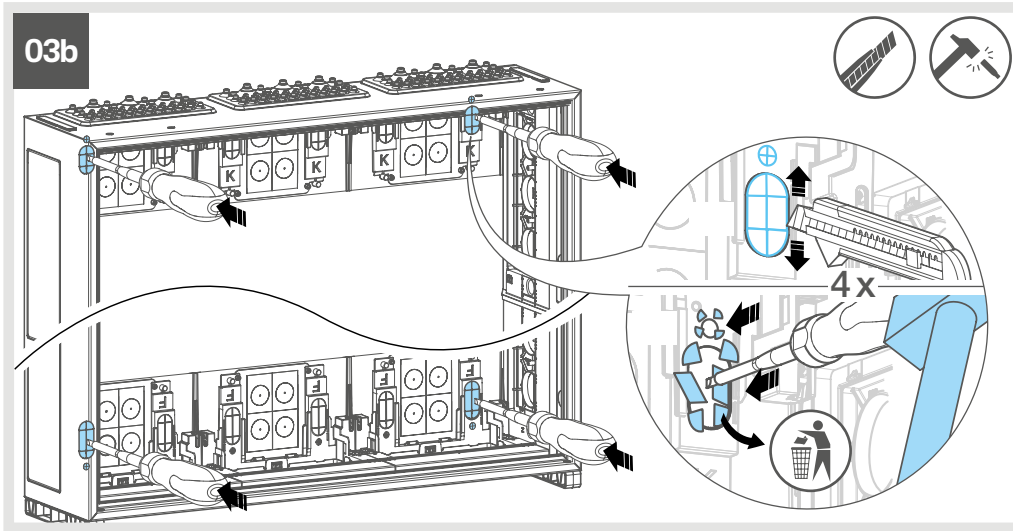
FZ967S

**4-point mounting**

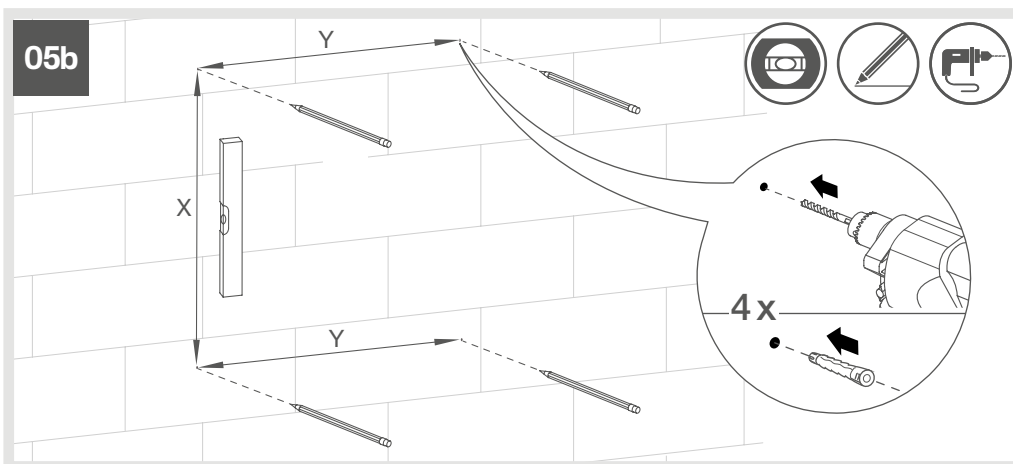
Conventional 4-point mounting through the cabinet is also possible. The following accessories are included in every FWB: two black spacers (4), two upper (5) and two lower (6) grey sealing plugs.

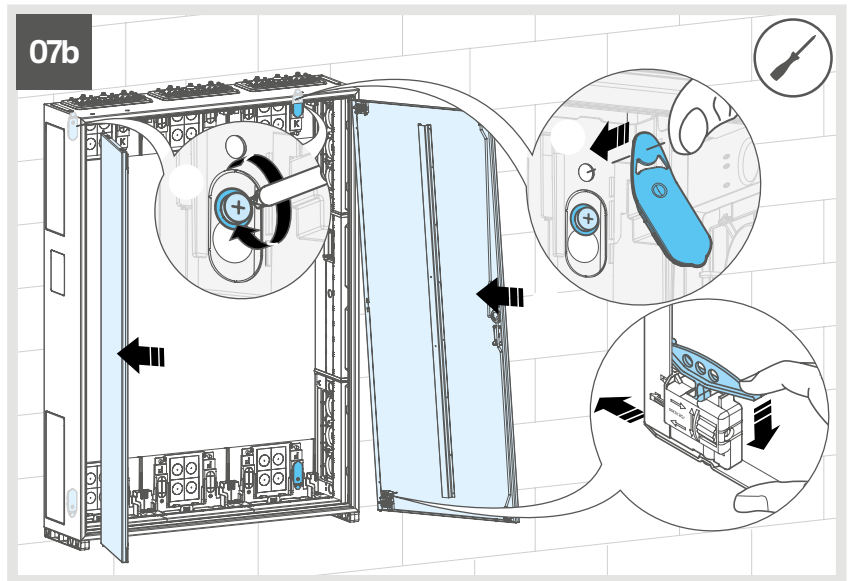
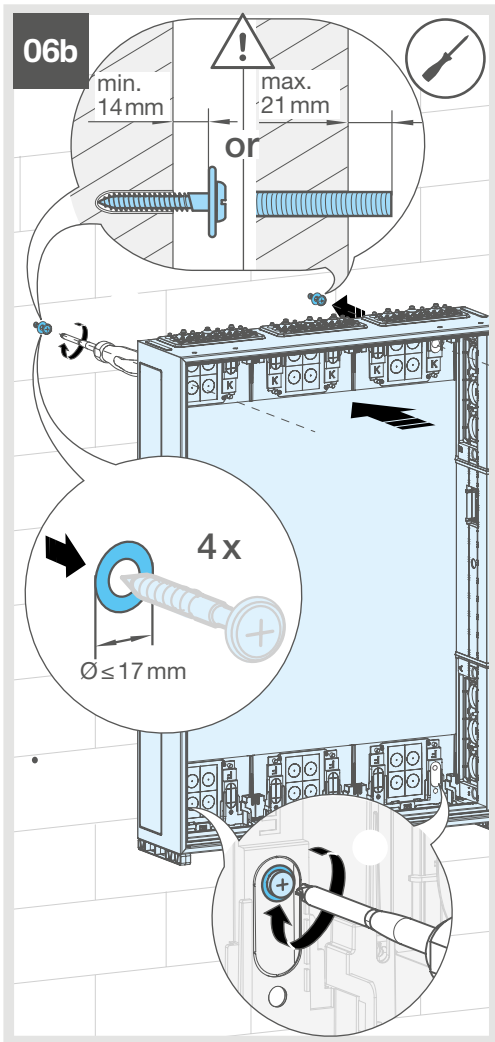


First, remove the rail and knock out the four inner mounting holes (see Fig. 03b). Then insert the two black spacers (3) into the upper tabs from the rear (Fig. 04b).



The mounting brackets at the bottom are pre-mounted at factory for direct fixing. The cabinet can now be secured at four points on the inside, as with the previous basic version (see Fig. 05b, 06b and 07b).





The external mounting at the bottom can be combined with the internal mounting at the top. Similarly, the top rail mounting can be combined with the lower internal mounting. This means that four different mounting combinations are possible. The relevant dimensions are summarised in Chapter **6.3 Wall Mounting** (page 63) and in the enclosed mounting instruction 6LE001243.

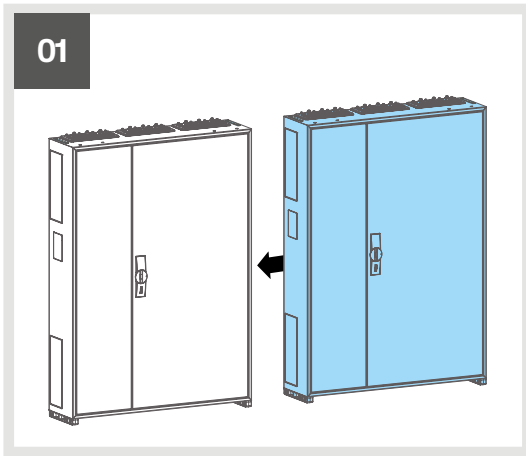
The accessory set for the 4-point mounting, comprising 4 locking plugs and 2 black spacers, is also available under reference number **FZ741**:



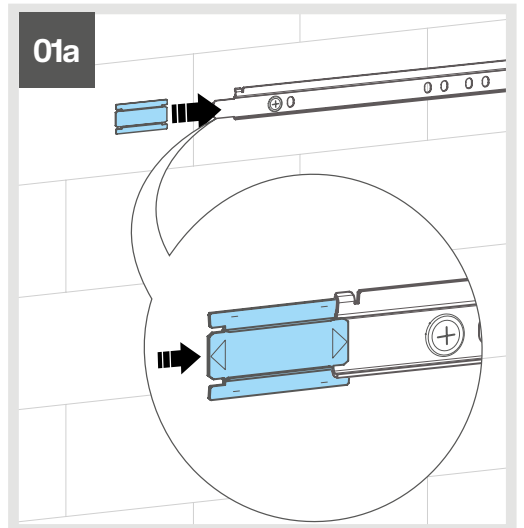
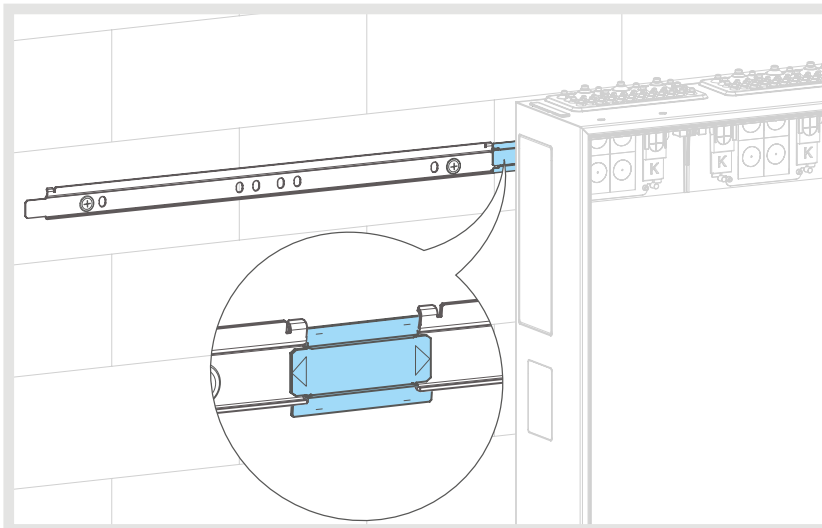
FZ741

**Rail alignment:**

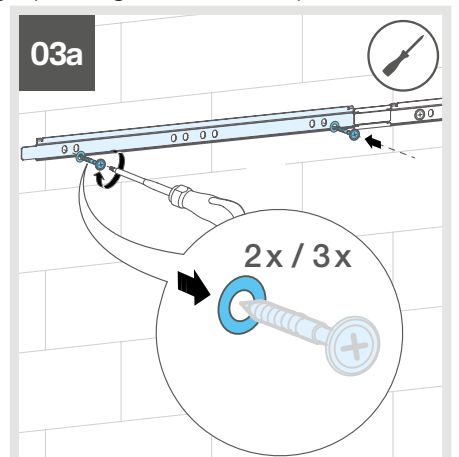
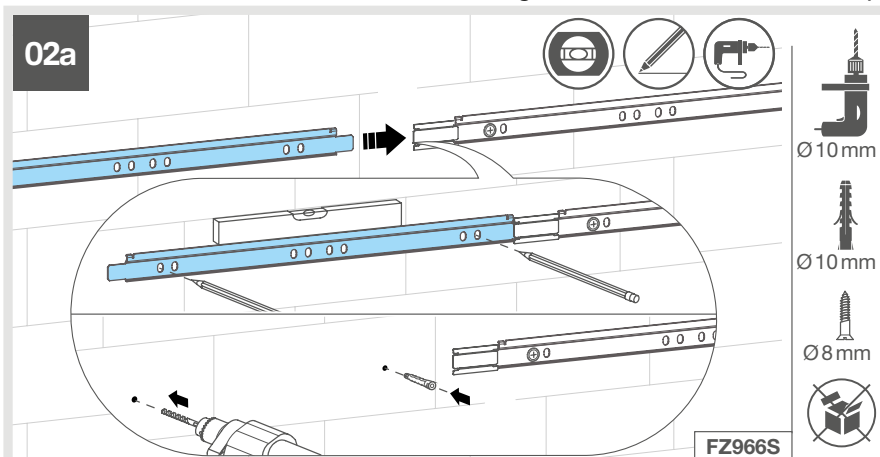
Using the **FZ966S** accessory, two cabinet mounting rails can be fitted at the correct spacing (see Fig. 01). The FZ966S consists of a black plastic component that is inserted into the first pre-assembled rail (see Fig. 01a). The second rail is then inserted and aligned on the other side.



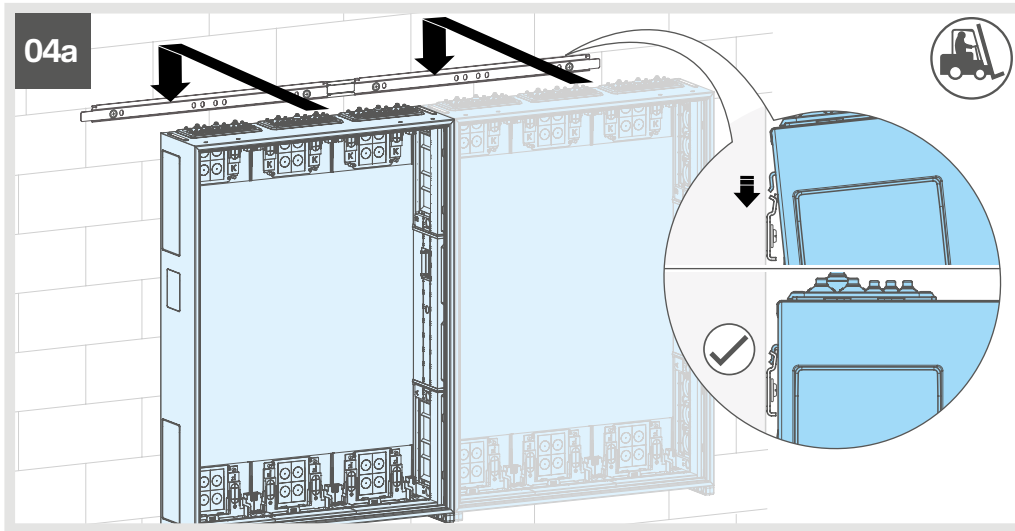
FZ966S



The second rail can then be secured using standard screws and wall plugs (see Fig. 02a and 03a).



The second cabinet, or both cabinets, can then be hung in place so that there is no gap between them (Fig. 04a).

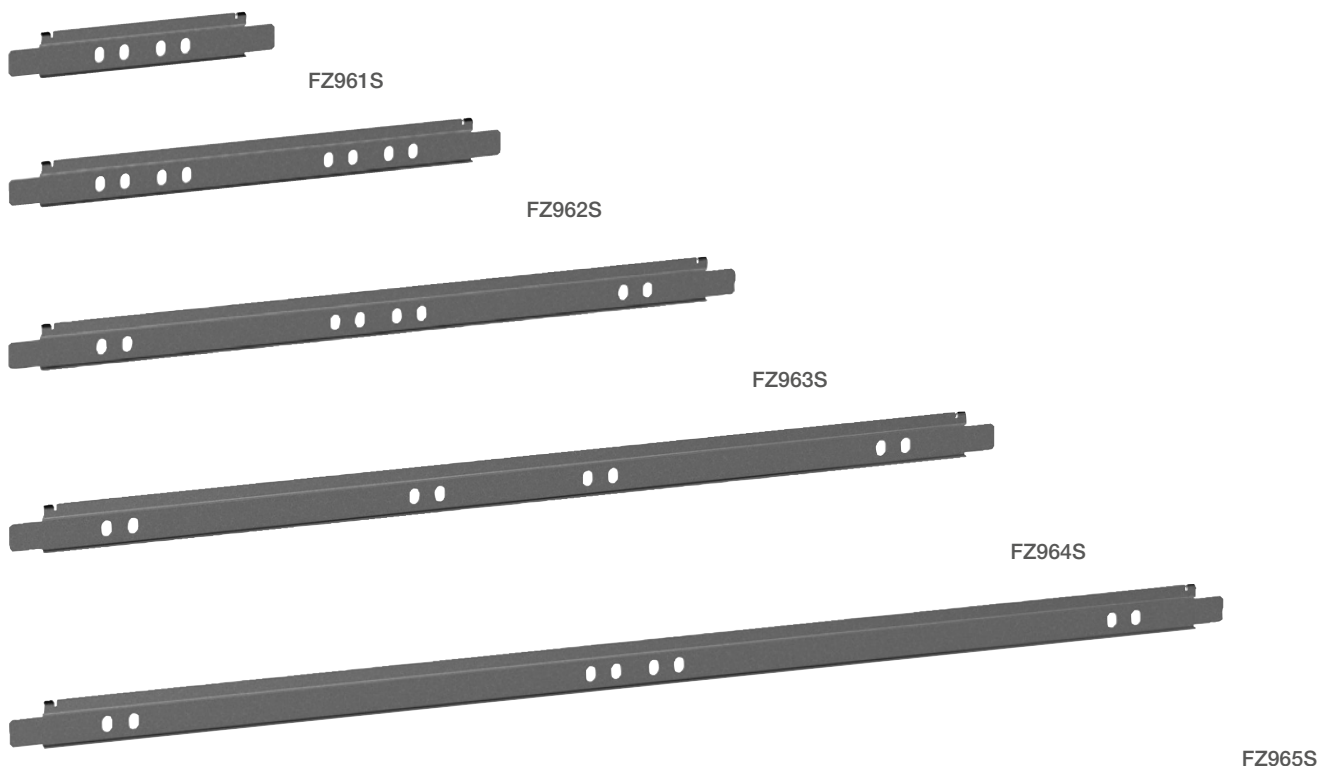


Note: The cabinet can be moved 24 mm to the left or right of the centre position along the cabinet mounting rail, right to the end until stopper.

**Cabinet mounting rail (as spare part)**

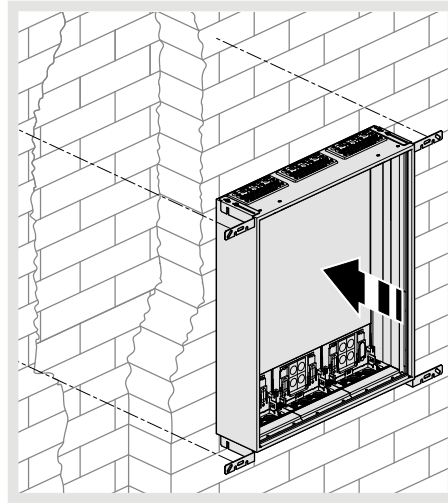
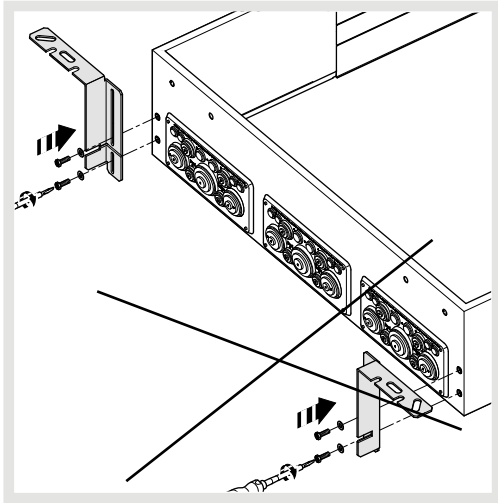
The five cabinet mounting rails are also available as spare part FZ96xS. The final digit "x" denotes the width of the rail. **FZ963S**, for example, corresponds to a 3-section cabinet FWB3... with a width B of 800 mm.

Width (mm)	300	550	800	1050	1300
Rail	FZ961S	FZ962S	FZ963S	FZ964S	FZ965S

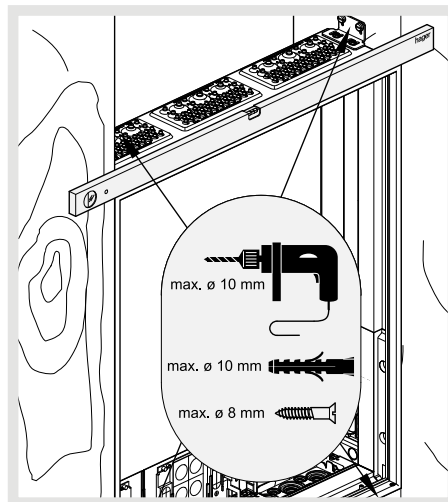
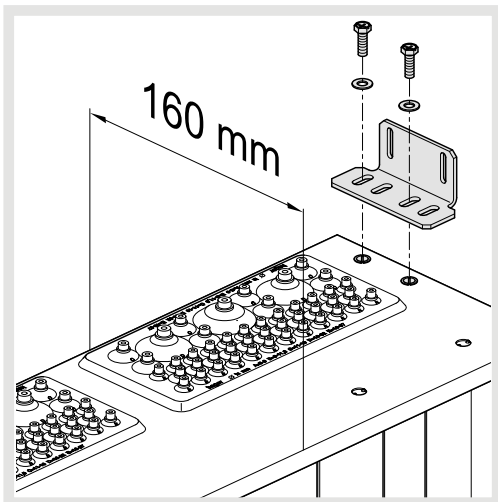


**Flush and partially recessed installation**

Wall cabinets FWB are compatible with wall-mounting accessories **FZ900** and **FZ900H**.



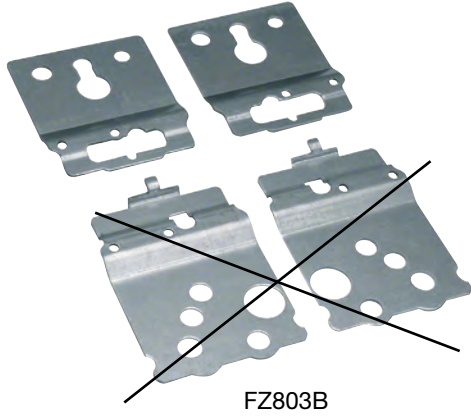
Installation of the FZ900 bracket set for flush and partially recessed installation



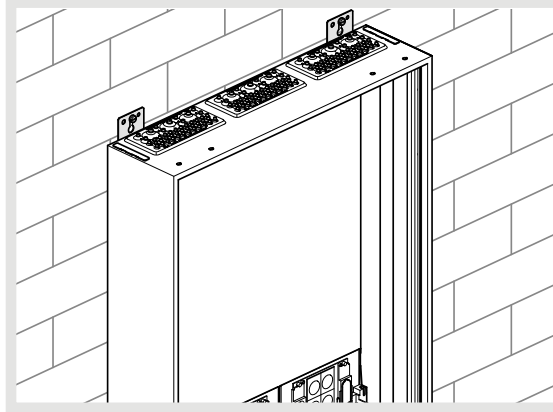
Installation of the FZ900H bracket set for flush and partially recessed installation

### External wall mounting

The **FZ803B** accessory can be used for also quickly and easily mounting FWB cabinets on the wall as they contain brackets that are fixed above and below the cabinet.



FZ803B



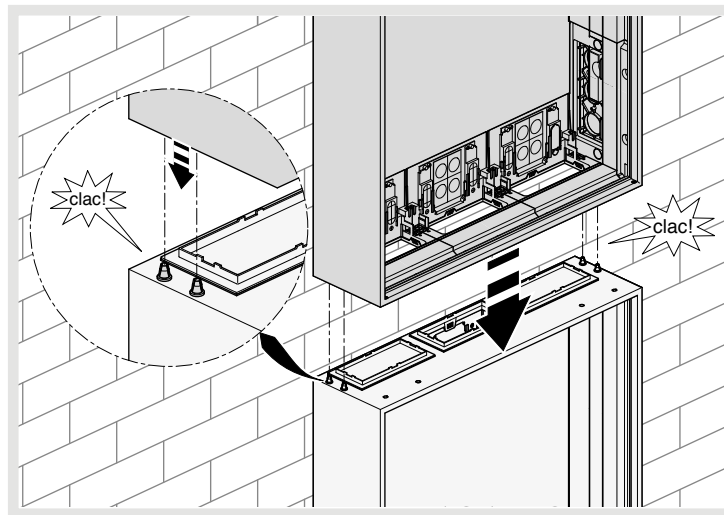
Note: FWB cabinets with the cabinet mounting rail suspension system are only compatible with the two upper brackets. The lower brackets are not compatible (see image top left) and are unnecessary, as the lower external mounting is already integrated.

### Cabinet – vertical cabinet connection

FWB distribution boards can be mounted above each other with the FZ44xB accessories set. The third digit in the reference stands for the panel width; **FZ443B** is suitable for connecting 3-panel cabinets (800 mm width) above each other.



FZ443B



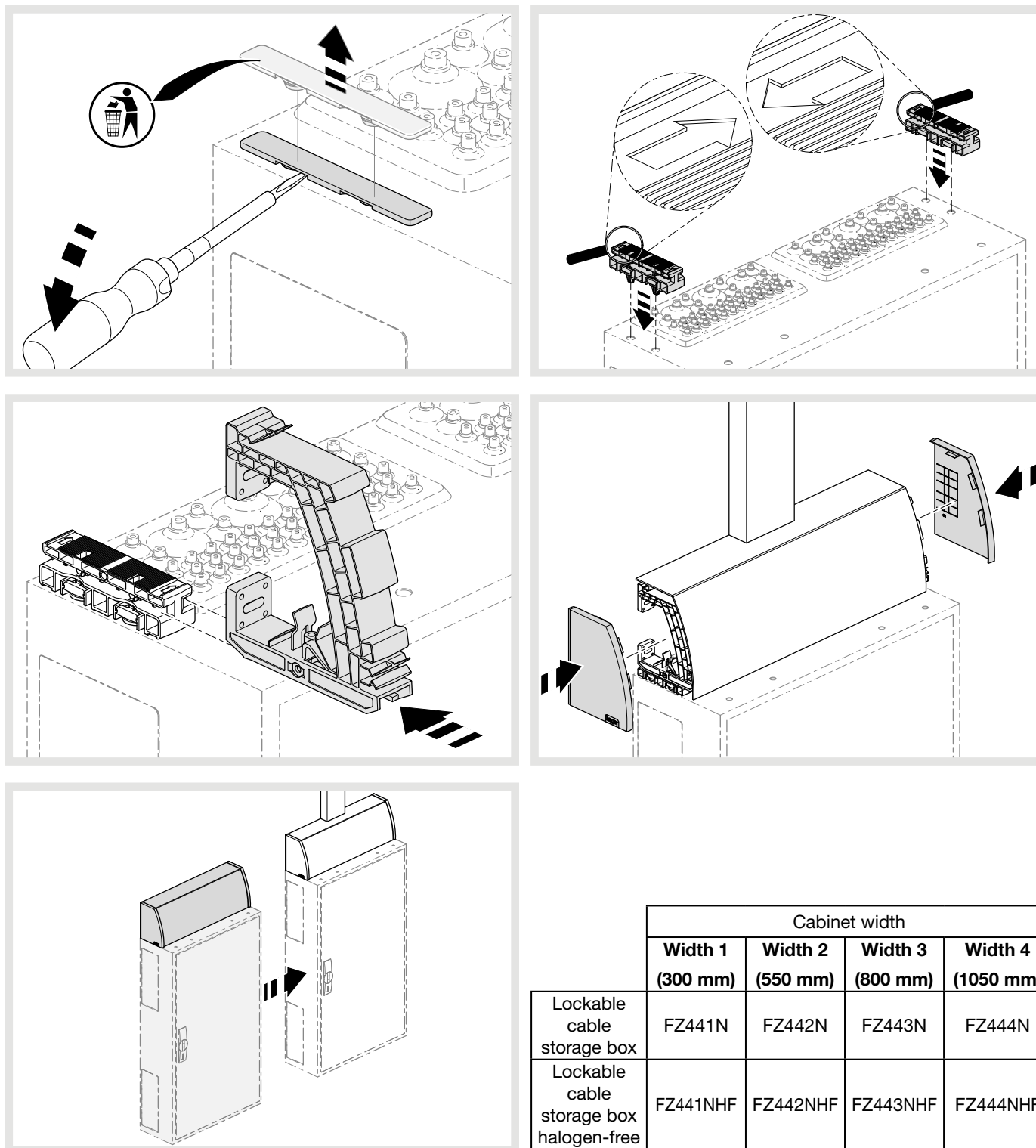
	Cabinet width			
	Width 1 (300 mm)	Width 2 (550 mm)	Width 3 (800 mm)	Width 4 (1050 mm)
Cabinet to cabinet connector for basic cabinet FWB	FZ441B	FZ442B	FZ443B	FZ444B

### Cable storage box

Wall distribution boards FWB can be expanded with the cable storage boxes **FZ441N** to **FZ444N** and **FZ441NHF** to **FZ444NHF**. Items with the code ending in NHF are halogen-free.

These boxes have a depth and height of 135 x 176 mm and can be easily locked in above the cabinet.

The third digit in the reference stands for the panel width; FZ442N is suitable for a 2-panel cabinet (550 mm width).



Installation of the FZ442N cable storage box

### 4.2.2 Coding

The order number coding for FWB distribution boards consists of three components:

- Cabinet type: **FWB...** (Basic fixation)
- Cabinet dimensions (height and width): **FWB32...**

Cabinet height	Cabinet width			
	300 mm	550 mm	750 mm	1050 mm
<b>500 mm</b>	31	32	33	34
<b>650 mm</b>	41	42	43	44
<b>800 mm</b>	51	52	53	54
<b>950 mm</b>	61	62	63	64
<b>1100 mm</b>	71	72	73	74
<b>1250 mm</b>	81	-	-	-

- Cabinet configuration: **FWB32GS**

The various cabinet configurations are summarised in the following table:

Reference ending	With internal system	Internal system	With terminals	Terminal type	With door	Door type	Door plate
Without	Yes	Distribution panel	Yes	Brass terminals	Yes	Plain	FZ598N
A	Yes	Distribution panel	No	(Empty)	Yes	Plain	FZ598N
CSDB	Yes	Distribution panel + main switch	Yes	PE QuickConnect	Yes	Plain	FZ598N
D1	No	(Empty)	No	(Empty)		(Empty)	(Empty)
GS	Yes	Distribution panel	Yes	N + PE QuickConnect	Yes	Transparent	FZ598N
K1	Yes	Distribution panel - multimedia panel	Yes	N + PE QuickConnect	Yes	Slotted	FZ598N
K3	Yes	Distribution panel - multimedia panel	Yes	N + PE QuickConnect	Yes	Multimedia slotted	FZ598N
K5	Yes	Distribution panel - multimedia panel	Yes	PE QuickConnect	Yes	Plain	FZ598N
M2	Yes	Distribution panel	Yes	PE QuickConnect	Yes	Plain	FZ598N
N	Yes	Distribution panel	No	(Prepared for DIN rail terminals)	Yes	Plain	FZ598N
N3	Yes	Distribution panel	No	(Prepared for DIN rail terminals)	Yes	Plain	FZ598N
P	Yes	Distribution panel	Yes	PE QuickConnect	Yes	Plain	FZ598N
P2	Yes	Distribution panel + empty panel	Yes	PE QuickConnect	Yes	Plain	FZ598N
S	Yes	Distribution panel	Yes	N + PE QuickConnect	Yes	Plain	FZ598N
T1S	Yes	Distribution panel	Yes	PE QuickConnect	No	(Empty)	(Empty)

### 4.2.3 Cabinet references overview

#### 4.2.3.1 FWB references

Size 3	Cabinet width			
	300 mm	550 mm	750 mm	1050 mm
Cabinet height 500 mm	FWB31	FWB32	-	-
	FWB31A	FWB32A	-	-
	FWB31D1	FWB32D1	FWB33D1	FWB34D1
	FWB31GS	FWB32GS	FWB33GS	-
	FWB31P	FWB32K1	FWB33P	FWB34P
	FWB31S	FWB32M2	FWB33S	FWB34S
	FWB31T1S	FWB32P	FWB33T1S	FWB34T1S
	-	FWB32S	-	-
	-	FWB32T1S	-	-

Size 4	Cabinet width			
	300 mm	550 mm	750 mm	1050 mm
Cabinet height 650 mm	FWB41	FWB42	FWB43	FWB44
	FWB41A	FWB42A	FWB43A	-
	-	FWB42CSDB	-	-
	FWB41D1	FWB42D1	FWB43D1	FWB44D1
	FWB41GS	FWB42GS	FWB43GS	-
	-	FWB42K1	-	-
	-	FWB42K3	-	-
	-	FWB42K5	-	-
	-	FWB42M2	-	-
	FWB41P	FWB42P	FWB43P	FWB44P
	-	FWB42P2	FWB43P2	-
	FWB41S	FWB42S	FWB43S	FWB44S
	FWB41T1S	FWB42T1S	FWB43T1S	FWB44T1S

Size 5	Cabinet width			
	300 mm	550 mm	750 mm	1050 mm
Cabinet height 800 mm	FWB51	FWB52	FWB53	FWB54
	FWB51A	FWB52A	FWB53A	-
	FWB51D1	FWB52D1	FWB53D1	FWB54D1
	FWB51GS	FWB52GS	FWB53GS	-
	-	FWB52K1	FWB53K1	-
	-	FWB52K3	-	-
	-	FWB52K5	FWB53K5	-
	-	FWB52M2	-	-
	-	FWB52N	FWB53N	-
	-	FWB52N3	FWB53N3	-
	FWB51P	FWB52P	FWB53P	FWB54P
	-	FWB52P2	-	-
	FWB51S	FWB52S	FWB53S	FWB54S
	FWB51T1S	FWB52T1S	FWB53T1S	FWB54T1S

Size 6	Cabinet width			
	300 mm	550 mm	750 mm	1050 mm
Cabinet height 950 mm	FWB61	FWB62	FWB63	FWB64
	FWB61A	FWB62A	FWB63A	-
	FWB61D1	FWB62D1	FWB63D1	FWB64D1
	FWB61GS	FWB62GS	FWB63GS	-
	-	FWB62K1	FWB63K1	-
	-	FWB62K3	-	-
	-	FWB62K5	FWB63K5	-
	-	FWB62M2	-	-
	-	FWB62N	FWB63N	FWB64N
	-	FWB62N3	FWB63N3	FWB64N3
	FWB61P	FWB62P	FWB63P	FWB64P
	FWB61S	FWB62S	FWB63S	FWB64S
	FWB61T1S	FWB62T1S	FWB63T1S	FWB64T1S

Size 7	Cabinet width			
	300 mm	550 mm	750 mm	1050 mm
Cabinet height 1100 mm	FWB71	FWB72	FWB73	FWB74
	FWB71A	FWB72A	FWB73A	FWB74A
	FWB71D1	FWB72D1	FWB73D1	FWB74D1
	FWB71GS	FWB72GS	FWB73GS	-
	-	FWB72K1	-	-
		FWB72K5		
	-	FWB72M2	-	-
	-	FWB72N	FWB73N	FWB74N
	-	FWB72N3	FWB73N3	FWB74N3
	FWB71S	FWB72S	FWB73S	FWB74S
	FWB71T1S	FWB72T1S	FWB73T1S	FWB74T1S

Size 8	Cabinet width			
	300 mm	550 mm	750 mm	1050 mm
Cabinet height 1250 mm	FWB81D1	-	-	-
	FWB81S	-	-	-

## 4.2.4 Cabinet details

### 4.2.4.1 FWBxx

Reference
FWB31
FWB32
FWB33
FWB34
FWB41
FWB42
FWB43
FWB44
FWB51
FWB52
FWB53
FWB54
FWB61
FWB62
FWB63
FWB64
FWB71
FWB72
FWB73
FWB74



Example: FWB33

### Protection class IP44, impact protection IK09

<p><b>Internal system:</b></p> <p><b>Distribution panel(s):</b></p> <ul style="list-style-type: none"> <li>- Cover 250 mm width with 12 module slot width. With 2 covers above each other for size 7</li> <li>- Distance between the DIN rails: 125 mm</li> </ul>
<ul style="list-style-type: none"> <li>- Sizes 3, 4: per panel, with brass terminals KM22A</li> <li>- Sizes 5, 6, 7: per panel, with brass terminals KM25A</li> </ul>
<p><b>Door:</b></p> <ul style="list-style-type: none"> <li>- <b>plain</b></li> <li>- Steel</li> <li>- <b>univers door closing</b></li> <li>- Right door with reinforcement bar for size 5 and higher</li> </ul>
<p><b>Included in scope of delivery:</b></p> <ul style="list-style-type: none"> <li>- DIN A4 – labelling strip with type label</li> <li>- DIN A4 – circuit table</li> <li>- FWB – installation instructions</li> </ul>



Example: KM22A



Example: KM25A

**4.2.4.2 FWBxxA**

Reference
FWB31A
FWB32A
FWB41A
FWB42A
FWB43A
FWB51A
FWB52A
FWB53A
FWB61A
FWB62A
FWB63A
FWB71A
FWB72A
FWB73A
FWB74A



Example: FWB42A

**Protection class IP44, impact protection IK09**

<p><b>Internal system:</b></p> <p><b>Distribution panel(s):</b></p> <ul style="list-style-type: none"> <li>- Covers 250 mm width with 12 module slot width. With 2 covers above each other for size 7</li> <li>- Distance between the DIN rails: 125 mm</li> </ul>
<p>Without QuickConnect terminals and without QuickConnect carrier</p>
<p><b>Door:</b></p> <ul style="list-style-type: none"> <li>- <b>Plain</b></li> <li>- Steel</li> <li>- <b>univers door closing</b></li> <li>- Right door with reinforcement bar for size 5 and higher</li> </ul>
<p><b>Included in scope of delivery:</b></p> <ul style="list-style-type: none"> <li>- DIN A4 – labelling strip with type label</li> <li>- DIN A4 – circuit table</li> <li>- FWB – installation instructions</li> </ul>


**4.2.4.3 FWBxxCSDB**

<b>Reference</b>
FWB42CSDB



FWB42CSDB

**Protection class IP30, impact protection IK09**

<p><b>Internal system:</b></p> <p><b>With internal system for 2x19 + 4x12 PLE + 1x main switch (Disjoncteur de Branchement)</b></p> <p>Distance between the DIN rails: 125 mm top 150 mm bottom</p> <p>QuickConnect connect configuration</p> <p><b>2 x KN22E</b></p> 
<p><b>Door:</b></p> <ul style="list-style-type: none"> <li>- <b>Plain</b></li> <li>- Steel</li> <li>- <b>univers door closing</b></li> <li>- Right door with reinforcement bar for size 5 and higher</li> <li>- Without blue seal and without door poles (IP30)</li> </ul>
<p><b>Included in scope of delivery:</b></p> <ul style="list-style-type: none"> <li>- DIN A4 labelling strip with type label</li> <li>- DIN A4 circuit table</li> <li>- FWB installation instructions</li> </ul>

**4.2.4.4 FWBxxD1**

Reference
FWB31D1
FWB32D1
FWB33D1
FWB34D1
FWB41D1
FWB42D1
FWB43D1
FWB44D1
FWB51D1
FWB52D1
FWB53D1
FWB54D1
FWB61D1
FWB62D1
FWB63D1
FWB64D1
FWB71D1
FWB72D1
FWB73D1
FWB74D1
FWB81D1



Example: FWB41D1

**Protection class max. IP44 with door, impact protection max. IK09 with door**

<b>Without internal system</b>
<b>Without door</b>
<b>Included in scope of delivery:</b> <ul style="list-style-type: none"> <li>- DIN A4 – labelling strip with type label</li> <li>- DIN A4 – circuit table</li> <li>- FWB – installation instructions</li> </ul>

### 4.2.4.5 FWBxxGS

Reference
FWB31GS
FWB32GS
FWB33GS
FWB41GS
FWB42GS
FWB43GS
FWB51GS
FWB52GS
FWB53GS
FWB61GS
FWB62GS
FWB63GS
FWB71GS
FWB72GS
FWB73GS



Example: FWB62GS

### Protection class IP44, impact protection IK07

<b>Internal system:</b>			
<b>Distribution panel(s):</b>			
- Covers 250 mm width with 12 module slot width. With 2 covers above each other for size 7			
- Distance between the DIN rails: 125 mm			
QuickConnect connect configuration (at the top of each distribution panel)			
Height 3:	2 x KN10N		+ KN18E
Height 4, 5, 6 and 7:	2 x KN10N		+ KN22E
<b>Door:</b>			
- Plain			
- Steel frame			
- <b>Transparent</b> plastic plate			
- <b>univers door closing</b>			
- Right door with reinforcement bar for size 5 and higher			
<b>Included in scope of delivery:</b>			
- DIN A4 – labelling strip with type label			
- FWB – installation instructions			
- QuickConnect installation instructions			





**4.2.4.6 FWBxxK1**

Reference
FWB32K1
FWB42K1
FWB52K1
FWB53K1
FWB62K1
FWB63K1
FWB72K1



Example: FWB42K1

**Protection class IP31, impact protection IK07**

<b>Internal system:</b>	
<b>Distribution panel:</b>	<b>Multimedia panel:</b>
<ul style="list-style-type: none"> <li>- Covers 250 mm width with 12 module slot width.</li> <li>- Distance between the DIN rails: 125 mm</li> </ul>	<ul style="list-style-type: none"> <li>- Pre-installed plastic mounting plates</li> <li>- Number of mounting plates per size: See UMx1UK</li> </ul>
Pre-installed vertical partition between distribution and multimedia panel	
QuickConnect connect configuration (at the top of each distribution panel)	
Height 3:	2 x KN10N  + KN18E 
Height 4, 5, 6 and 7:	2 x KN10N  + KN22E 
<b>Door:</b>	
<ul style="list-style-type: none"> <li>- <b>Slotted</b></li> <li>- Steel</li> <li>- <b>univers door closing</b></li> <li>- Right door with reinforcement bar for size 5 and higher</li> </ul>	
<b>Included in scope of delivery:</b>	
<ul style="list-style-type: none"> <li>- 10 long and 10 short screws for the plastic mounting plate</li> <li>- DIN A4 – labelling strip with type label</li> <li>- DIN A4 – circuit table</li> <li>- FWB – installation instructions</li> <li>- QuickConnect installation instructions</li> <li>- Document pocket FZ794</li> </ul>	



### 4.2.4.7 FWBxxK3

Reference
FWB42K3
FWB52K3
FWB62K3



Example: FWB52K3

#### Protection class IP31, impact protection IK07

<b>Internal system:</b>	
<b>Distribution panel:</b>	<b>Multimedia panel:</b>
<ul style="list-style-type: none"> <li>- Covers 250 mm width with 12 module slot width.</li> <li>- Distance between the DIN rails: 125 mm</li> </ul>	<ul style="list-style-type: none"> <li>- Pre-installed plastic mounting plates</li> <li>- Number of mounting plates per size: See UMx1UK</li> </ul>
Pre-installed vertical partition between distribution and multimedia panel	
QuickConnect connect configuration (at the top of each distribution panel)	
Height 4, 5, 6:	2 x KN10N  + KN22E 
<b>Door:</b>	
<ul style="list-style-type: none"> <li>- <b>Multimedia slotted</b></li> <li>- Steel</li> <li>- <b>univers door closing</b></li> <li>- Right door with reinforcement bar for size 5 and higher</li> </ul>	
<b>Included in scope of delivery:</b>	
<ul style="list-style-type: none"> <li>- 10 long and 10 short screws for the plastic mounting plate</li> <li>- DIN A4 – labelling strip with type label</li> <li>- DIN A4 – circuit table</li> <li>- FWB – installation instructions</li> <li>- QuickConnect installation instructions</li> <li>- Document pocket FZ794</li> </ul>	


**4.2.4.8 FWBxxK5**

Reference
FWB42K5
FWB52K5
FWB53K5
FWB62K5
FWB63K5
FWB72K5



Example: FWB53K5

**Protection class IP44, impact protection IK09**

<b>Internal system;</b>	
<b>Distribution panel:</b>	
- Covers 250 mm width with 12 module slot width. With 2 covers above each other for size 7	<b>Multimedia panel:</b>
- Distance between the DIN rails: 125 mm	- Pre-installed plastic mounting plates
	- Number of mounting plates per size: See UMx1UK
Pre-installed vertical partition between distribution and multimedia panel	
QuickConnect connect configuration (at the top of each distribution panel)	
Height 4, 5, 6 and 7:	+ KN22E 
<b>Door:</b>	
- <b>Multimedia slotted</b>	
- Steel	
- <b>univers door closing</b>	
- Right door with reinforcement bar for size 5 and higher	
<b>Included in scope of delivery:</b>	
- 10 long and 10 short screws for the plastic mounting plate	
- DIN A4 – labelling strip with type label	
- DIN A4 – circuit table	
- FWB – installation instructions	
- QuickConnect installation instructions	
- Document pocket FZ794	

**4.2.4.9 FWBxxM2**

Reference
FWB32M2
FWB42M2
FWB52M2
FWB62M2
FWB72M2



Example: FWB52M2

**Protection class IP44, impact protection IK09**

<b>Internal system:</b>	
<b>Distribution panel:</b>	
<ul style="list-style-type: none"> <li>- Covers 500 mm width, <b>with 26 module slot width</b>. With 2 covers above each other, respectively 3 by size 7</li> <li>- Continuous DIN rails (500 mm width)</li> <li>- Distance between the DIN rails: 125 mm</li> </ul>	
QuickConnect configuration (top)	
Height 3:	2 x KN22E
Height 4:	KN26E  + KN22E
Height 5:	KN26E  + KN22E
Height 6:	3 x KN22E  + KN99E
Height 7:	3 x KN22E  + KN99E
<b>Door:</b>	
<ul style="list-style-type: none"> <li>- <b>Plain</b></li> <li>- Steel</li> <li>- <b>univers door closing</b></li> <li>- Right door with reinforcement bar for size 5 and higher</li> </ul>	
<b>Included in scope of delivery:</b>	
<ul style="list-style-type: none"> <li>- DIN A4 – labelling strip with type label</li> <li>- DIN A4 – circuit table</li> <li>- FWB – installation instructions</li> <li>- QuickConnect installation instructions</li> </ul>	

**4.2.4.10 FWBxxN**

Reference
FWB52N
FWB53N
FWB62N
FWB63N
FWB64N
FWB72N
FWB73N
FWB74N



Example: FWB62N

**Protection class IP44, impact protection IK09**

<p><b>Internal system:</b></p> <p>2 top rows:</p> <ul style="list-style-type: none"> <li>- For DIN rail terminals</li> <li>- Plain covers, 15 mm depth</li> <li>- <b>Insulated DIN rails, 15 mm depth</b></li> <li>- <b>Distance between the DIN rails: 150 mm</b></li> </ul>
<p><b>Distribution panel(s):</b></p> <ul style="list-style-type: none"> <li>- Covers with 12 module slot width. Cover configuration, see page 39</li> <li>- <b>Distance between the DIN rails: 150 mm</b></li> </ul>
<p>Without QuickConnect terminals and without QuickConnect carrier</p>
<p><b>Door:</b></p> <ul style="list-style-type: none"> <li>- <b>Plain</b></li> <li>- Steel</li> <li>- <b>univers door closing</b></li> <li>- Right door with reinforcement bar for size 5 and higher</li> </ul>
<p><b>Included in scope of delivery:</b></p> <ul style="list-style-type: none"> <li>- DIN A4 – labelling strip with type label</li> <li>- DIN A4 – circuit table</li> <li>- FWB – installation instructions</li> </ul>

**4.2.4.11 FWBxxN3**

Identical to FWBxxN, except for size 6 (different covers)

Reference
FWB52N3
FWB53N3
FWB62N3
FWB63N3
FWB64N3
FWB72N3
FWB73N3
FWB74N3

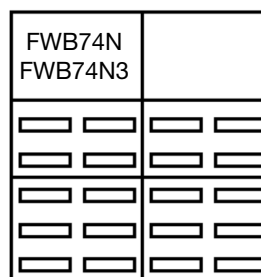
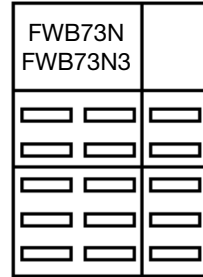
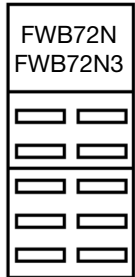
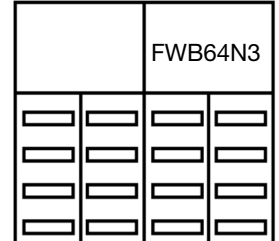
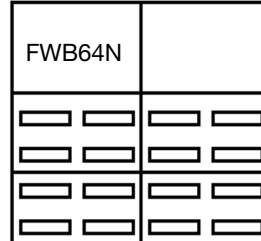
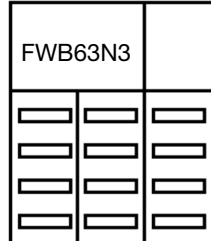
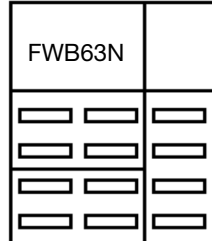
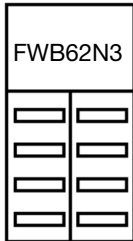
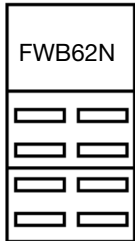
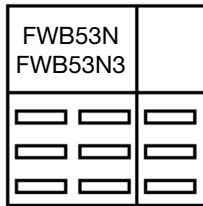
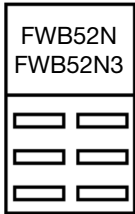


Example: FWB62N3

**Protection class IP44, impact protection IK09**

<p><b>Internal system:</b></p> <p>2 top rows:</p> <ul style="list-style-type: none"> <li>- For DIN rail terminals</li> <li>- Plain covers, 15 mm depth</li> <li>- <b>Insulated DIN rails, 15 mm depth</b></li> <li>- <b>Distance between the DIN rails: 150 mm</b></li> </ul>
<p><b>Distribution panel(s):</b></p> <ul style="list-style-type: none"> <li>- Covers with 12 module slot width. Cover configuration, see page 39</li> <li>- <b>Distance between the DIN rails: 150 mm</b></li> <li>- <b>1-panel covers for size 6</b></li> </ul>
<p>Without QuickConnect terminals and without QuickConnect carrier</p>
<p><b>Door:</b></p> <ul style="list-style-type: none"> <li>- <b>Plain</b></li> <li>- Steel</li> <li>- <b>univers door closing</b></li> <li>- Right door with reinforcement bar for size 5 and higher</li> </ul>
<p><b>Included in scope of delivery:</b></p> <ul style="list-style-type: none"> <li>- DIN A4 – labelling strip with type label</li> <li>- DIN A4 – circuit table</li> <li>- FWB – installation instructions</li> </ul>

**Cover configurations for FWBxxN and FWBxxN3**









### 4.2.4.12 FWBxxP

Reference
FWB31P
FWB32P
FWB33P
FWB34P
FWB41P
FWB42P
FWB43P
FWB44P
FWB51P
FWB52P
FWB53P
FWB54P
FWB61P
FWB62P
FWB63P
FWB64P
FWB71P
FWB72P
FWB73P
FWB74P



Example: FWB42P

#### Protection class IP44, impact protection IK09

<b>Internal system:</b>	
<b>Distribution panel(s):</b>	
<ul style="list-style-type: none"> <li>- Covers 250 mm width with 12 module slot width</li> <li>- Distance between the DIN rails: 125 mm</li> </ul>	
QuickConnect configuration (at the top of each distribution panel)	
Height 3:	1 x KN26E 
Height 4:	2 x KN18E 
Height 5:	2 x KN22E 
Height 6, 7:	1 x KN22E  1 x KN26E  + KN99E 
<b>Door:</b>	
<ul style="list-style-type: none"> <li>- <b>Plain</b></li> <li>- Steel</li> <li>- <b>univers door closing</b></li> <li>- Right door with reinforcement bar for size 5 and higher</li> </ul>	
<b>Included in scope of delivery:</b>	
<ul style="list-style-type: none"> <li>- DIN A4 – labelling strip with type label</li> <li>- DIN A4 – circuit table</li> <li>- FWB – installation instructions</li> <li>- QuickConnect installation instructions</li> </ul>	


**4.2.4.13 FWBxxP2**

Reference
FWB42P2
FWB52P2

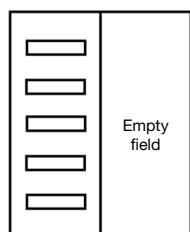


Example: FWB52P2

**Protection class IP44, impact protection IK09**

<b>Internal system:</b>	
<b>Distribution panel(s):</b>	
<ul style="list-style-type: none"> <li>- 1 panel is always installed on the left, the other panels are empty</li> <li>- Covers 250 mm width with 12 module slot width</li> <li>- Distance between the DIN rails: 125 mm</li> </ul>	
Pre-installed vertical separation	
QuickConnect connect configuration (at the top of each distribution panel)	
Height 4, 5:	1 x KN22E 
<b>Door:</b>	
<ul style="list-style-type: none"> <li>- <b>Plain</b></li> <li>- Steel</li> <li>- <b>univers door closing</b></li> <li>- Right door with reinforcement bar for size 5 and higher</li> </ul>	
<b>Included in scope of delivery:</b>	
<ul style="list-style-type: none"> <li>- DIN A4 labelling strip with type label</li> <li>- DIN A4 circuit table</li> <li>- FWB installation instructions</li> <li>- QuickConnect installation instructions</li> <li>- Document pocket FZ794</li> </ul>	

panel configuration for FWBxxP2:



FWBx2P2

### 4.2.4.14 FWBxxS

Reference
FWB31S
FWB32S
FWB33S
FWB34S
FWB41S
FWB42S
FWB43S
FWB44S
FWB51S
FWB52S
FWB53S
FWB54S
FWB61S
FWB62S
FWB63S
FWB64S
FWB71S
FWB72S
FWB73S
FWB74S
FWB81S



Example: FWB81S

#### Protection class IP44, impact protection IK09

<b>Internal system:</b>			
<b>Distribution panel(s):</b>			
- Covers 250 mm width with 12 module slot width. With 2 covers above each other by size 7 and 8			
- Distance between the DIN rails: 125 mm			
QuickConnect connect configuration (at the top of each distribution panel)			
Height 3:	2 x KN10N		+ KN18E
Height 4, 5, 6 and 7:	2 x KN10N		+ KN22E
Height 8:			1 x KN26E
<b>Door:</b>			
- <b>Plain</b>			
- Steel			
- <b>univers door closing</b>			
- Right door with reinforcement bar for size 5 and higher			
<b>Included in scope of delivery:</b>			
- DIN A4 labelling strip with type label			
- DIN A4 circuit table			
- FWB installation instructions			
- QuickConnect installation instructions			







**4.2.4.15 FWBxxT1S**

Referenz
FWB31T1S
FWB32T1S
FWB33T1S
FWB34T1S
FWB41T1S
FWB42T1S
FWB43T1S
FWB44T1S
FWB51T1S
FWB52T1S
FWB53T1S
FWB54T1S
FWB61T1S
FWB62T1S
FWB63T1S
FWB64T1S
FWB71T1S
FWB72T1S
FWB73T1S
FWB74T1S



Example: FWB73T1S

**Protection class IP30 (max. IP30 with door), impact protection IK05 (max. IK09 with door)**

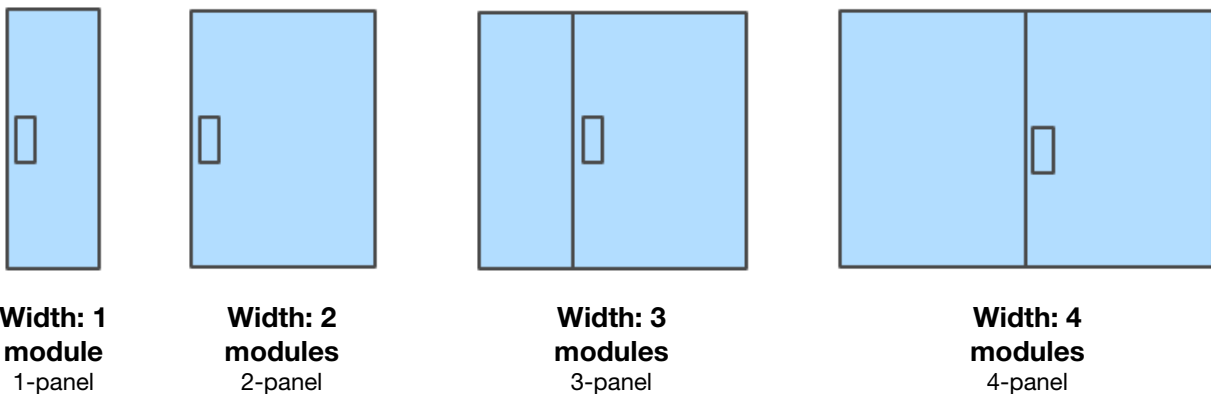
<b>Internal system:</b>	
<b>Distribution panel(s):</b>	
-	Covers 250 mm width with 12 module slot width. With 2 covers above each other for size 7
-	Distance between the DIN rails: 125 mm
QuickConnect connect configuration (at the top of each distribution panel)	
Height 3:	1 x KN26E 
Height 4:	2 x KN18E 
Height 5:	2 x KN22E 
Height 6,7:	1 x KN22E  1 x KN26E  + KN99E 
<b>Without door, without blue seal</b>	
<b>Included in scope of delivery:</b>	
-	DIN A4 labelling strip with type label
-	DIN A4 circuit table
-	FWB installation instructions
-	QuickConnect installation instructions

## 5 Doors

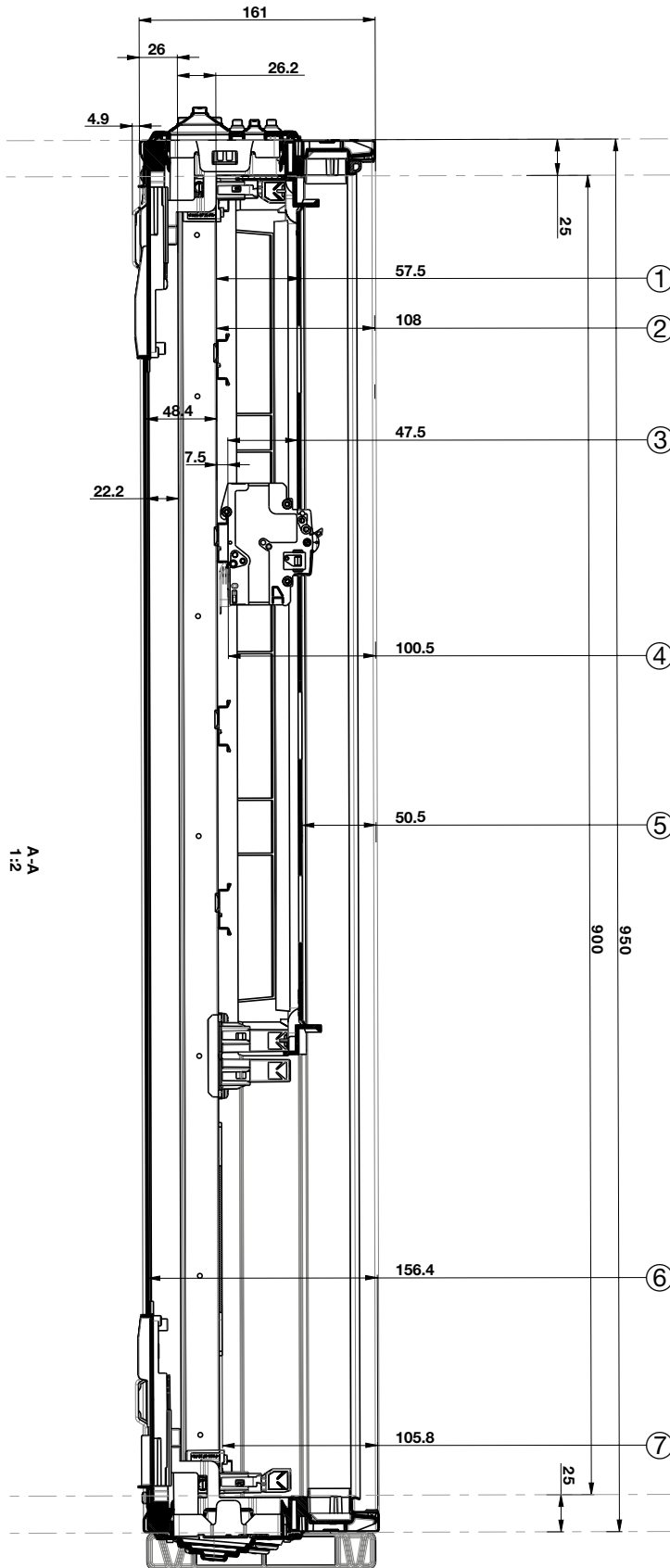
### 5.1 Properties

- Front-flush, can be hinged on the right or left
- Removable without tools, door stop removable without tools
- Interior, adjustable hinges
- Can be supplied with metal doors (plain door), see-through doors (transparent door) or multimedia plastic doors (multimedia door)
- Two doors at a cabinet width of 800 and 1050 mm. Right doors (with lock and poles) maximum 2-panel in width. Left doors (without lock and poles) maximum 2-panel in width.
- Door opening angle: 110°
- Protection class and impact protection: see chapter 3, Technical data
- Standard colour: RAL 9010
- Door closing latch can be sealed as standard and retrofitted with a key or special lock
- FWB-, doors are supplied with **FZ598N** door plate as standard (univers door closing)
- 3-point bar locking with locking lever with centre T-handle and push rods at the top / bottom
- 2-panel right and left doors have a reinforcement bar in the centre of the rear by size 5 (750 mm) and higher

FWB cabinet with doors (left / right) are equipped according to the following door combinations:



- Door distance to internal elements: see image next page



- ① Distance Vertical mounting rail – Cover exterior wall
- ② Distance Vertical mounting rail – Door exterior wall
- ③ Distance DIN rail – Cover interior wall
- ④ Distance DIN rail – Door exterior wall
- ⑤ Distance Cover exterior wall – Door exterior wall
- ⑥ Distance Plastic board back panel – Door exterior wall
- ⑦ Distance Mounting plate – Door exterior wall

Note for door mounting: distances from door to internal system components

## 5.2 Door coding

The **order number coding for the door** has the following structure:

- The univers accessory code: **FZ...**
- Code for single doors: **FZ0...** (or **FZ1...** for transparent doors)
- A consecutive number for enclosure dimensions (height + width): **FZ006N**
- Labelling for the door type: **FZ006N**

Reference ending	Door type	Door plate
<b>N</b>	Plain or transparent door IP44	FZ598N
<b>NM</b>	Slotted multimedia door IP3X	FZ598N
<b>NM2</b>	Plain multimedia door IP44	FZ598N
<b>NV, NV1</b>	Slotted door IP3X	FZ598N or FZ598*

\*Door plate FZ598 for right doors with NV ending, e.g. FZ006NV



Example: FZ006NM2 plain multimedia door

### 5.3 Door references: Single door with univers door plate (FZ598N)

#### Plain door, max. IP44, univers door plate

Height	Width 1 (300 mm)		Width 2 (550 mm)		Width 3 (800 mm)		Width 4 (1050 mm)	
	Left door	Right door	Left door	Right door	Left door	Right door	Left door	Right door
3 (500 mm)	-	FZ001N	-	FZ002N	FZ003N	FZ002N	FZ004N	FZ002N
4 (650 mm)	-	FZ005N	-	FZ006N	FZ007N	FZ006N	FZ008N	FZ006N
5 (800 mm)	-	FZ009N	-	FZ010N	FZ011N	FZ010N	FZ012N	FZ010N
6 (950 mm)	-	FZ013N	-	FZ014N	FZ015N	FZ014N	FZ016N	FZ014N
7 (1100 mm)	-	FZ021N	-	FZ022N	FZ023N	FZ022N	FZ024N	FZ022N
8 (1250 mm)	-	FZ026N	-	-	-	-	-	-

#### Door, max. IP3X, univers door plate

Height	Width 1 (300 mm)		Width 2 (550 mm)		Width 3 (800 mm)		Width 4 (1050 mm)	
	Left door	Right door	Left door	Right door	Left door	Right door	Left door	Right door
3 (500 mm)	-	FZ001NV1	-	FZ002NV1	FZ003NV	FZ002NV1	-	FZ002NV1
4 (650 mm)	-	FZ005NV1	-	FZ006NV1	FZ007NV	FZ006NV1	-	FZ006NV1
5 (800 mm)	-	FZ009NV1	-	FZ010NV1	FZ011NV	FZ010NV1	-	FZ010NV1
6 (950 mm)	-	FZ013NV1	-	FZ014NV1	FZ015NV	FZ014NV1	-	FZ014NV1
7 (1100 mm)	-	FZ021NV1	-	FZ022NV1	FZ023NV	FZ022NV1	-	FZ022NV1
8 (1250 mm)	-	FZ026NV1	-	-	-	-	-	-

#### Transparent door, max. IP44, univers door plate

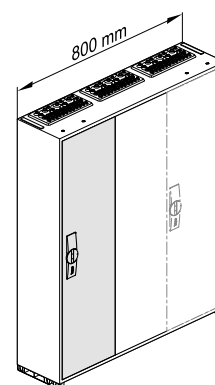
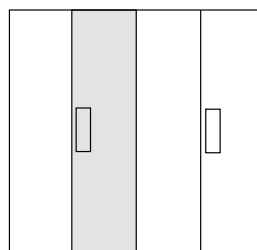
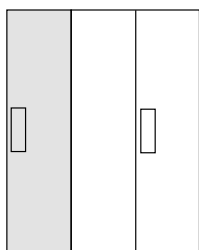
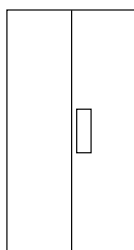
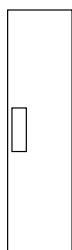
Height	Width 1 (300 mm)		Width 2 (550 mm)		Width 3 (800 mm)		Width 4 (1050 mm)	
	Left door	Right door	Left door	Right door	Left door	Right door	Left door	Right door
3 (500 mm)	-	-	-	-	-	-	FZ150N	-
4 (650 mm)	-	-	-	FZ104N	-	FZ104N	-	FZ104N
5 (800 mm)	-	FZ142N	-	FZ106N	FZ143N	FZ106N	-	FZ106N
6 (950 mm)	-	-	-	FZ110N	-	FZ110N	-	FZ110N
7 (1100 mm)	-	FZ148N	-	FZ102N	FZ149N	FZ102N	FZ152N	FZ102N
8 (1250 mm)	-	-	-	-	-	-	-	-

#### Multimedia door, max. IP3X, univers door plate

Height	Width 1 (300 mm)		Width 2 (550 mm)		Width 3 (800 mm)		Width 4 (1050 mm)	
	Left door	Right door	Left door	Right door	Left door	Right door	Left door	Right door
3 (500 mm)	-	-	-	FZ002NM	-	FZ002NM	-	FZ002NM
4 (650 mm)	-	FZ005NM	-	FZ006NM	FZ007NM	FZ006NM	-	FZ006NM
5 (800 mm)	-	FZ009NM	-	FZ010NM	FZ011NM	FZ010NM	-	FZ010NM
6 (950 mm)	-	FZ013NM	-	FZ014NM	-	FZ014NM	-	FZ014NM
7 (1100 mm)	-	FZ021NM	-	FZ022NM	-	FZ022NM	-	FZ022NM
8 (1250 mm)	-	FZ026NM	-	-	-	-	-	-

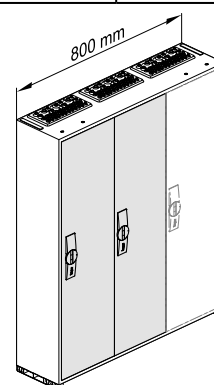
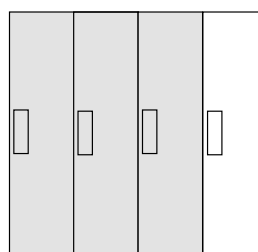
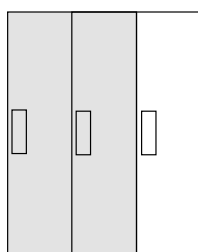
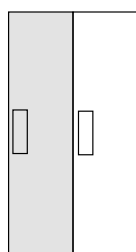
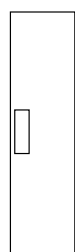
**Special plain door (left / right combination) for narrow passage, max. IP44, univers door plate**

Height	Width 1 (300 mm)		Width 2 (550 mm)		Width 3 (800 mm)		Width 4 (1050 mm)	
	Left door	Right door	Left door	Right door	Left door	Right door	Left door	Right door
3 (500 mm)	-	FZ001N	FZ003N	FZ001N	-	-	-	-
4 (650 mm)	-	FZ005N	FZ007N	FZ005N	-	-	-	-
5 (800 mm)	-	FZ009N	FZ011N	FZ009N	-	-	-	-
6 (950 mm)	-	FZ013N	FZ015N	FZ013N	FZ015N	FZ013N + FZ191N	FZ015N (2x)	FZ013N + FZ191N
7 (1100 mm)	-	FZ021N	FZ023N	FZ021N	FZ023N	FZ021N + FZ192N	FZ023N (2x)	FZ021N + FZ192N
8 (1250 mm)	-	FZ026N	-	-	-	-	-	-



**Special plain door (right combination only) for narrow passage, max. IP44, univers door plate**

Height	Width 1 (300 mm)		Width 2 (550 mm)		Width 3 (800 mm)		Width 4 (1050 mm)	
	Left door	Right door	Left door	Right door	Left door	Right door	Left door	Right door
3 (500 mm)	-	FZ001N	-	FZ001N	-	-	-	-
4 (650 mm)	-	FZ005N	-	FZ005N	-	-	-	-
5 (800 mm)	-	FZ009N	-	FZ009N	-	-	-	-
6 (950 mm)	-	FZ013N	-	FZ013N + FZ191N	-	FZ013N + FZ191N (2 x)	-	FZ013N + FZ191N (3 x)
7 (1100 mm)	-	FZ021N	-	FZ021N + FZ192N	-	FZ021N + FZ192N (2 x)	-	FZ021N + FZ192N (3 x)
8 (1250 mm)	-	FZ026N	-	-	-	-	-	-



**Example:** To retrofit cabinet FWB53K5 (height 5 and width 3) with transparent doors, the door references FZ143N and FZ106N have to be ordered according to the table.

**Transparent door, max. IP44, univers door plate**

Height	Width 1 (300 mm)		Width 2 (550 mm)		Width 3 (800 mm)		Width 4 (1050 mm)	
	Left door	Right door	Left door	Right door	Left door	Right door	Left door	Right door
3 (500 mm)	-	FZ105N	-	FZ107N	FZ140N	FZ107N	FZ150N	FZ107N
4 (650 mm)	-	FZ108N	-	FZ104N	FZ141N	FZ104N	FZ151N	FZ104N
5 (800 mm)	-	FZ142N	-	FZ106N	FZ143N	FZ106N	FZ144N	FZ106N
6 (950 mm)	-	FZ145N	-	FZ110N	FZ146N	FZ110N	FZ147N	FZ110N
7 (1100 mm)	-	FZ148N	-	FZ102N	FZ149N	FZ102N	FZ152N	FZ102N
8 (1250 mm)	-	FZ153N	-	-	-	-	-	-

## 5.4 Door references: Single door with 90SL door plate (FZ598)

Right doors of univers FW systems (flush distribution boards) with door plate 90SL (**FZ598**) are also compatible with the FWB cabinet. However, the protection class of the cabinet is reduced from IP44 to IP43 or less when installing these doors. For the sake of completeness, these doors are listed below in this manual.

The **order number coding for right doors univers FW** comprises:

- The univers accessory code: **FZ...**
- Code for single doors: **FZ0...**
- A consecutive number for enclosure dimensions (height + width): **FZ010NV**
- Labelling for the door type: **FZ010NV**

Reference ending	Door type	Door plate
<b>FM</b>	Slotted multimedia door IP3X	FZ598
<b>FM2</b>	Plain multimedia door IP43	FZ598
<b>NV</b>	Slotted door IP3X	FZ598



Example: FZ010NV slotted door with 90SL door plate

**Slotted door, max. IP3X, 90SL door plate**

Height	Width 1 (300 mm)		Width 2 (550 mm)		Width 3 (800 mm)		Width 4 (1050 mm)	
	Left door	Right door	Left door	Right door	Left door	Right door	Left door	Right door
3 (500 mm)	-	-	FZ003NV	-	-	-	-	-
4 (650 mm)	-	-	FZ007NV	FZ006NV	-	-	-	-
5 (800 mm)	-	-	FZ011NV	FZ010NV	-	-	-	-
6 (950 mm)	-	-	FZ015NV	FZ014NV	-	-	-	-
7 (1100 mm)	-	-	-	FZ022NV	-	-	-	-
8 (1250 mm)	-	-	-	-	-	-	-	-

**Slotted multimedia door, max. IP3X, 90SL door plate \***

Height	Width 1 (300 mm)		Width 2 (550 mm)		Width 3 (800 mm)		Width 4 (1050 mm)	
	Left door	Right door	Left door	Right door	Left door	Right door	Left door	Right door
3 (500 mm)	-	-	-	-	-	-	-	-
4 (650 mm)	-	-	-	FZ006FM	-	FZ006FM	-	FZ006FM
5 (800 mm)	-	-	-	FZ010FM	-	FZ010FM	-	FZ010FM
6 (950 mm)	-	-	-	-	-	-	-	-
7 (1100 mm)	-	FZ021FM	-	-	-	-	-	-
8 (1250 mm)	-	-	-	-	-	-	-	-

\* for other door sizes, see table NM doors page 49

**Plain multimedia door, max. IP43, 90SL door plate**

Height	Width 1 (300 mm)		Width 2 (550 mm)		Width 3 (800 mm)		Width 4 (1050 mm)	
	Left door	Right door	Left door	Right door	Left door	Right door	Left door	Right door
3 (500 mm)	-	-	-	FZ002FM2	-	FZ002FM2	-	FZ002FM2
4 (650 mm)	-	-	-	FZ006FM2	-	FZ006FM2	-	FZ006FM2
5 (800 mm)	-	-	-	FZ010FM2	-	FZ010FM2	-	FZ010FM2
6 (950 mm)	-	-	-	-	-	-	-	-
7 (1100 mm)	-	-	-	FZ022FM2	-	FZ022FM2	-	FZ022FM2
8 (1250 mm)	-	-	-	-	-	-	-	-

## 5.5 Flush-mounting frame

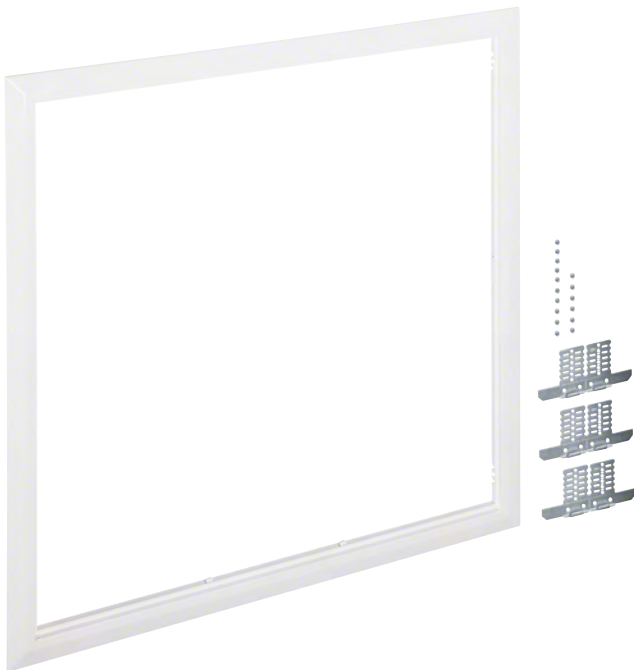
### 5.5.1 Properties

As described above, FWB cabinets can be installed flush and their appearance improved with a flush-mounting frame. Flush-mounting frames can make up for plaster unevenness between 10 and 58 mm (see image below).

The frames have a depth of 13 mm (protrusion from the wall) and can be ordered with reference numbers FZxxB.

The **order number coding for the flush-mounting frame** comprises:

- The univers accessory code: **FZ...**
- The enclosure dimensions (height): **FZ42B**
- The enclosure dimensions (width): **FZ42B**
- The frame labelling: **FZ42B**



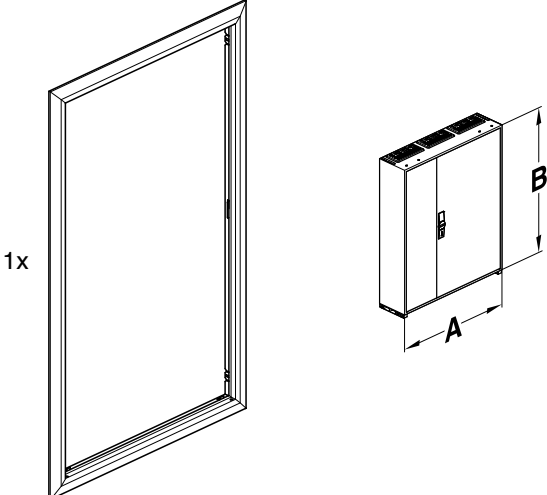
Example: FZ13B frame without door for FWB53...

### 5.5.2 Flush-mounting frame references overview

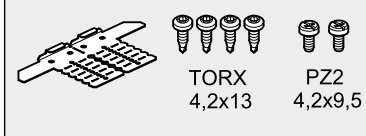
Cabinet height	Cabinet width			
	1 (300 mm)	2 (550 mm)	3 (750 mm)	4 (1050 mm)
5 (800 mm)	FZ11B	FZ12B	FZ13B	FZ14B
6 (950 mm)	FZ21B	FZ22B	FZ23B	FZ24B
7 (1100 mm)	FZ31B	FZ32B	FZ33B	FZ34B
8 (1250 mm)	FZ41B	-	-	-

### 5.5.3 Frame installation

Frames for FWB cabinets are supplied with mounting brackets, self-tapping TORX screws and PZ2 screws. The number of parts supplied depends on the height and width.

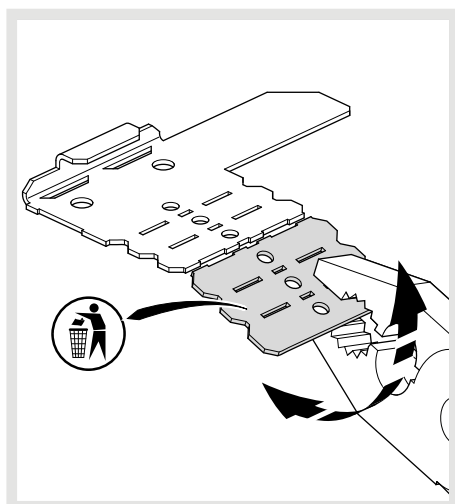
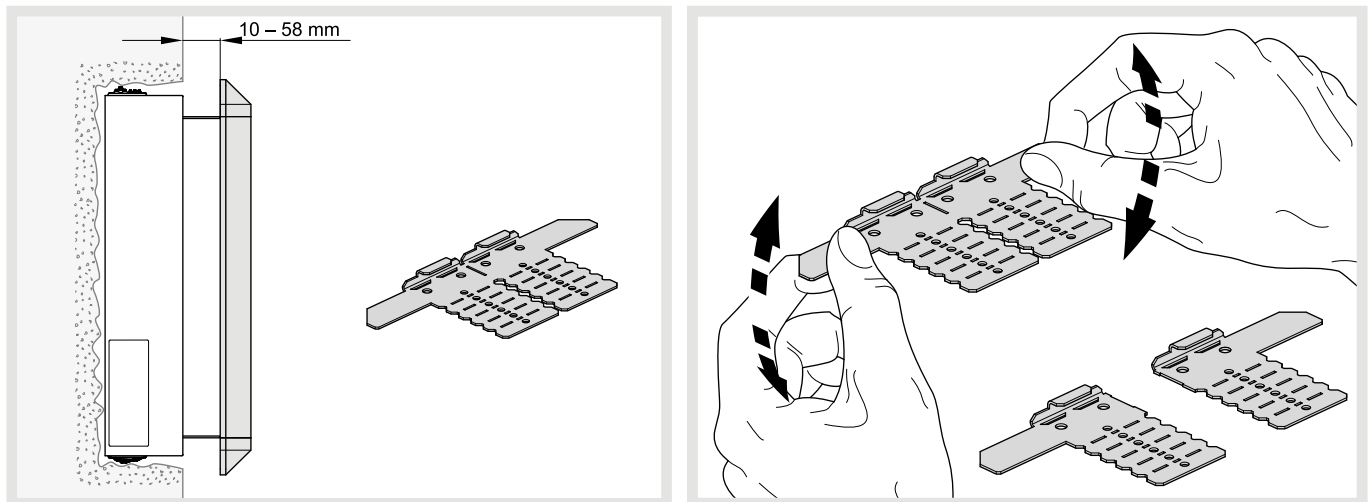


		B [mm]:			
		800	950	1100	1250
A [mm]:	300	2x	2x	3x	3x
	550	2x	2x	3x	
	800	2x	2x	3x	
	1050	3x	3x	4x	



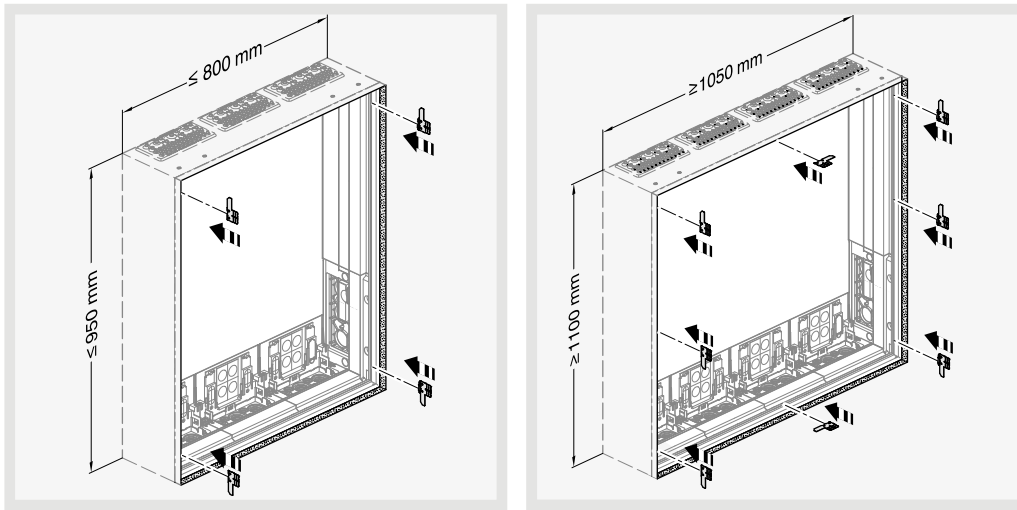
TORX 4,2x13      PZ2 4,2x9,5

The mounting brackets first have to be separated and cut to the correct depth.

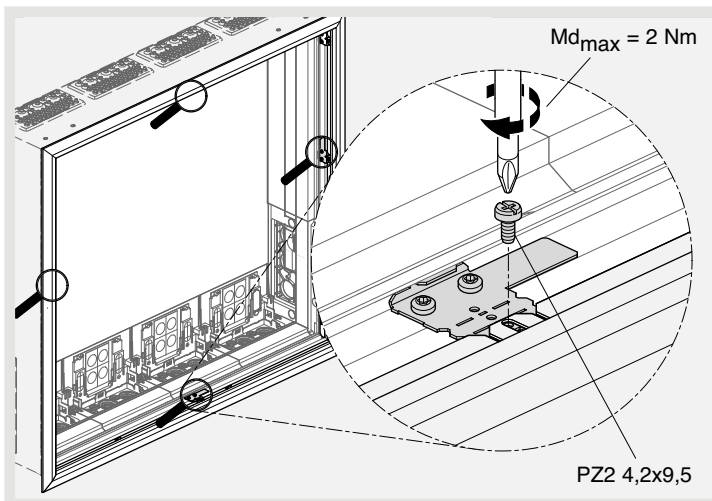


These brackets then have to be fixed to the cabinet enclosure with self-tapping screws. Cabinets with a height of up to 950 mm and a width of up to 800 mm require a total of 4 brackets on the sides.

Larger cabinets require additional fixing in the centre. To do this, the IP44 seal at the top has to be removed.



Finally, the brackets have to be fixed together with the frame using the PZ2 screws.



## 5.6 Door Lock Accessories

### 5.6.1 Standard door locking mechanism as a spare part

The doors of FWB cabinets are fitted as standard with the **FZ598N** door plate and are closed using a flip-handle with a plastic latch. This door plate is part of the current Univers IP44 product range and is available with various accessories.

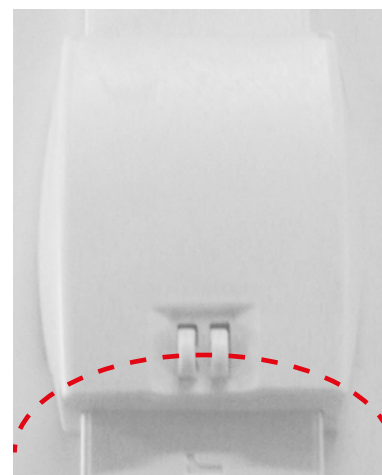
The FZ598N can be sealed directly using a sealing wire (see centre of illustration below) or with an additional cover **FZ226** (see bottom right of illustration).



Door plate FZ598N













Example: Fitting a sealing wire to the FZ598N



Example: Fitting the sealing cap FZ226 (sealing wire installation option shown in red)

### 5.6.2 Door locks for retrofitting

A wide range of special locks can be fitted to standard door plates. The table below shows a selection of locks; others are available on request.

Special lock	Lock type	Ref. no.
With cylinder E405		FZ452N
With cylinder E455		FZ453N
With cylinder E012		FZ455N
With cylinder EK333/1333		FZ458N
With cylinder E1242		FZ597N
Double-bit 3 mm		FZ449N
Triangular lock 7 mm		FZ450N
Square lock 7 mm		FZ451N
Sealable cover		FZ226
Cylinder E1242 with sealable cover		FZ824N



Example: FZ597N



FZ824N installed

### 5.6.3 T-handles and lever handles

Special lock	Lock type	Ref. no.
T-handle		FZ530N
T-handle with cylinder EK333/1333		FZ531N
Lever handle		FZ532N
Lever handle with cylinder EK333/1333		FZ533N








Example: FZ531N

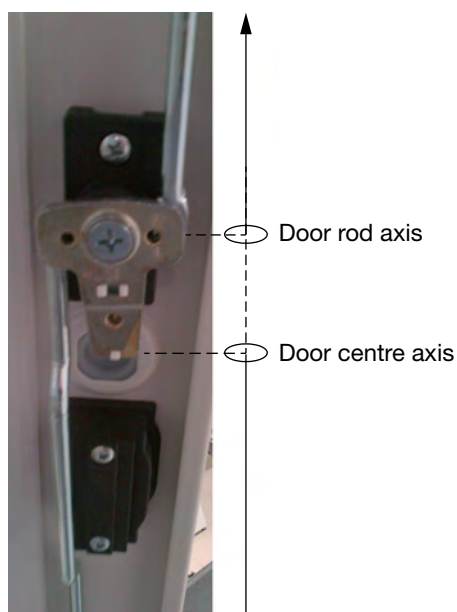


FZ533N installed

### 5.6.4 Swivel lever handles

Univers swivel lever handles can also be fitted to the FWB. To do this, the standard symmetrical door rods must be replaced with asymmetrical ones (see illustration and table below).

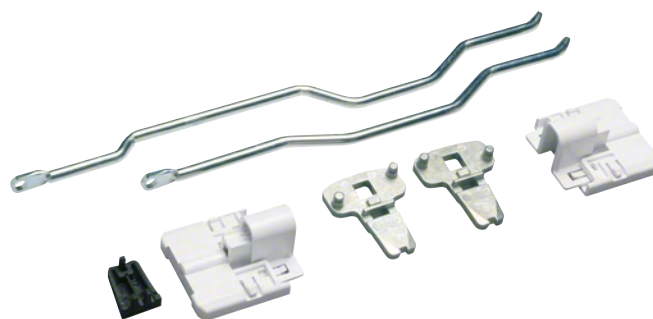
Swing lever handle	Lock type	Ref. no.
With cylinder E1242		FZ508N
With cylinder E455		FZ518N
Without cylinder, non-sealable		FZ534N
Without cylinder, sealable		FZ535N
With Senate lock		FZ546N




Example: FZ535N

IP54 door bars FZ83xN must be fitted with a swing-lever handle

Cabinet height	needed asymmetrical door handle set
500 mm	FZ833N
650 mm	FZ834N
800 mm	FZ835N
950 mm	FZ836N
1100 mm	FZ837N
1250 mm	FZ838N



Example: FZ835N

 It is not possible to install asymmetrical door handles on FZxxB frame profiles. For this reason, the combination of a swivel lever handle and flush-mounted installation with frame profiles is not possible with FWB (see also [section 5.5 Frame installation](#)).

## 5.7 Other door accessories

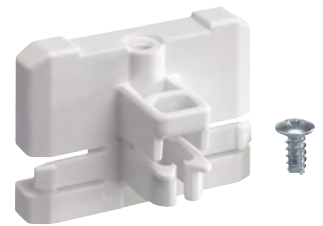
Door hinges and door rod holders can be ordered under the following part numbers:



**FZ746S** Set of hinges for left-hand door



**FZ745S** Set of hinges for right-hand door

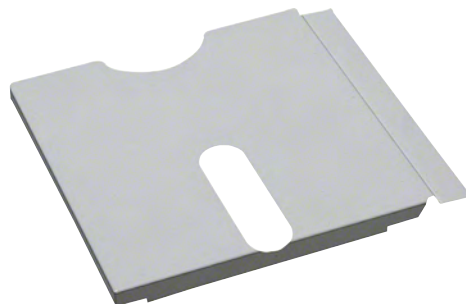


**FZ745SH** Door rod holder

Pockets for technical documents can also be fitted to doors:



**FZ794** Document holder, transparent and self-adhesive



**FZ707** Document holder, rigid, screw-mounted (only on doors with a minimum width of 500 mm and a minimum height of 800 mm)

Scratches on the door can be touched up using the following touch-up pen (this also applies to all other painted surfaces of the cabinet):

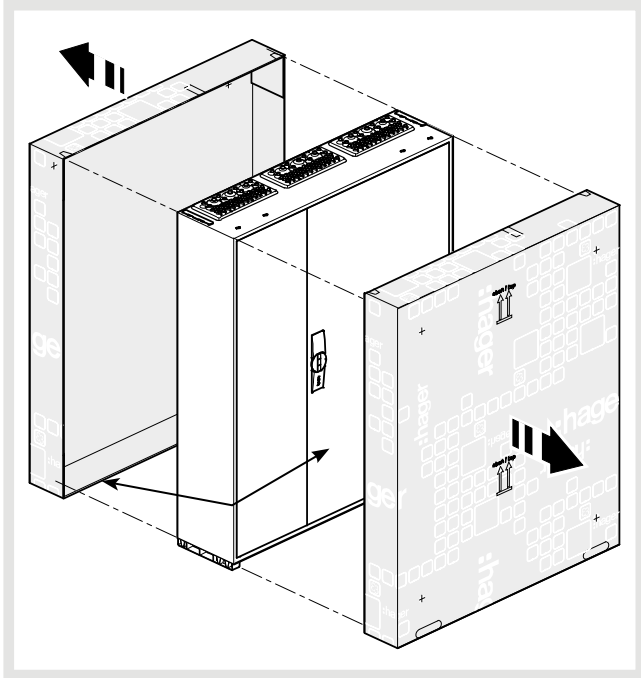


**FZ791N** Touch-up pen RAL9010

## 6 Enclosure installation

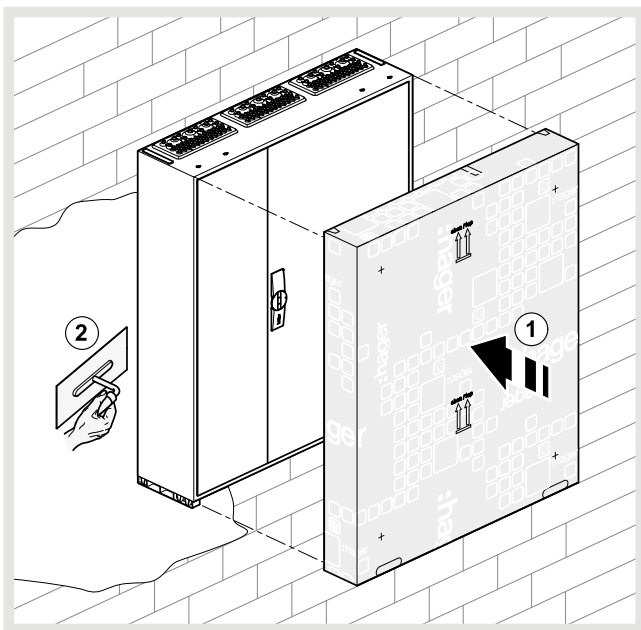
### 6.1 Packaging

The FWB distribution board is fully protected by the packaging, like in a shoe box.



FWB distribution board packaging

This half shell can also be used for FWB to protect the installed cabinet during plastering work.



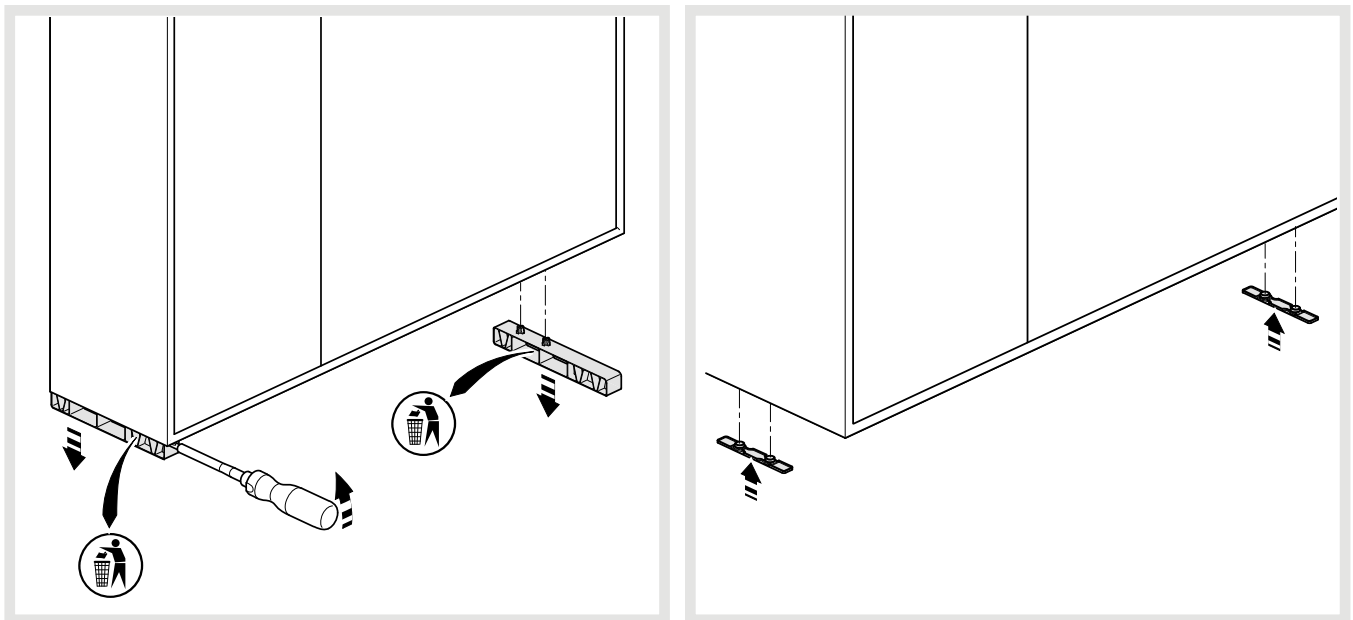
## 6.2 Cabinet feet

FWB cabinets are supplied with two long plastic parts that are inserted beneath the cabinet, the so-called “cabinet feet” as standard. These parts ensure that the cabinet stands securely in a vertical position at the construction site prior to installing them on the wall and protect the bottom cable entry flanges and bottom against scratches and deformation.



Figure: Cabinet feet left / right

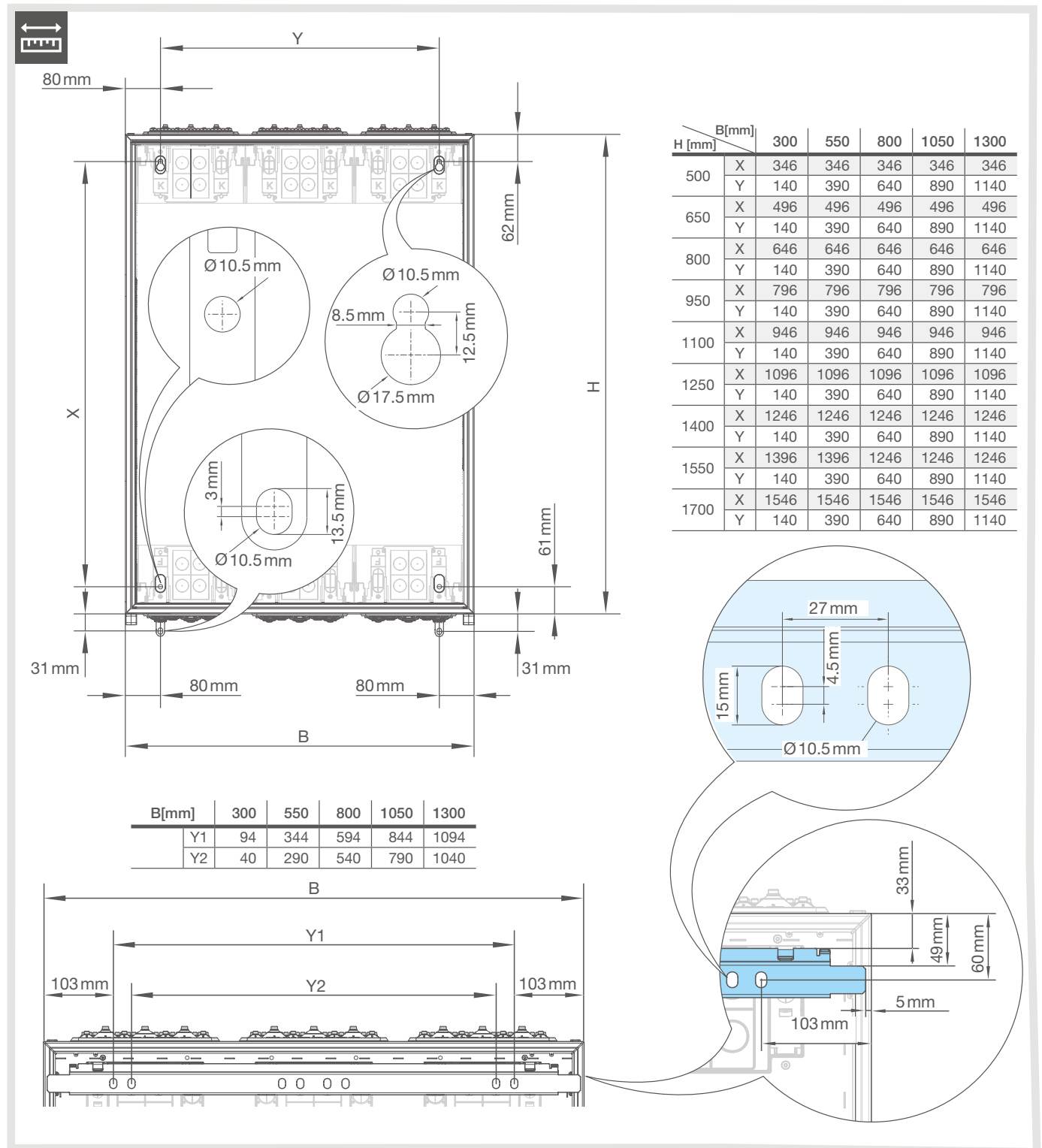
Although the standards do not specify it as compulsory, these plastic parts can be removed and disposed of once the cabinet has been installed on the wall for aesthetic reasons, either manually or with a flathead screw driver. Two sealing parts are supplied with all cabinets for sealing the resulting holes.



### 6.3 Wall installation

#### 6.3.1 Wall installation measurements / dimensions

The wall installation measurements for the FWB for installation on the wall are specified in installation instructions 6LE001243, which are supplied with the cabinet:

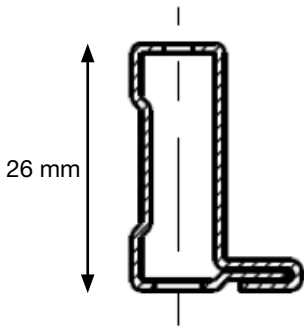


## 7 univers Z internal system

### 7.1 Coding

The FWB cabinet has been prepared for the installation of univers Z panels.

The univers Z panels use mounting rails made from profiled and galvanised steel plates with an L profile and a depth of 26 mm.



Cross section of a univers Z mounting rail

The device mounting rails (DIN rails) are made from galvanised steel plates and ordered above each other every 125 mm and 150 mm respectively.

The grid dimension of the internal panels is 250 mm in width and 150 mm in height, as in the univers system. The panel dimensions result from the combination of 2 digits:

Height (mm)	Digit 1
450	3
600	4
750	5
900	6
1050	7
1200	8

Width (mm)	Digit 2
250	1
500	2
750	3
1000	4



Example: The height of the UW51V panel is 750 mm and its width is 250 mm

Panels are locked with the univers Z fixation towers **UZ03A1** as a standard. (See chapter 7.3.2, Fixation towers, page 73)

To determine FWB cabinet dimensions (height, width), 2 x 25 mm have to be added to the grid dimensions of panels (the side panel thickness and/or top and bottom part thickness of the cabinet enclosure measure 25 mm). For example, a FWB52 cabinet can comprise two UW51V panels (grid dimensions 750 x 500); its dimensions are 800 x 550 mm.

## 7.2 Supply of fully assembled panels

### 7.2.1 UWxxVx distribution panels

Distribution panels consist of:

- Mounting rails
- DIN rails
- QuickConnect terminals and carrier
- Fixation towers
- Covers

From size 7 (1100 mm), two covers are used above each other. The distance between the module rows is 125 mm (slots) for all covers.



Example: UW81V



Example: UW81VA

Panels	Height	Width 1 (250 mm)	QC equipment
Distribution panel with QC Green-yellow / blue (PEN)	3 (450 mm)	UW31V	KN18E + 2x KN10N
	4 (600 mm)	UW41V	KN22E + 2x KN10N
	5 (750 mm)	UW51V	KN22E + 2x KN10N
	6 (900 mm)	UW61V	KN22E + 2x KN10N
	7 (1050 mm)	UW71V	KN22E + 2x KN10N
	8 (1200 mm)	UW81V	KN22E + 2x KN10N

Panels	Height	Width 1 (250 mm)	QC equipment
Distribution panel with QC Green-yellow (PE)	3 (450 mm)	UW31VA	KN18E
	4 (600 mm)	UW41VA	KN22E
	5 (750 mm)	UW51VA	KN22E
	6 (900 mm)	UW61VA	KN22E
	7 (1050 mm)	UW71VA	KN22E
	8 (1200 mm)	UW81VA	KN26E

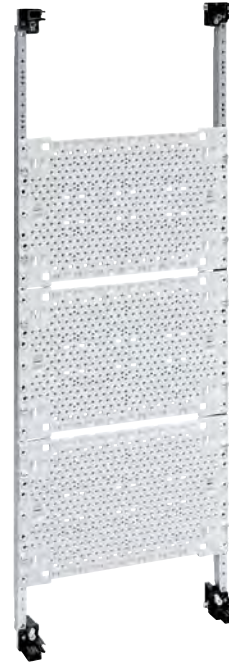
### 7.2.2 Multimedia panels

FWB distribution boards are prepared for multimedia extensions. Multimedia panels with perforated steel mounting plates or new plastic mounting plates can be selected.

When ordering individual parts or when completing an empty cabinet, multimedia panels are also available as market reference. The UNxxTN panels are equipped with perforated steel mounting plate and the new UMx1UK panels with plastic mounting plates.



Example: UN51TN with perforated steel mounting plate



UM51UK with plastic mounting plates

#### UMx1UK

Following panels with plastic mounting plates are available, particularly for multimedia applications. These panels with the 14 mm, narrower univers FW mounting rails are compatible with the univers Z system; they comprise the same fixation towers and have a width of 250 mm.

The plastic mounting plates can also be installed behind the mounting rails. These multimedia panels can be clipped into the FWB cabinets. The following UMx1UK references are available:

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

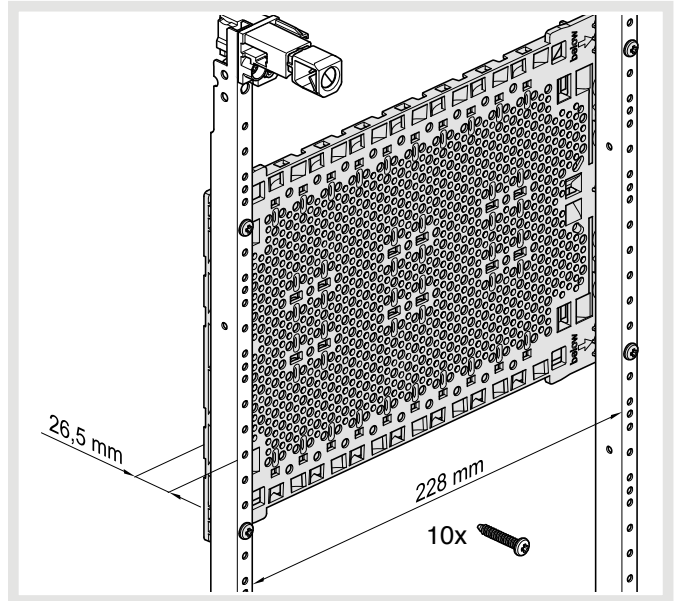
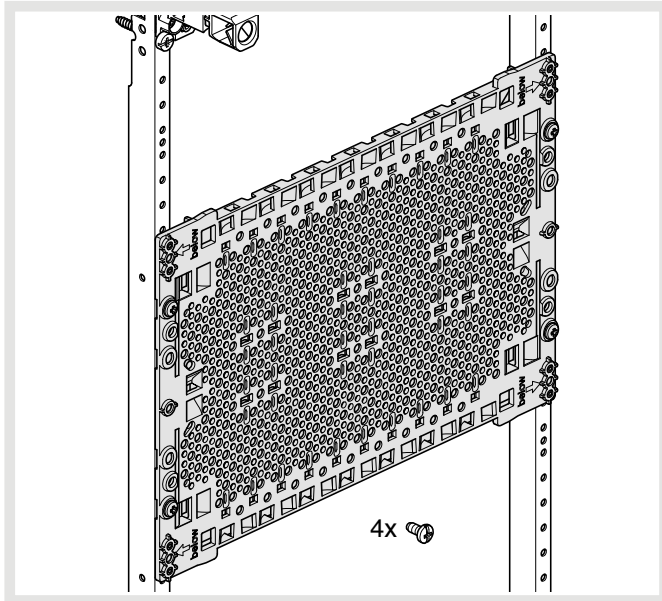
The 9.5 mm long screws are used for installing multimedia devices on the panels.

The 25 mm long screws are used for fixing the plastic mounting plates behind the mounting rails and for fixing devices to the plastic mounting plates.

These enclosed screws are also available as accessory with the product code **UM00Z0** (10 x short und 10 x long).



Screw kit UM00Z0 for Multimedia plastic plates

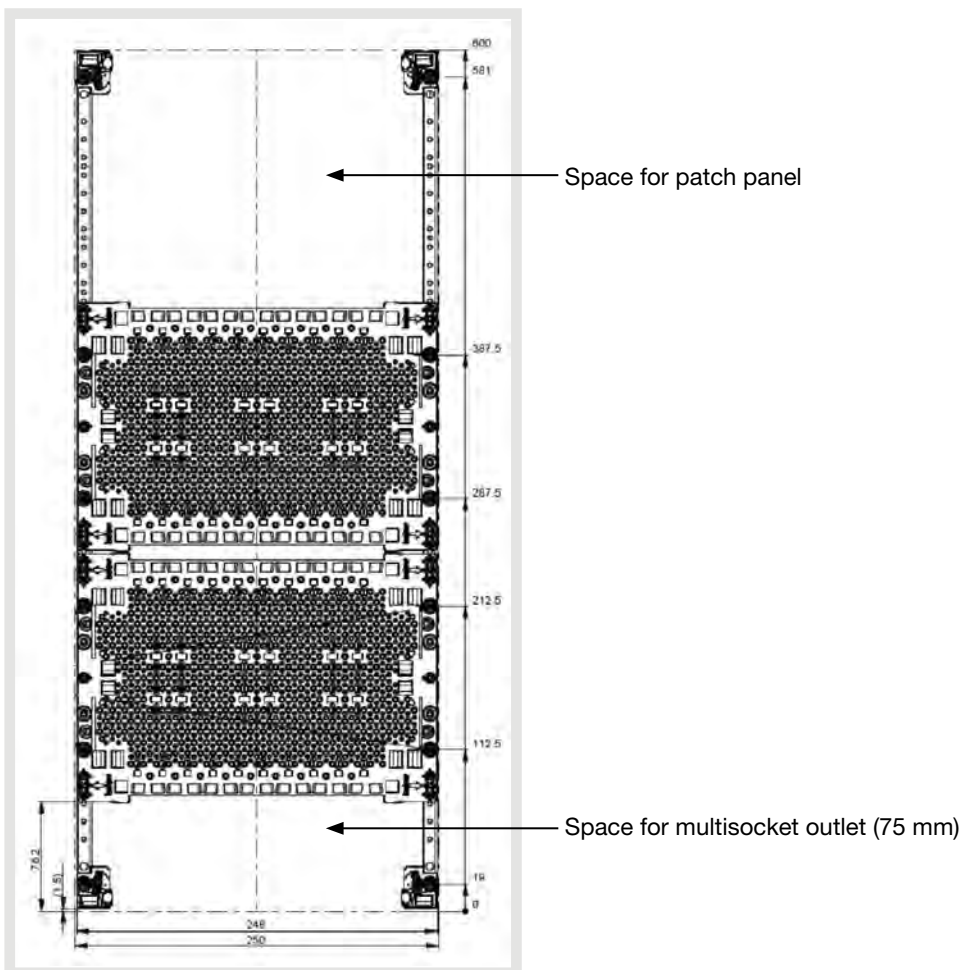


Installation of the plastic mounting plate in UMx1UK

Left: Front of the mounting rails

Right: Rear of the mounting rails

In every UMx1UK panel, the bottom plate is positioned 75 mm from the mounting rail end so that the Volta multisocket outlet can be installed directly. A patch panel kit can be installed in the top area. [See chapter 7.4.](#)



UMx1UK panel: 75mm distance between the mounting rail edge and bottom plate

When screwing multimedia devices into the plastic mounting plates with screws, the specified maximum tightening torque must not be exceeded (see “ [UM00M0 plastic mounting plate](#)” section, page 76).

**UNxxTN**

The multimedia panels with perforated steel mounting plate UNxxTN remain available. These panels with the 14 mm, narrower univers FW mounting rails are compatible with the univers Z system; they comprise the same fixation towers and have a width of 250 mm or 500 mm. They comprise one single panel that cannot be moved to the bottom. For all of these references, 20 metal screws (short and long) are supplied for fixing multimedia devices.



Example: UN42TN (500 mm width)

Panels	Height	Width 1 (250 mm)	Width 2 (500 mm)	Number of screws 13 mm depth	Number of screws 22 mm depth
Multimedia panel with perforated steel 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)	-	-	-	-

UNxxTN panels can additionally be screwed to the enclosure with the **ZZ41FWB** kit if the locking mechanism has too much play ([see page 69](#)).

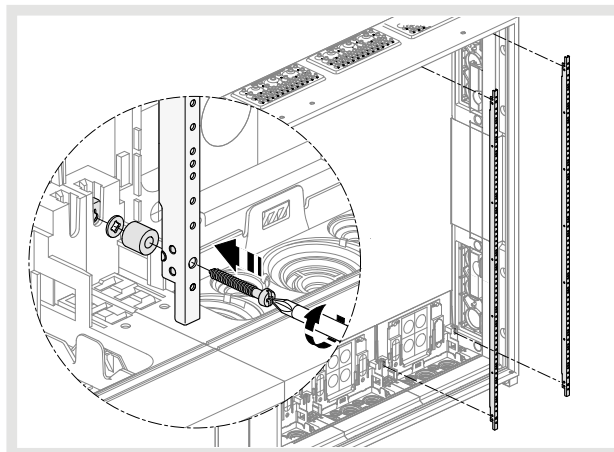
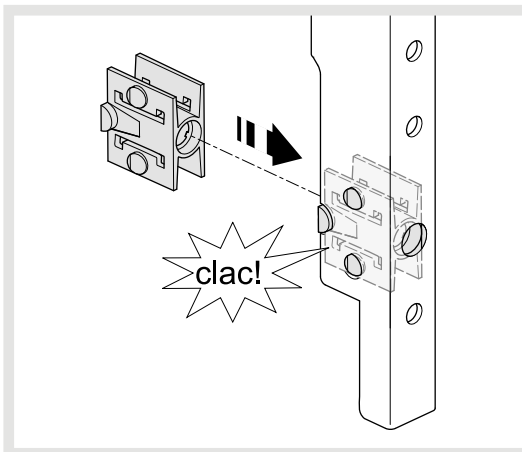
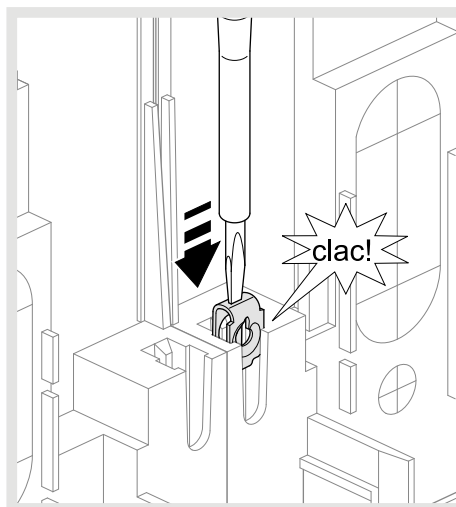
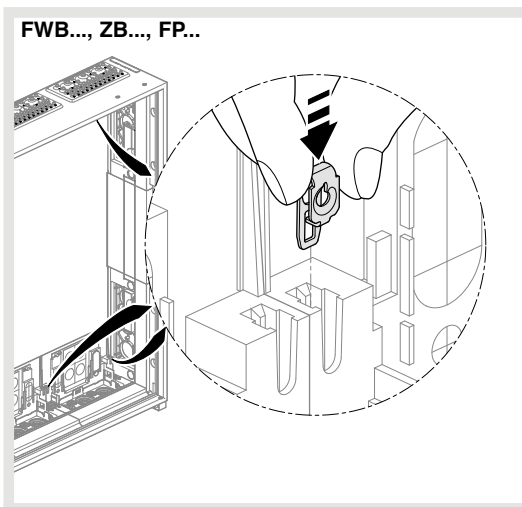
Mounting plates can also be ordered as individual parts and screwed onto univers Z mounting rails ([see page 79](#)).

**univers FW adapter set**

As mentioned above, UMxxUK and UNxxTN panels can additionally be screwed to the enclosure with the ZZ41FWB kit if the locking mechanism has too much play. The ZZ41FWB kit contains four spacers which level the univers FW panels / mounting rails at the same depth as the univers Z mounting rail in FWB enclosures.



Set ZZ41FWB



These panels can be easily fixed with the supplied 34.5 mm univers fixing screws and locknuts.

### 7.2.3 Hybrid panels

Hybrid panels are available as accessories. They consist of rows of modules at the top and of mounting plates at the bottom. Hybrid panels are dedicated only for the mounting in 1-field wide enclosures (especially when the space at shop floor is not enough for having a Multimedia enclosure 550 mm wide) and in 2-field wide enclosure heights 4, 5 and 6. Those panels are **not** compatible with vertical partitions UZx0F1 und UZx0F2. Those partitions have to be mounted on distribution panel side.

The last letters of the product code B and M mean that this panel is dedicated for the surface-mounted field distributor FWB. The following number represents the number of rows for modules at the top of the panel. For example in the product code UN61**B3**, **B** means that the product is dedicated for the FWB field distributor and it has 3 DIN rails for modules at the top (**3**).

#### UNx1B1 / UNx1B2 / UNx1B3 / UNx1B4 / UMx1M3 / UMx1M4

The panels UN...1B1 up to ...1B4 and. UM...1M3 up to ...1M4 are composed of DIN rails with cover and PEN-holder with PE or PEN QuickConnect (QC) clamps at the top, a horizontal partition in the middle and plastic mounting plates UM00M0 at the bottom.

Note: Panels with 1 and 2 DIN rails at the top are equipped with the universal PEN holder KN00A, which is fixed on the 12 modules wide DIN rail and thus reduces the number of modules that can be mounted on the rail by 5.



Example: UN41B1

Panels	Height	Width 1 (250 mm)	PEN holder	QC clamp	Mounting plate UM00M0
1 x DIN rail at the top, Multimedia field with plastic mounting plates at the bottom	4 (600 mm)	UN41B1	KN00A	KN14E	2 x



Example: UN51B2

Panels	Height	Width 1 (250 mm)	PEN holder	QC clamp	Mounting plate UM00M0
2 x DIN rail at the top, Multimedia field with plastic mounting plates at the bottom	5 (750 mm)	UN51B2	KN00A	KN18E	2 x
	6 (900 mm)	UN61B2	KN00A	KN18E	2 x



Example: UN71B3

Panels	Height	Width 1 (250 mm)	PEN holder	QC clamp	Mounting plate UM00M0
3 x DIN rail at the top, Multimedia field with plastic mounting plates at the bottom	6 (900 mm)	UN61B3	UZ00K1	KN18E	2 x
	7 (1050 mm)	UM71M3	UZ00K1	2xKN10N + KN18E	2 x
		UN71B3	UZ00K1	KN18E	2 x
	8 (1200 mm)	UN81B3	UZ00K1	KN18E	3 x



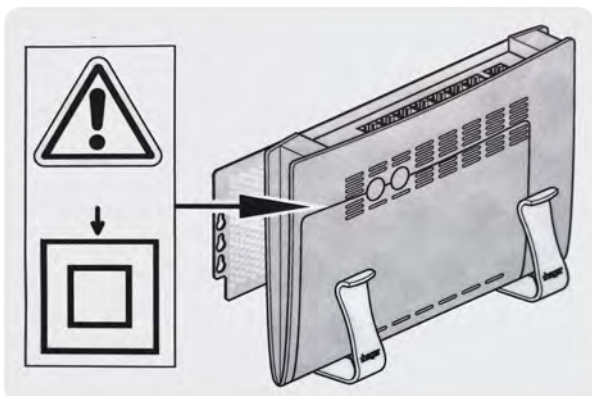
Example: UM81M4

Panels	Height	Width 1 (250 mm)	PEN holder	QC clamp	Mounting plate UM00M0
4 x DIN rail at the top, Multimedia field with plastic mounting plates at the bottom	7 (1050 mm)	UM71M4	UZ00K1	2xKN10N + KN22E	2 x
		UN71B4	UZ00K1	KN22E	2 x
	8 (1200 mm)	UM81M4	UZ00K1	2xKN10N + KN22E	2 x
		UN81B4	UZ00K1	KN22E	2 x

### 7.2.4 Protection class by Multimedia panels and Hybrid panels

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

When using multimedia kits (without covers), all devices and wiring must be equipped with protective insulation or double insulation. The following sticker is stucked on the mounting plate to point this out:



Sticker "protective insulation"

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

Protection class II can also be obtained by mounting UZ01A2 tower overparts and covers on top. However, this reduces the construction height for devices between the mounting plate and the cover.

### 7.3 Supply of individual panel versions

Panels can be assembled from individual parts. The accessories required for this purpose are listed in the following chapters.

#### 7.3.1 univers Z UN0xA mounting rails



UN03A

Contents	Height	Width 1 (250 mm)
2 mounting rails with 4 fixing screws, 34.5 mm length	3 (450 mm)	UN03A
	4 (600 mm)	UN04A
	5 (750 mm)	UN05A
	6 (900 mm)	UN06A
	7 (1050 mm)	UN07A
	8 (1200 mm)	UN08A

#### 7.3.2 UZ0xAx fixation towers



UZ03A1: fixation tower bottom parts left + right



UZ04A1: Twin tower / twin fixation tower



UZ01A2

UZ01A4

fixation tower top part

### 7.3.3 DIN rails U...

The following univers Z DIN rails can be ordered separately. The rail profile is 35 x 7,5 x 1 mm.



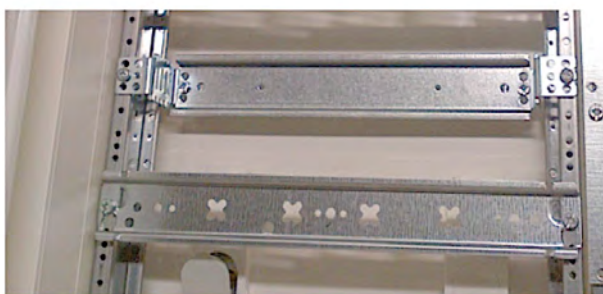
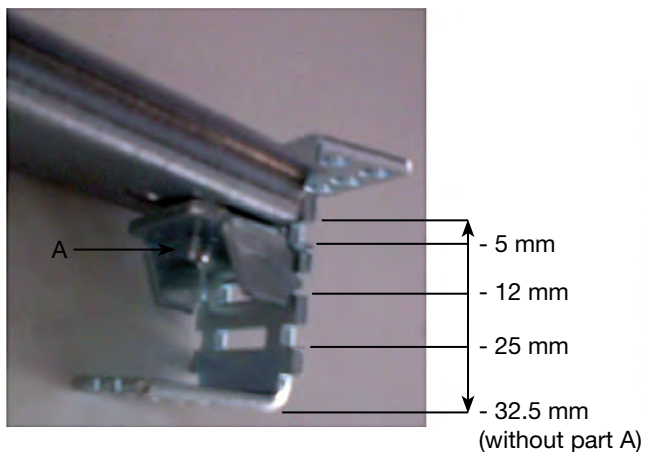
**U842B:** 7,5mm DIN rail standard (12 modules width)



**U842C:** Din rail 26 modules



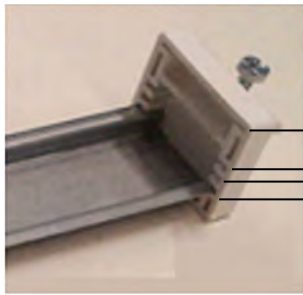
**U82A:** 7,5mm DIN rail, insertable (200 mm length)  
1-panel, adjustable depth up to 32.5 mm



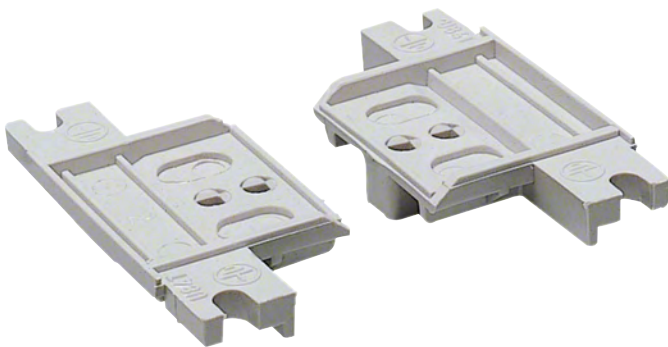
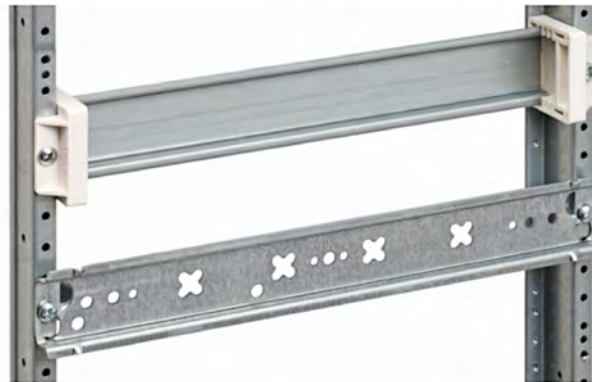
**UT22B:** 7,5mm DIN rail, insulated, insertable (200 mm length)  
1-panel, recessed depth 31 mm (non adjustable)



**UT22C:** 7,5mm DIN rail, insulated, insertable (212 mm length)  
1-panel, adjustable depth up to 21 mm



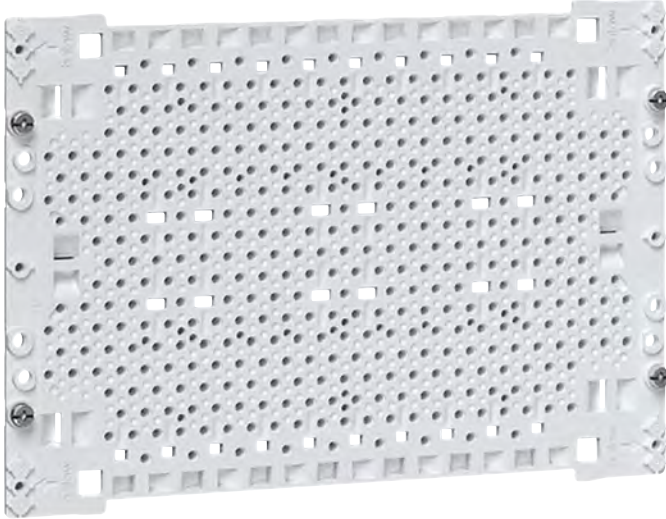
0\*  
- 13 mm  
- 17 mm  
- 21 mm



**U84T:** 2 x insulating piece for univers Z 7,5mm DIN rail, with screws

### 7.3.4 UM00M0 plastic mounting plate

The new **UM00M0** plastic mounting plate is 250 mm wide and 175 mm high. The plate can be screwed onto the vertical univers Z (UN0xA) and univers FW (UN0xFN) mounting rails and is installed in the new UMx1UK multimedia panels as standard.

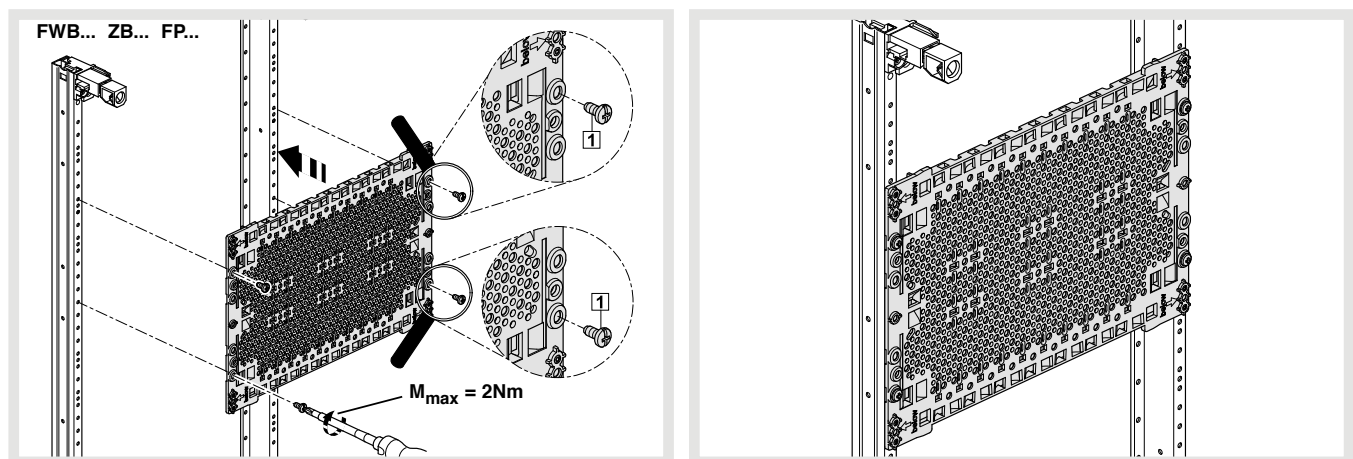


Example: UM00M0

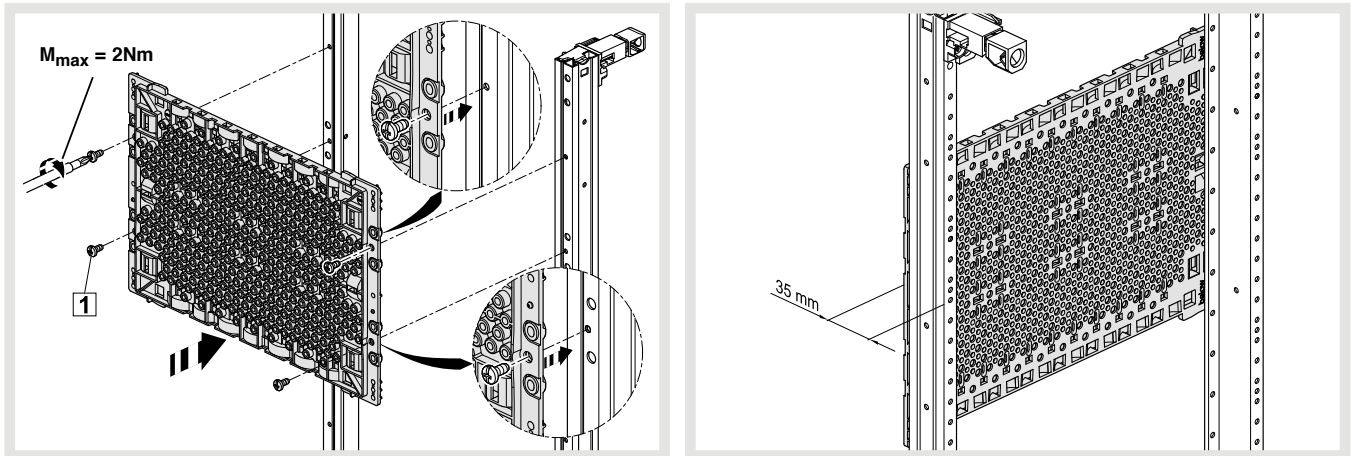
#### Installation

The mounting plate comes with 10 short and 10 long plastic screws for use in plastic materials as well as 4 x univers 4.2 x 9.5 mm screws for screwing onto the mounting rail. The panel can be installed with wall and flush distribution boards, always above and below the panels.

In the FWB multimedia cabinet, this moves the mounting plate 35 mm behind the mounting rail. The resulting usable width for installing devices on the mounting plate is 212 mm (width between the mounting rails).

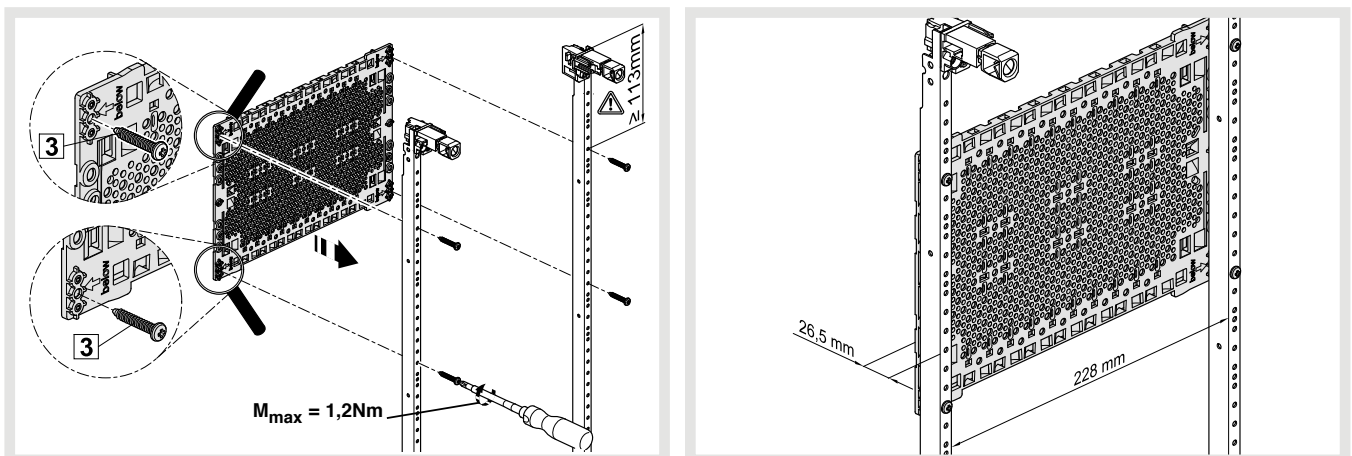


Installation of the UM00M0 plastic plate on the front of the univers Z mounting rail



Installation of the UM00M0 plastic plate on the rear of the univers Z mounting rail

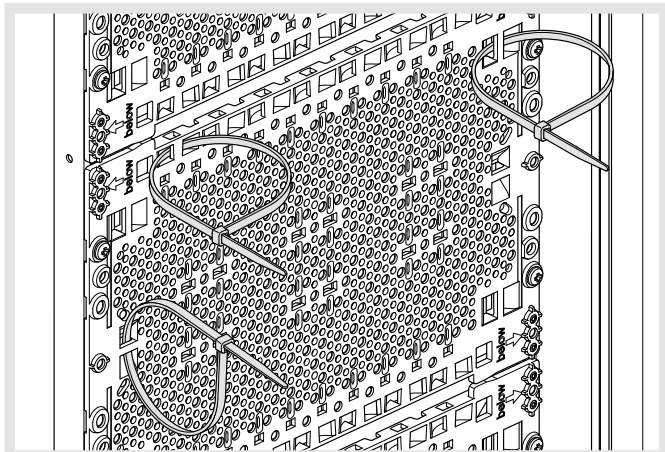
On the UMx1UK panel, this moves the rear edge of the mounting plate 26.5 mm behind the mounting rail. The resulting usable width for installing devices on the mounting plate is 228 mm (width between the mounting rails).



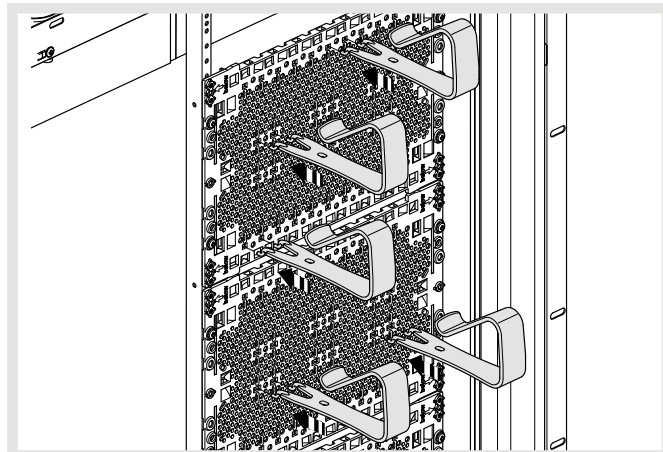
Installation of the UM00M0 plastic plate on the rear of the univers FW mounting rail

The mounting plate has various integrated functions:

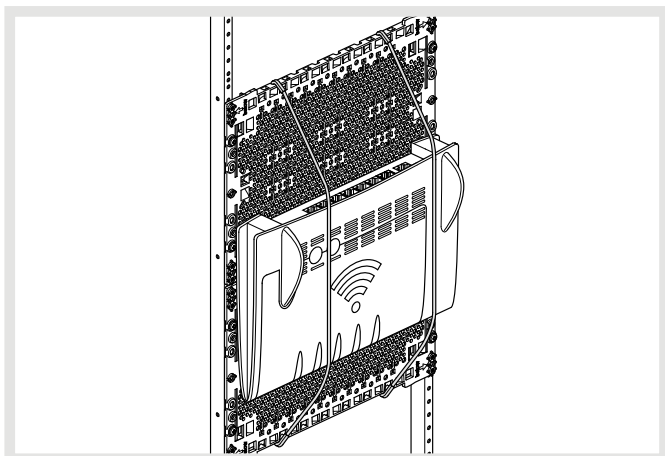
- Installation of cable ties
- Installation of **FZ913** cable holders
- Installation of **VZ02MM** modem holder
- Quick fixing of **VZ340** elastic bands
- Depth adjustment of the mounting rails



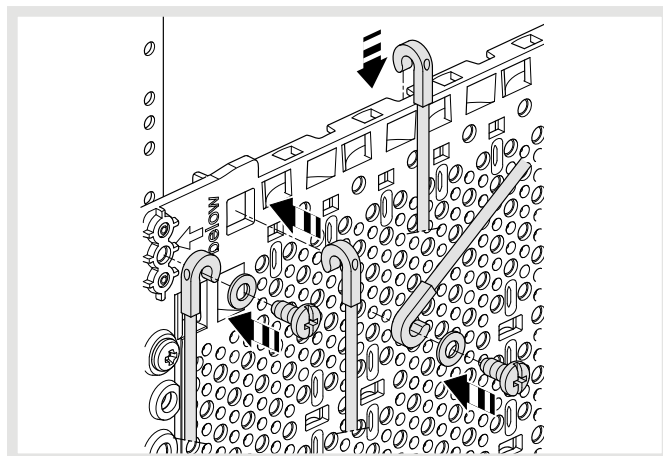
Cable ties installed on the UM00M0 plastic mounting plate



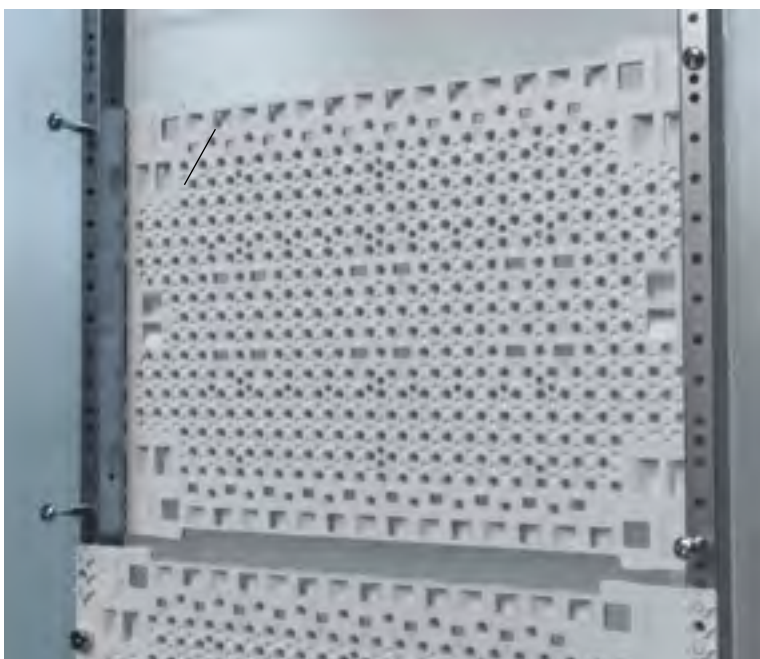
VZ02MM modem holder installed on the UM00M0 plate



VZ340 fixing kit with modem installed on the UM00M0 plate



VZ340 fixing kit mounting options



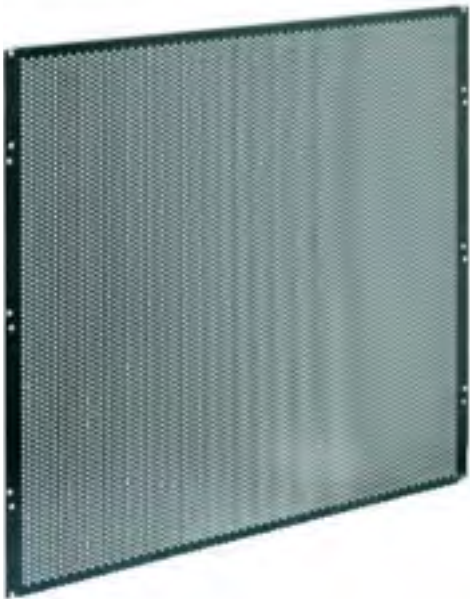
Mounting plate on the rear of the univers FW mounting rail (top)  
Installation on the front of the univers FW mounting rail (bottom)

Standard univers metal screws 4.2 x 9.5 mm (e.g. **UZ100**) can also be screwed into the mounting plate as long as the tightening torque of 1.2 Nm is not exceeded.

### 7.3.5 UZxxMx steel mounting plates

Steel mounting plates, also called perforated plates, come in 2 different versions. Like in the cabinet references, the two digits after the UZ indicate the height and width of the panel into which the panel fits. The ending **M5** means that the panels are rectangular. **M6** panels, on the other hand, are extended at the top and bottom so that this extended area fits between the mounting towers for the covers. M6 panels therefore have a little more space.

For example, the coding of the **UZ42M5** perforated metal plate below shows that it fits into a panel area of 600 x 500 mm (**42**) and has a rectangular profile (**M5**).



Example: UZ42M5

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



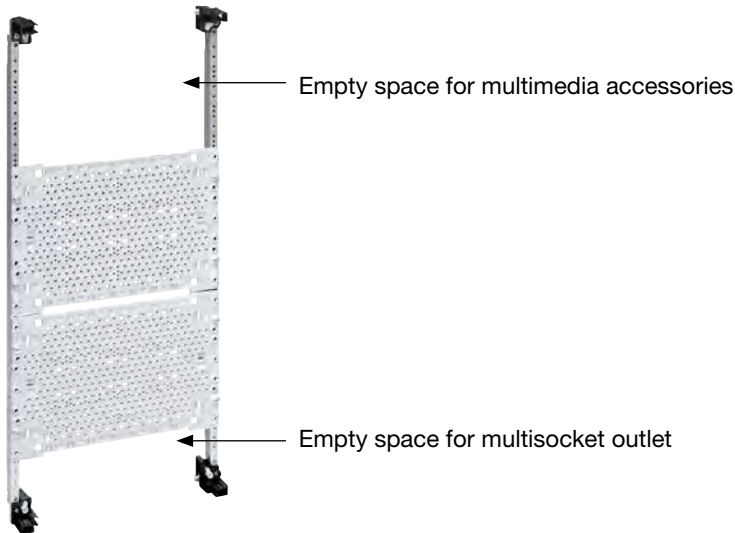
Example: UZ31M6

Extension of the perforated metal plate area in M6 plates

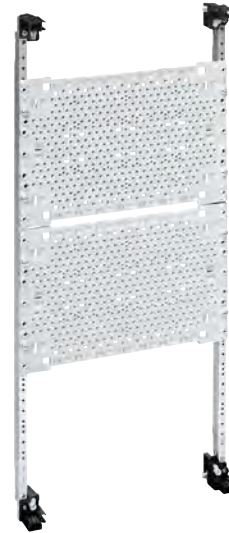
Panels	Height (mm)	Width 248 mm
Steel plate (extended)	240	UZ21M6
	390	UZ31M6
	570	UZ41M6
	720	UZ51M6
	890	UZ61M6

## 7.4 Multimedia accessories

Empty spaces have been created at the top and bottom of each multimedia panel as accessory UMx1UK or integrated in K cabinet versions in every multimedia panel. These spaces are dedicated for the installation of new multimedia accessories.



Example: UM41UK with plastic plates



Panels can also be rotated by 180° and installed

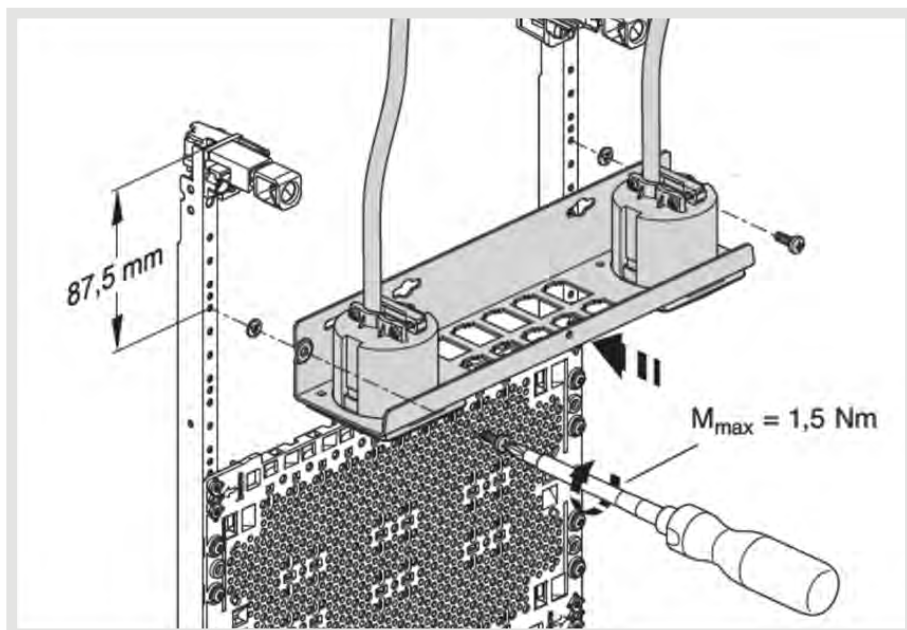
At the top, for example, the patch panels and socket holders UM00Hx and UM00Kx can be installed and cleanly concealed with a cover. At the bottom, the Volta multisocket outlets **VZ00AS** and **VZ00ASF** can be installed and also concealed with a cover:



Equipped cabinet, with multimedia panels installed on the right, patch panel (top), multisocket outlet (bottom) and respective covers

These multimedia accessories can be installed in FWB wall cabinet and FWU flush cabinets.

A patch panel is installed horizontally at the top on the mounting rails by screwing the metal bracket into the bottom hole of the triple hole patterns (position 87.5 mm from the top). Patch panel screws are equipped for easy installation with anti-loss washers.



Horizontal installation of the patch panel at the top of the mounting rails

A special cover can be installed on the patch panel. First, 2 fixation towers (**UZ01A2**) have to be inserted. The cover contains 2 grippers in the front area which grip below the metallic bracket.



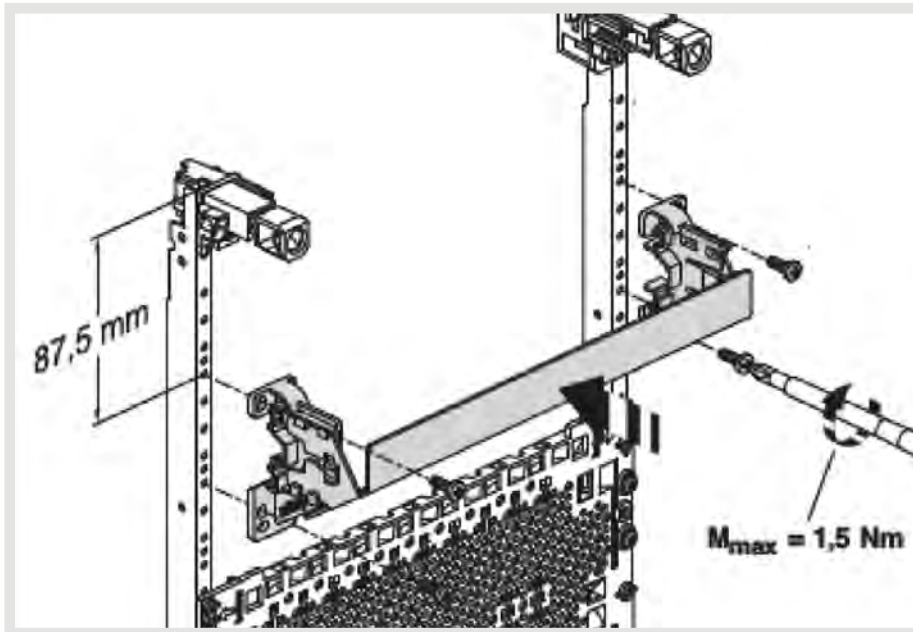
Installation of the patch panel cover with 2 fixation towers

The cover can also be screwed on to the metal bracket with the help of the visible pre-stamp ① in the centre area.

The cover can be ordered as market reference through **UM00S2** or in the **UM00S1** set.

Both of these references already contain the needed fixation towers.

The existing patch panels from Volta range **FZ12MM** and **FZ12MMO** can also be neatly concealed with the new covers. To do so, the black plastic patch panel mounting bracket has to be screwed to position 87.5 mm. See next page.



Installation of the cover for the Volta FZ12MM patch panel mount

The Volta multisocket outlet can be installed directly in the bottom area. It has to be screwed in through the elongated holes on the side of the socket enclosure into the first  $\text{\O} 3.2$  mm hole in the mounting rail (position 47.5 mm from the end of the mounting rail).



Installed Volta VZ00AS multisocket outlet and fitting UM00S3 cover

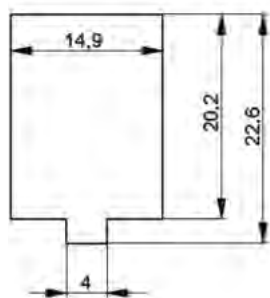
As in the patch panel area, a special cover can also be installed here. First, the two fixation towers (**UZ01A2**) have to be inserted.

The cover can be ordered as market reference through reference **UM00S3** or in the **UM00S1** set. Both of these references already contain the needed fixation towers.

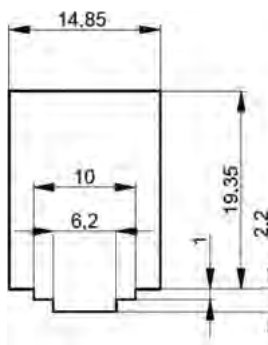
### 7.4.1 Patch panels without socket insertion

Patch panels with various patch formats can be installed in the FWB distribution board.

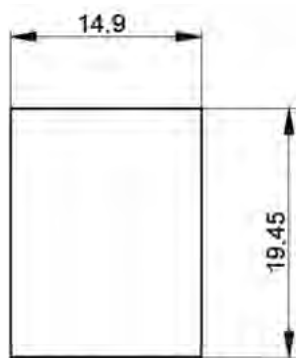
#### Patch panel opening dimensions



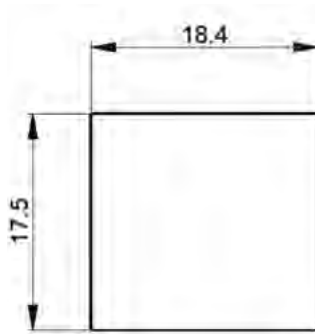
HMS system



E-DAT



Keystone



Lexcom

**UM00K4 / UM00K5**

The UM00K4 and UM00K5 mounts have between 18 and 24 patch openings in the E-DAT or Keystone formats:

- UM00K4 for 24 x E-DAT
- UM00K5 for 24 x Keystone



UM00K4

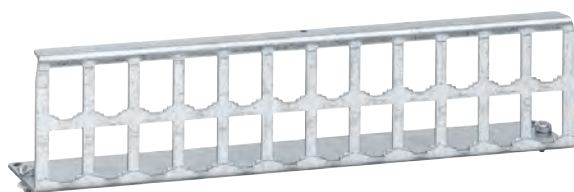


UM00K5

**UM00M4 / UM00M5 / UM00M6**

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

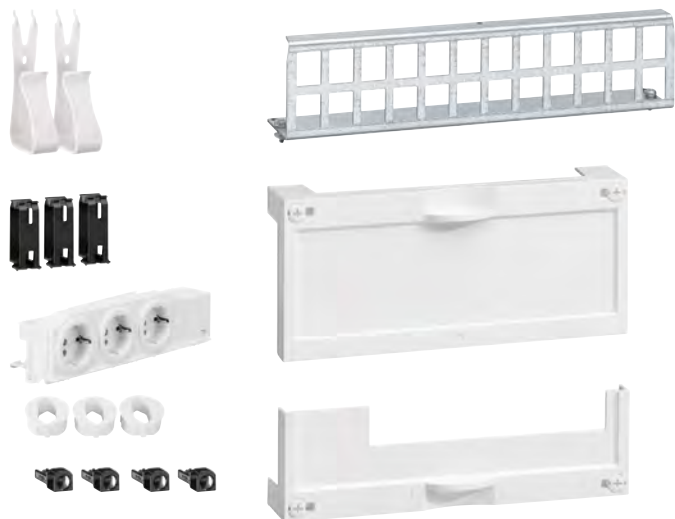
- 2 modem holders (VZ02MM)
- 3 cable holders (FZ913)
- Schuko multisocket outlet (VZ00AS)
- Metal patch panel



UM00M4

The UM00K5 and UM00K6 are included in sets UM00M5 and UM00M6. These sets comprise:

- 2 modem holders (VZ02MM)
- 3 cable holders (FZ913)
- Schuko multisocket outlet (VZ00AS)
- Cover to fit the socket (US00S2) and patch panel (US00S3) with fixation towers
- Metal patch panel



UM00M5



UM00M6

**FZ12MM/ FZ12MMO / FZ12MK**

The Volta FZ12Mxx patch panels with 12 patch openings in the E-DAT or Keystone format are compatible with the distribution boards:

- FZ12MM contains 6 x E-DAT modules Cat.6A, 10 Gbit/s, ClassE.
- FZ12MMO is suitable for E-DAT and does not contain any E-DAT modules. They can be ordered with reference VZ314RJ.
- FZ12MK is suitable for Keystone and does not contain any Keystone modules.



FZ12MM



FZ12MMO



FZ12MK

**UM00M1 / UM00M2**

The FZ12MM and FZ12MMO patch panels are also included in sets UM00M1 and UM00M2.

These sets comprise:

- 2 modem holders (VZ02MM)
- 3 cable holders (FZ913)
- Schuko multisocket outlet (VZ00AS)
- Metal patch panel with / without module



UM00M1



UM00M2

All patch panels are compatible with cover **UM00S2**.

## 7.4.2 Berker Integro Design Flow patch panel with socket insertion

### UM00K3

A special patch panel and socket combination has been developed for the German market. The UM00K3 mount has 1 opening each on the left and right side for Berker Integro Design Flow sockets and 10 patch openings in the centre.



UM00K3

E-DAT inserts such as: VZ31xxx can be installed in the centre area of the patch panel.



VZ314RJ



VZ318LC

Berker Integro Design Flow inserts can be screwed in on the left and right. 8 screws are supplied with the UM00K3 patch panel for this purpose. Inserts are available through the Berker references **9...** or as accessories for Volta Hybrid range **VZ00HB** and **VZ00HD**.



VZ00HB



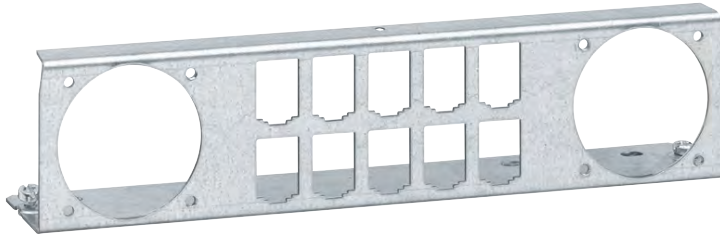
VZ00HD



945602502

**UM00M3**

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



UM00M3

### 7.4.3 Patch panel with FLF socket insertion

Combined patch panel and socket openings have also been developed for Switzerland.

The **UM00H1** and **UM00H2** as well as **UM00K1** and **UM00K2** mounts have 1 opening each on the left and right for FLF components type 13 and have 10 or 14 patch openings.



UM00H1



UM00H2

The UM00H1 and H2 patch panels are compatible with the HMS patch inserts **WH7...** HMS stands for Hager Multimedia System.



WH70300200Z



UM00K1



UM00K2

The UM00K1 and K2 patch panels are compatible with Keystone patch inserts.

Type 13 FLF sockets, size I and/or II, can be used on the left and right.  
These modules are also called "Fertigapparate" in Switzerland.



WH37580300D



WH66549000D



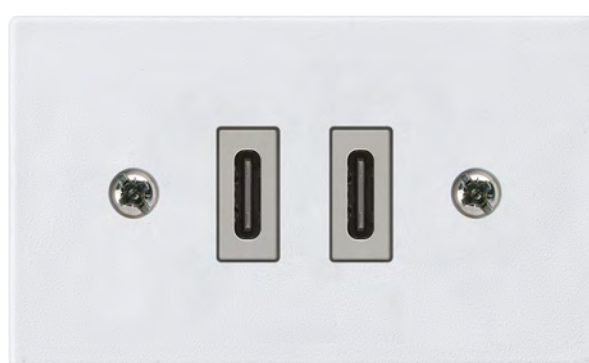
WH37640300D



WH37620300D



WH66410100D



WH66822100D

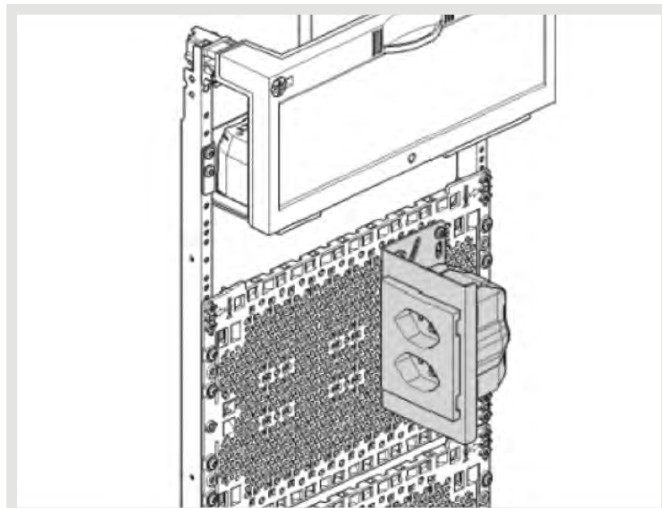
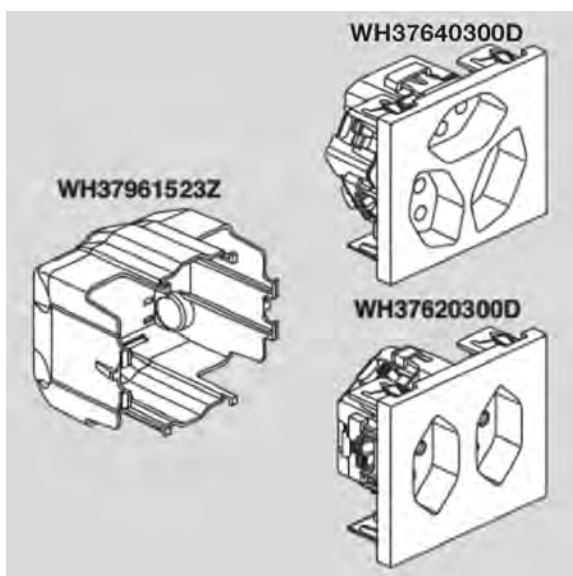
See the note on protection class II on [page 93](#)

### 7.4.4 FLF socket holder UM00H0

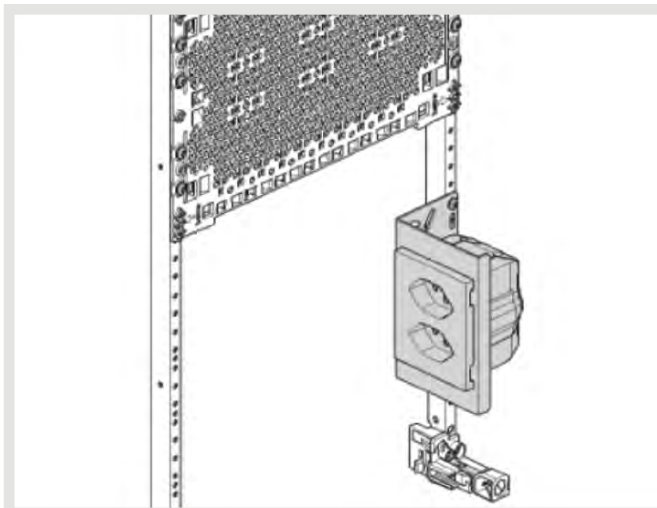
The **UM00H0** socket holder is compatible with the Swiss type 13 FLF socket system. Hager FLF twin and multisocket outlets **WH37...** can be locked into the metal opening. The mount can be screwed vertically and directly onto mounting rails or mounting plates.



UM00H0

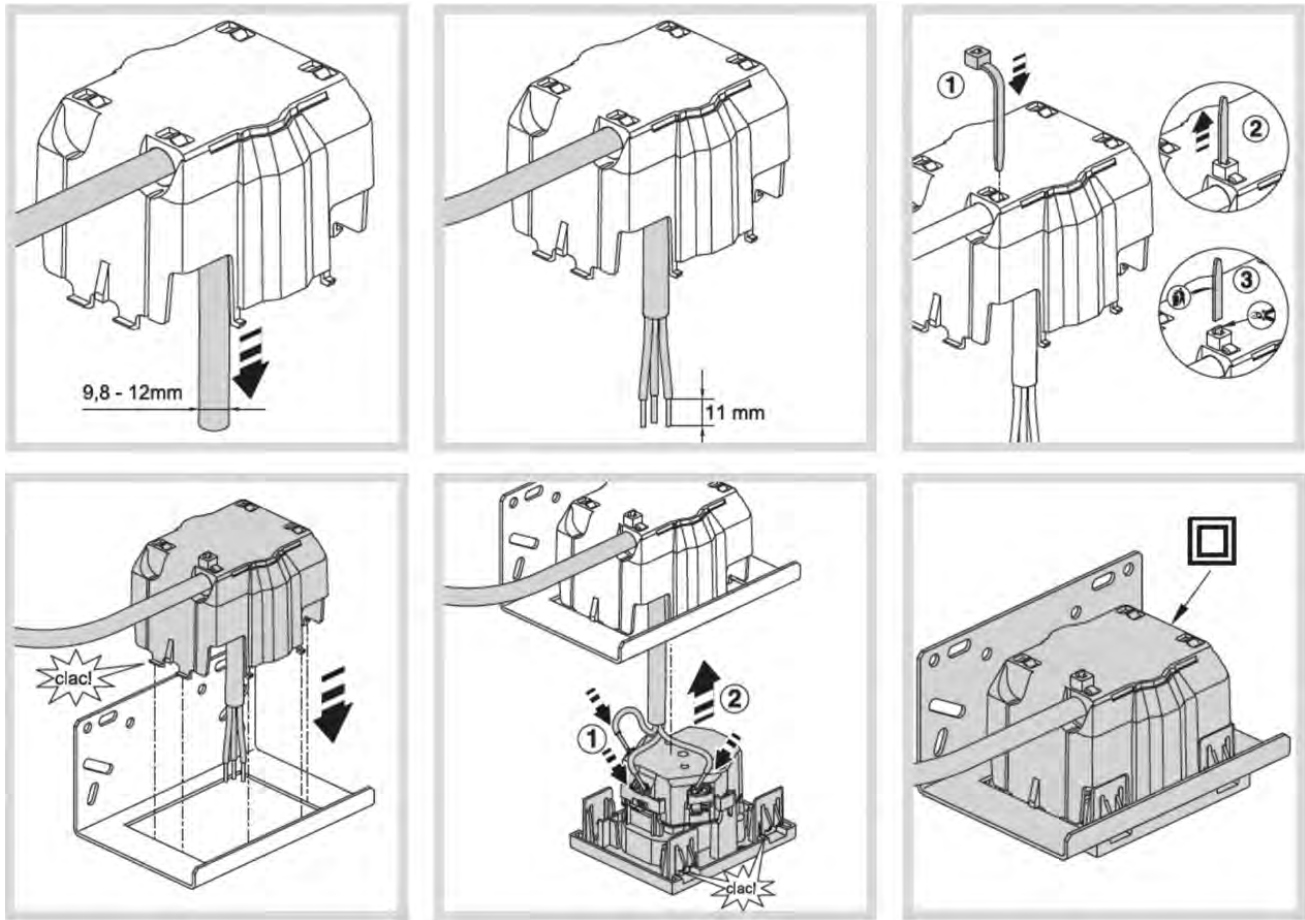


Installation of the UM00H0 socket holder on the mounting plate

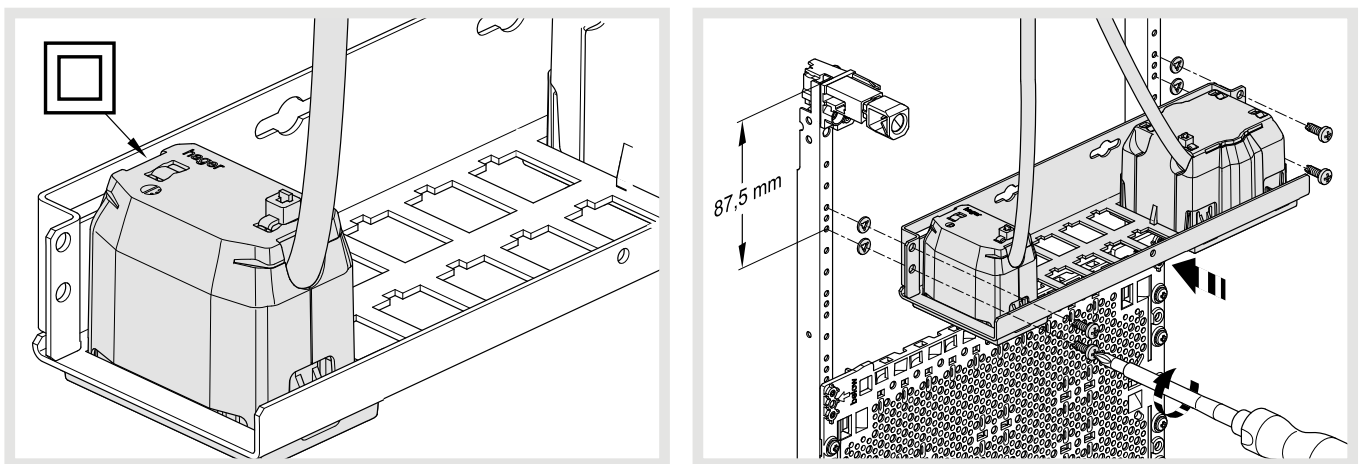


Installation of the UM00H0 socket holder on the mounting rail

⚠ FLF sockets have to be covered with the cover **WH37961623Z** (size I) or **WH37961523Z** (Size II) to ensure protection class II.



Mounting of the WH37961523Z cover for FLF sockets size II to ensure protection class II



Mounting of the WH37961623Z cover for FLF sockets size I to ensure protection class II

### 7.4.5 Set VZ00APZ with socket and bracket

Set VZ00APZ can also be screwed onto a mounting rail or mounting plate in the FWB cabinet.  
It consists of:

- 1 metal angle with screws
- Berker Schuko socket with cover



VZ00APZ

### 7.4.6 Volta VZ00AS / VZ00ASF multisocket

The multisocket rails from the Volta product range are compatible with the internal system of the FWB distribution boards.

Schuko (VZ00AS) or French (VZ00ASF) socket inserts can be rotated by 180°.

The multisocket can be installed in the multimedia panel below the installation plate and concealed with cover **US00S3**.



VZ00AS



VZ00ASF

### 7.4.7 UM00Sx multimedia covers

Two univers special covers were developed for concealing the patch panel and the Volta multisocket outlet:

- **UM00S1** contains both covers as a set with fixation towers.
- **UM00S2** contains the patch panel cover with fixation towers.
- **UM00S3** contains the socket cover with fixation towers.



Set UM00S1



UM00S2



UM00S3

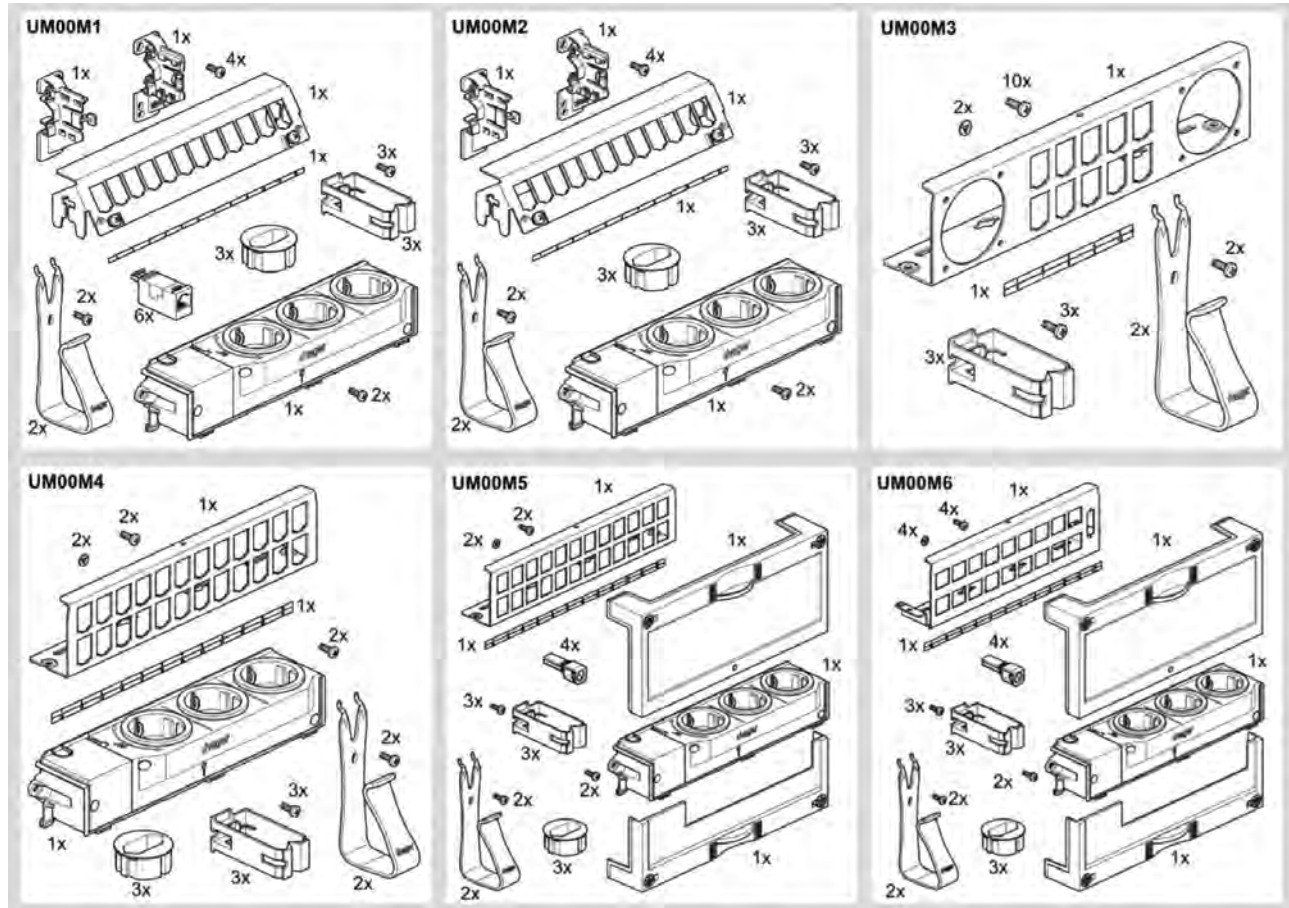


FWB42K1 with installed covers for patch panel and multisocket insert

### 7.4.8 UM00Mx multimedia sets

Various UM00Mx multimedia sets have been developed for main FWB markets.

The different UM00Mx multimedia sets (with patch panels, covers, top tower parts, covers and additional multimedia accessories) are summarised below:



UM00Mx multimedia set overview

UM00M1 contains patch panel FZ12MM.

UM00M2 contains patch panel FZ12MMO.

UM00M3 contains patch panel UM00K3.

UM00M4 contains patch panel UM00K4.

UM00M5 contains patch panel UM00K5.

UM00M6 contains patch panel UM00K6 (for 18 x Lexcom and 1 x glass fibre).

## 8 Internal system accessories

### 8.1 Coding

The univers system has plenty of accessories that are compatible with the FWB cabinet. The corresponding references start with:

<b>FZ...</b>	DIN rails, door accessories, flange, mounting brackets ...
<b>U...</b> ,	DIN rails ...
<b>US...</b>	Covers ...
<b>UN...</b> , <b>UM...</b>	Mounting rails, multimedia accessories ...
<b>UW...</b>	Distribution panels ...
<b>UT...</b> , <b>UZ...</b> , <b>ZZ...</b>	Towers, mounting plates, screws, partitions ...

Additional accessories from non-univers product ranges can also be integrated, such as:

<b>K...</b> , <b>KN...</b> , <b>KM...</b>	terminals and terminal accessories
<b>VZ...</b>	Volta, Vector
<b>WH37...</b>	Type 13 FLF sockets (CH)
<b>926002509 + ...</b>	Berker Integro Design Flow sockets and inserts

## 8.2 Internal system accessories in detail

### 8.2.1 Flange FZ428 for rear cable entry

As mentioned in chapter 1, the rear cable entry can be sealed with the dustproof flange **FZ428**. To do so, the rear cable entry must be cut out entirely in the top / bottom part (ideally from the rear prior to mounting the cabinet on the wall).

The flange panel is installed from the inside of the cabinet. This ensures that the cables are first fed into the cabinet and from there through the flange.

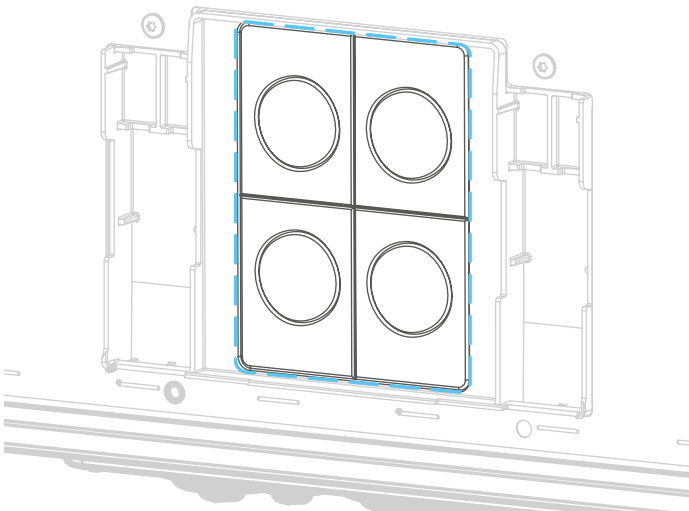


Cable entry flange FZ428, IP44/IP54



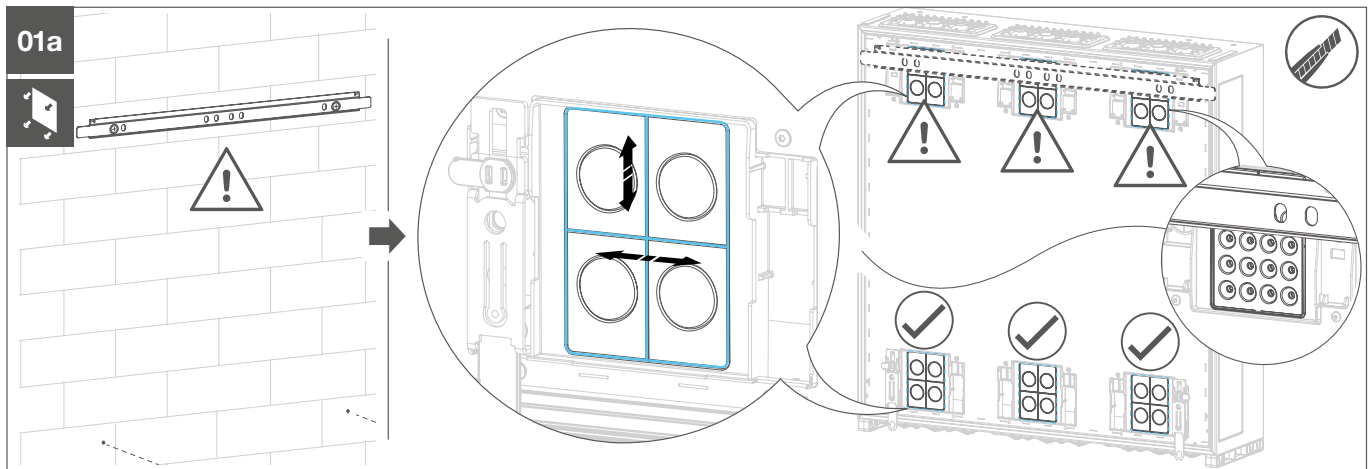
Flange FZ428 installed on the rear of the cabinet

The rear of the plastic top and bottom parts in the cabinet contains also four precuts with a diameter of 29 mm that can be punched out.

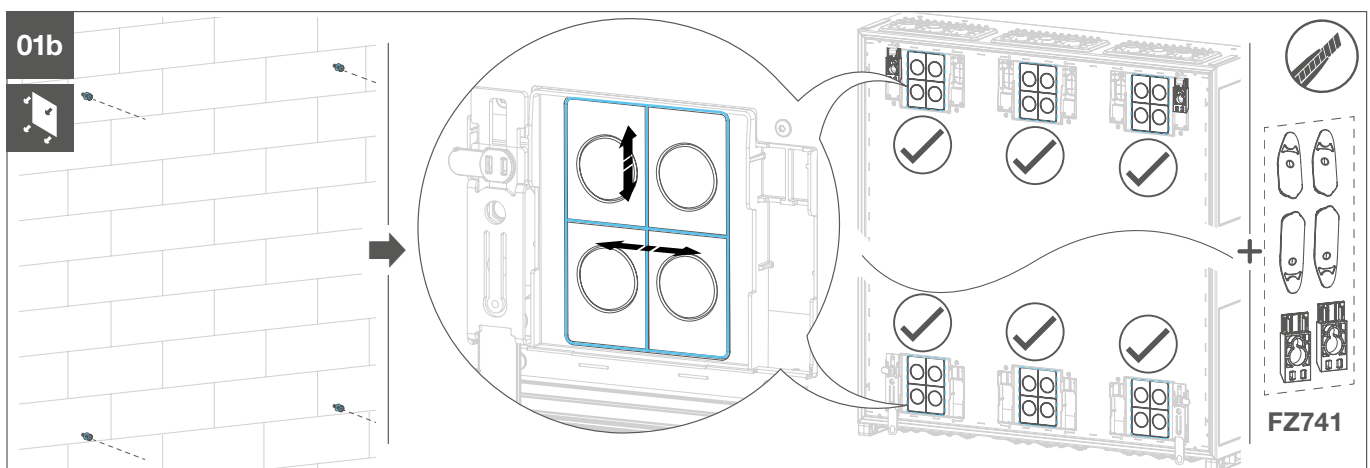


Punch-out points on the rear of the cabinet

Please note: The cabinet mounting rail partially covers the cable entry area for the rear flange **FZ428** at the top (see Fig. 01a).



To make full use of the flange, the cabinet must be mounted on the wall using the 4-point fixing system (see Fig. 01b). The supplied accessory FZ741 is required for this. See also the section on **4-point mounting** (page 18).



## 8.2.2 Cable entry flange

The cabinets are supplied with the **FZ426** cable entry flanges as a standard.



FZ426 cable entry

Additional flanges can replace the standard cable entries:



**FZ425** cable entry for for meter board, sealable



**FZ460N** cable entry with pre-stamps 6xM16, 2xM20, 2xM16/25, 1xM25/40/50



**FZ466N** cable entry with pre-stamps 15xM16 and 4xM20



**FZ468N** cable entry without pre-stamps

### 8.2.3 Partitions

The distribution board panels can be divided vertically and horizontally.



Cabinet with installed partitions

#### 8.2.3.1 Horizontal partitions

A horizontal separation within a 250 mm wide panel (division) can be created with the **UZ01F1**, **ZZ10H** or **ZZ10W** inserts.

##### UZ01F1: Screw connection on the mounting rails

This 250 mm wide separation is screwed directly onto the mounting rails.



UZ01F1 horizontal separation



UZ01F1 installation

Direct screw connection  
on the mounting rails

**ZZ10H: Locking into UZ04A1 twin towers**

This 250 mm wide partition plate is locked into the UZ04A1 twin towers. This plate is also an accessory for the FWU flush distribution board. The bottom of the plate has to be cut off for installation in the FWU board.



ZZ10H horizontal partition plate



ZZ10H installation

Locking into UZ04A1 twin towers

**ZZ10W: Locking into UZ04A1 twin towers**

Thanks to modifications of the towers, this new 250 mm wide partition can now also be locked into FWB's UZ04A1 twin towers. This part was originally designed as an accessory for the meter board. It features six pre-punched openings for cable passages with hole diameters of Ø7 and Ø10 mm.



ZZ10W horizontal partition plate

**8.2.3.2 UZx0Fx vertical partitions**

Two panels next to each other can also be vertically separated. The UZx0F1 or UZx0F2 are required for this purpose. UZx0F1 partitions are screwed onto the mounting rail from the front. UZx0F2 partitions are locked in and provide additional functionalities. Both partitions only fit on univers Z mounting rails.



UZ40F2 vertical separation

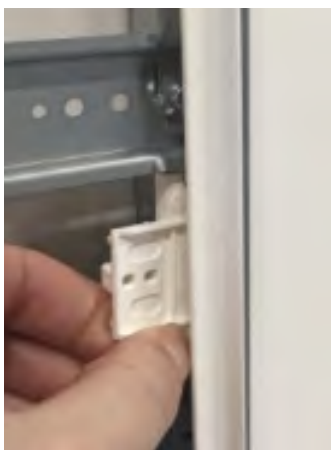
Cabinet height	Reference	Reference	Length (mm)
3 (500 mm)	UZ30F1	UZ30F2	450
4 (650 mm)	UZ40F1	UZ40F2	600
5 (800 mm)	UZ50F1	UZ50F2	750
6 (950 mm)	UZ60F1	UZ60F2	900
7 (1100 mm)	UZ70F1	UZ70F2	1050

UZx0F1 partitions are installed and screwed on to the mounting rails from the front. Their advantage is that they can be inserted or removed subsequently between 2 installed panels without having to remove one of the panel.



Installation of UZ40F1 in FWB distribution board, size 42:  
Installation from the front

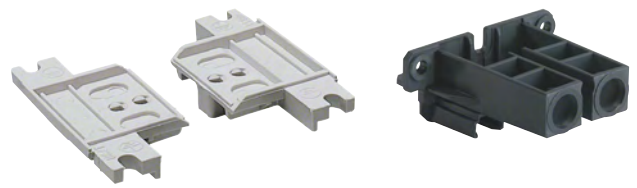
However, they are not compatible with the **U84T**, **UT22C** insulation parts, **UZ04A1** twin tower and **KCLxxx** vertical 63A phase rails.



UZx0F1



KCF663L



U84T

UZ4A1



UT22C

The UZx0F2 separations no longer have to be screwed on to the mounting rails (the same as the FWU separations). They can be simply locked in at the side beneath the mounting rail. These separations can also be screwed on to the mounting rails from the rear if necessary.



Installation of UZ60F2 in FWB distribution board, size 62: quick lock from the side

These F2 partitions have additional key features:



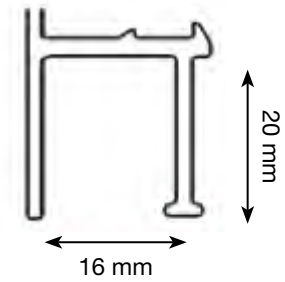
Recess in the centre for installation of the UZ04A1 twin tower mounting



Ø 12 mm pre-stamp top / bottom for a clean cable entry



Integrated cable duct in the central area below the mounting rail




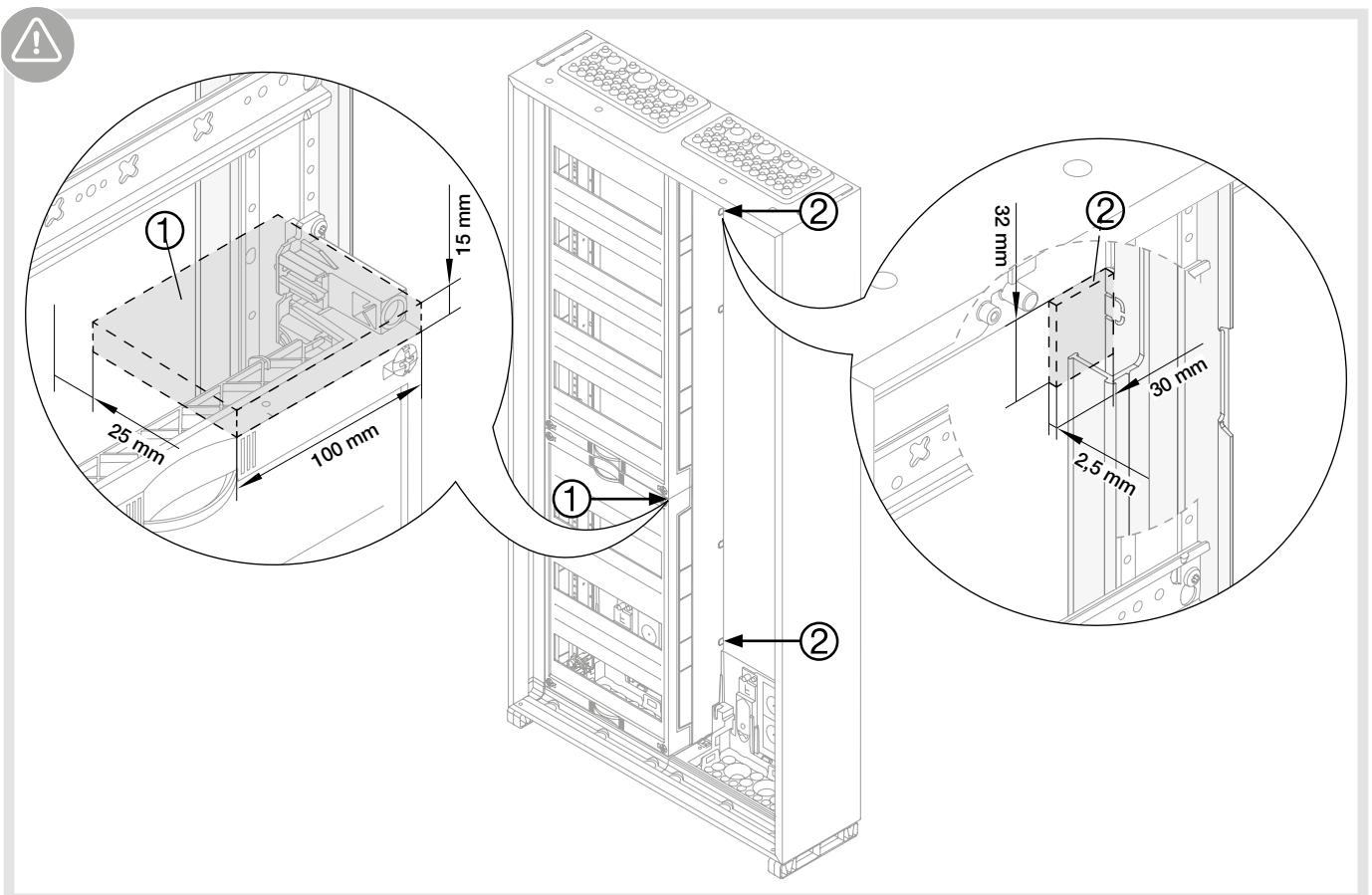
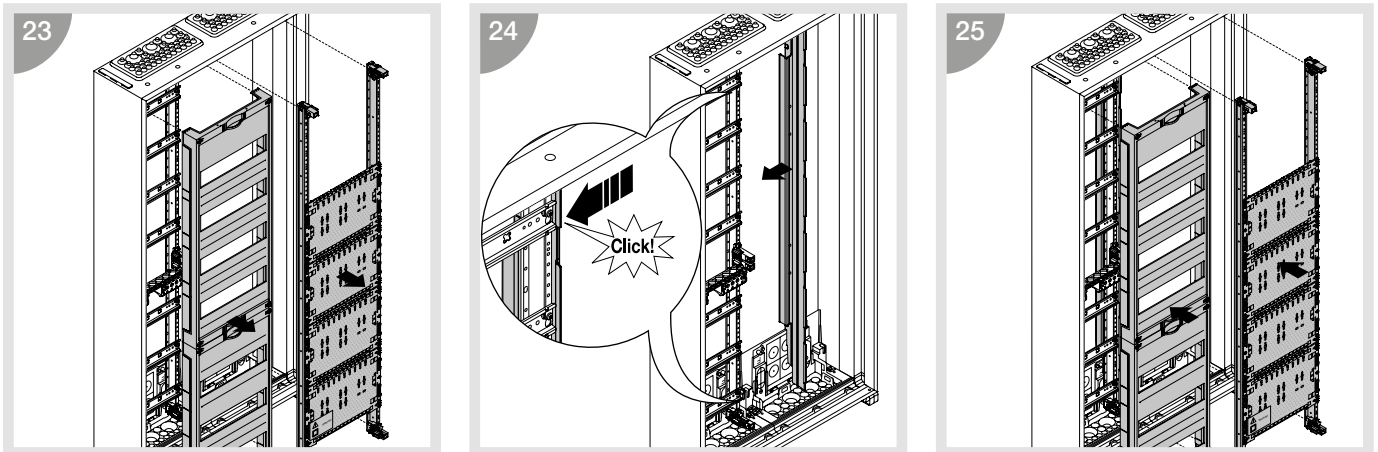
Additional fixing with screws possible (from the rear) with the screws supplied

The UZx0F2 separation is also compatible with the new vertical phase rail up to 63 A to quickly and compactly connect devices in up to 3 rows at a distance of 125 mm.



UZx0F2 separation also compatible with KCL... vertical phase rail

 When installing the vertical partition UZx0F2 (Fig. 23, 24, 25), no electrical equipment and lines should be installed in the marked areas ① and ② to ensure protection class IP2xC. This partition is installed in FWBxxK1 and K5 multimedia cabinets as a standard. Area ① with two covers above each other only applies for cabinet size 7 (Height 1100 mm). However, it is still possible to install QuickConnect terminals on the PEN carrier UZ00K5 in this area, as this carrier ensures IP2XC protection.



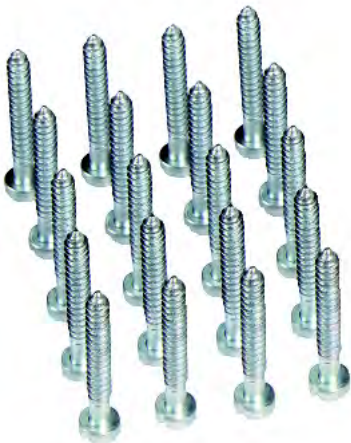
## 8.2.4 Mounting rail bracket

Plastic top / bottom parts in empty FWB empty cabinets with D1 ending are supplied with a locknut as a standard to ensure that mounting rails can be screwed on. Distribution boards with installed panels (e.g. with S or N ending) do not come with a locknut. To screw on a locked panel, 4 locknuts per 250 mm panel width have to be ordered. The **ZZ44SF** set contains 4 locknuts.



Set ZZ44SF consists of 4 screws for FWB,  
4 screws for FWU and 4 lock nuts

The 4.8 x 34.5 mm long screws required for this purpose are supplied with the individual mounting rails **UN0xA** or are available in sets **ZZ44SF** (4 x) and **ZZ40B** (20 x).

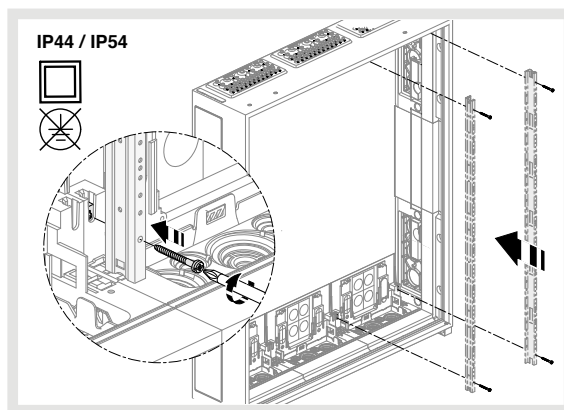
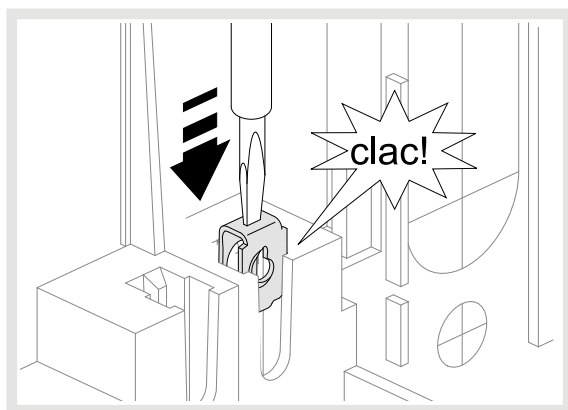
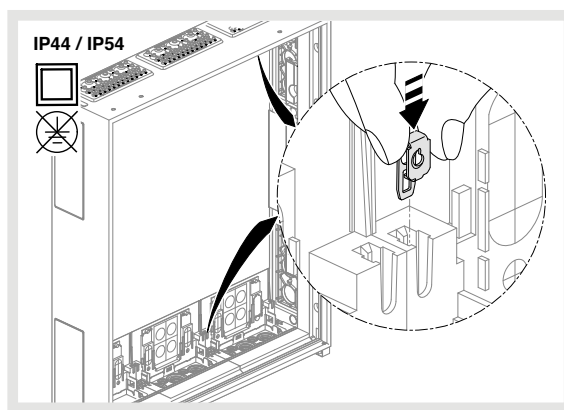
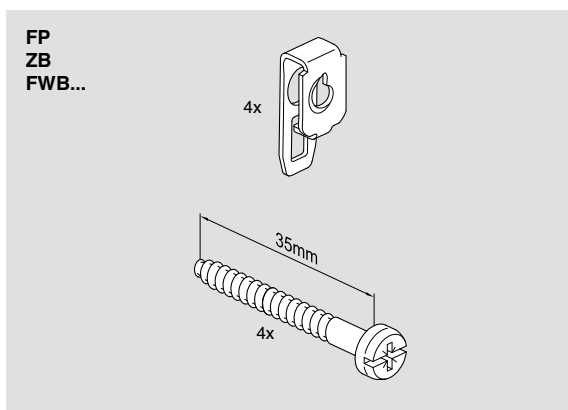
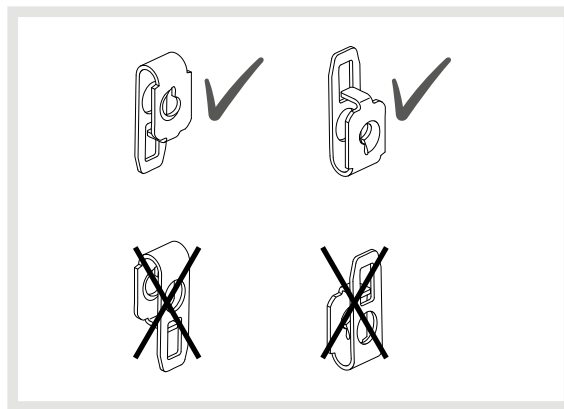
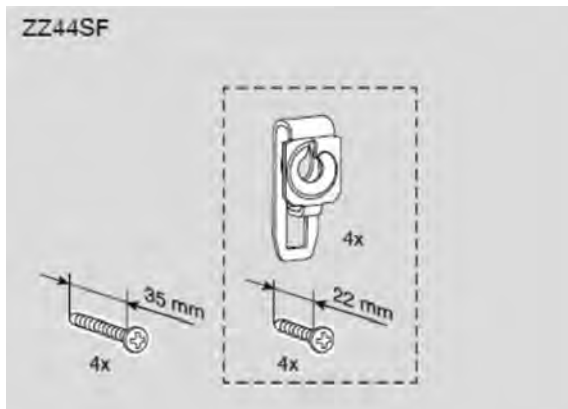


ZZ40B locknut set

For the FWB installation, four locknuts are first inserted in the intended duct in the plastic top / bottom part. The 35 mm long screws then have to be inserted and screwed in through the univers mounting rails.

The 22 mm long screws in the accessories set are used only for fixing the flush distribution panels (FWU board).

Installation



Installing the ZZ44SF screw set for fixing the mounting rail

## 9 Inspection and maintenance

### Important for safe operation

- Regular maintenance is important for the safe operation of switching device combinations.

### All checks and maintenance must be performed by qualified electricians

- All checks and maintenance must be performed by qualified electricians with experience in switching device combinations.

### 9.1 Recurring test intervals

To ensure a high degree of operating safety, commercial switching device combinations should be tested every 4 years by a qualified electrician to ensure they function properly (proposal by the DGUV 3 (previously BGV A3)). National regulations or regulations of insurance companies can shorten or prolong the test interval. Shorter intervals to assure proper functioning and safe operations can be specified:

- due to wear on the equipment.
- due to external influences.
- due to changed operating parameters and environmental conditions.
- in special type rooms and systems in accordance with DIN VDE 100 Group 700.
- in difficult operating conditions, particularly events such as vibration and humidity.
- according to manufacturer's instructions for devices or equipment.
- in accordance with applicable national standards and regulations.

Hager recommends to perform at least one test a year:

- Visual inspection (external check)
- Switching actions of the individual protective and switching devices (operation of test button RCDs every half a year)
- Document all tests, such as in a test log.

### Recommended recurring tests

System / material	Test deadline	Test type	Tester
Electrical systems and fixed equipment	4 years	Proper condition	Qualified electrician (with test experience)
Electrical systems and fixed equipment in special type operating premises, rooms and systems in accordance with DIN VDE 100 Group 700	1 year	Proper condition	Qualified electrician (with test experience)
Cabinet, sheath and protective devices	1 year Recommendation	External visual inspection of switching action / function test	Qualified electrician (with test experience)
RCD ("FI switch")	Half-yearly	Operate test button	Ordinary person

## 9.2 Minimum inspection / maintenance measures

For switching device combinations with FWU distribution board cabinets, the minimum maintenance conditions stated below must be complied with (in accordance with VDE 0100 Part 610 for switching device combinations):

The recurring tests at the time of commissioning, after changes or defects or at suitable intervals include:

- Visual inspection
- Measurements
- Investigations
- Documenting the test results
- Rectification of the defects found, such as by replacing the defective equipment or devices
- Documenting of the work and changes implemented.

### Visual inspection

During the inspection, the qualified electrician tests that the electrical switching system, including its equipment and devices, is in perfect condition. The inspection comprises an external and internal inspection.

- Check the protection against direct and indirect touching of active components.
- Check the basic protection and insulation.
- Check the additional insulation for error protection.
- Check also all covers required for personal protection.
- Check for signs of ageing.
- Check for mechanical, chemical, electrical and thermal stress.

External inspections, tests	Test values, comments, remedy
Electrical systems and fixed equipment	<ul style="list-style-type: none"> <li>- Effectiveness of ventilation system and heating in operating room</li> <li>- Room temperature, relative humidity, aggressive airborne particles, dust</li> </ul>
Accessibility, minimum distances	Escape routes, clearances
Visual inspection of covers and sheaths	Defects which impair the protection class, such as: <ul style="list-style-type: none"> <li>- Missing parts</li> <li>- Locked doors</li> <li>- defective paintwork</li> </ul>
Condition of the sheath, mounting, faceplate	If necessary, repair, replace enclosure parts, clean contamination, fix mountings; always refer to the installation instructions when doing so
Check for signs of corrosion	<ul style="list-style-type: none"> <li>- Repair defects with a suitable FZ791N paint pen. If the defective area is large, sand it back, clean it (e.g. with white gas, white spirit, universal thinner), then paint it</li> <li>- Check the operating and environmental conditions</li> </ul>
Ventilation / traces of heating up	Ensure clearance to the ventilation inserts, implement suitable measures
Hinge pin lock	Lock and replace missing hinge pins
Check that the door hinges move easily	Spray moving lock parts with non-aqueous lubricant, replace locking device if necessary

Seals, flange, touch guards	Replace if defective
Test according to protection class and type	Protection class II for multimedia and hybrid panels: Check for use of double insulated devices and wiring or use of a suitable cover on single towers <b>UZ01A2</b> for multimedia devices, insulation of active earth wires
Check that the type plate / labelling of the switching device combination is legible	Clean if necessary, ensure legibility
Documentation / records for completeness / legibility	Ensure completeness and legibility

### 9.3 Cleaning

Contamination must be cleaned up to ensure safe operations.

Dirt deposits can lead to overheating. Comply with these minimum safety aspects when cleaning:

External cleaning (external door and blind frame)

Ordinary persons are permitted to clean the exterior (with plain door) of distribution boards (DBO) in accordance with EN 61439-3 that can be operated by ordinary persons.

- Clean the door and blind frame from the outside with a dry, lint-free cloth
- Do not use abrasive cleaning agents!
- Do not use liquids and do not clean wet!

#### Internal cleaning by qualified electrician only

- The interior of the switching device combination must be cleaned by a qualified electrician with the power supply switched off
- Clean the switching device combination with a vacuum cleaner and dry cloths only (dry cleaning with suction). During cleaning work, an electrostatic charge of the steel nozzle can cause direct and indirect danger for staff.
- Do not use compressed air for cleaning the device!
- Do not wet clean the device!
- Remove all contamination
- Hager offers a cleaning agent for plastic surfaces under order number **VZ404**.

## 10 Decommissioning, removal and disposal

### Decommissioning

Decommissioning by qualified electrician only

- Switch off system
- Take care of residual energies, voltages and heat
- Activate system and supply cables on all pins and sides
- Secure prior to switching back on
- Ensure that there is no voltage
- Disconnect supply cable / infeed
- Securely lock system
- Attach warning sign that the system is out of service

### Removal and disposal

Removal by qualified electrician only

- Check activation and ensure that there is no voltage
- Remove the system in the reverse order to the assembly and installation process.



**Correct Disposal of this product** (Waste Electrical & Electronic Equipment).

***(Applicable in the European Union and other European countries with separate collection systems).***

This marking shown on the product, or its literature indicates that it should not be disposed with other household waste at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this device for environmentally safe recycling. Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes of disposal.

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## 12 Glossary

### EN 61439 / IEC 61439 / VDE 0660-600

The EN 61439 standard series replaces the EN 60439 standard series. The standard series EN 61439 aims to harmonise the rules and requirements for low voltage switching device combinations.

In the EN 61439 standard series, the relevant part of the standard always applies, such as EN 61439-6 busbars, together with Part 1 of the standard (EN 61439-1).

### Correlation between European and international standards

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

### Parts of standard EN 61439

Part of the European standard	Contents
EN 61439-1	Low voltage switching device combination – Part 1: General specifications
EN 61439-2	Low voltage switching device combination – Part 2: Energy switching device combinations (PSC)
EN 61439-3	Low voltage switching device combination – Part 3: Distribution boards intended to be operated by ordinary persons (DBO)
EN 61439-4	Low voltage switching device combination – Part 4: Special requirements for site power supply distributor (BV)
EN 61439-5	Low voltage switching device combination – Part 5: Switching device combinations in public energy distribution networks
EN 61439-6	Low voltage switching device combination – Part 6: Busways
EN 61439-7	Low voltage switching device combination – Part 7: Switching device combinations for certain applications, such as marinas, camp sites, markets, electric vehicle charging points

### Leaflets for parts of the EN 61439 standard

Part of the European standard	Contents
EN 61439-1 Leaflet 1	General specifications: Guideline for the specification of switching device combinations
EN 61439-1 Leaflet 2	General specifications: Method for proving the heating up of low voltage switching device combinations through calculation
EN 61439-2 Leaflet 1	Energy switching device combinations: Guidelines for testing under accidental arcing conditions due to an internal defect

## **Distribution board for operation by ordinary persons (DBO) in accordance with EN 61439-3**

DBO. In accordance with EN 61439-3, a DBO is a distribution board intended to be operated by ordinary persons. This is a switching device combination for distributing electricity in applications in residential premises and other locations where they are intended to be operated by ordinary persons.

Distribution boards intended for operation by ordinary persons (DBO) are manufactured and tested in accordance with EN 61439 Part 1 and Part 3. Part 3 of standard 61439 defines the specific requirements for distribution boards intended for operation by ordinary persons (DBO).

A switching device combination that permits operation by an ordinary person must include a type plate which states EN 61439-3 (VDE 0660-600-3) as the applied standard.

Unique features of such a switching device combination include:

- 1 They are intended for operation by ordinary persons, including switching actions and replacement of fuse inserts. They are applications in residential premises or household applications in functional buildings.
- 2 The output circuits contain circuit breakers intended for operation by ordinary persons. For further information refer to section 8 of EN 61439-3.
- 3 The maximum rated voltage to earth is 300 V AC.
- 4 The maximum rated voltage ( $I_{nc}$ ) of the output circuits is 125 A; the maximum rated voltage of the switching device combination ( $I_{nA}$ ) is 250 A. The FWB distribution board is intended for a maximum infeed current of 125 A (rated voltage  $I_{nA}$  max. 125 A).
- 5 The switching device combination is intended for distributing the electricity, but may also contain controllers and signalling devices.
- 6 The switching device combination is closed and fixed in place.
- 7 The switching device combination can be intended for internal and outdoors installation (wall distribution board: indoor installation). The minimum protection class of a DBO for internal installation must be IP2XC. The minimum IK code for mechanical impact must be IK05 for internal installations. The minimum pollution degree is 2.

For further information refer to EN 61439 Part 1 and Part 3.

## **Protection class / IP protection level**

The protection class is stated for all switching device combinations with the IP code in accordance with IEC 60529 and proven in accordance with EN 61439 regarding

- protection against the touching of active components and penetration of closed foreign objects,
- the penetration of water.

The protection class is important for the protection against electric shock. The protection class applies to sheaths, covers and enclosures. The protection class is stated with two IP protection level index numbers and an optional additional letter.

- The first index number (0-6) indicates the protection against the penetration of closed objects and the touching of dangerous components.
- The second index number (0-8) indicates the protection against the penetration of water.
- The additional letter (A-D) indicates the protection against the touching of dangerous components.

**Pollution degree**

The pollution degree defines the environmental conditions of a switching device. If the switching device is installed in a enclosure, the environmental conditions inside the enclosure apply.

The pollution degree in accordance with EN 61439 refers to the environmental conditions intended for the switching device combination.

The four defined degrees of contamination serve to assess the clearances and creepage distances in the microenvironment. Pollution degree 3 is defined as a conductive contamination or a dry, non-conductive contamination which could become conductive if in contact with dew.

Pollution degree 2 is defined as slight contamination where temporary conductivity due to contact with dew can be expected.

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