

univers FWB manual

Wall-mounting cabinets FWB, FWQ

Degree of protection IP44



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1 About this manual

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

1.1 Aim of this manual

This document has been written for users of the distribution board wall cabinets FWB, FWQ 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

 Signal word
Type and source of the danger! Consequences of ignoring the danger ➤ Measures for preventing the danger


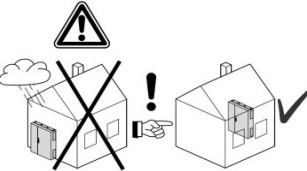
Danger levels in warning signs

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 and FWQ are made for wall installation up to IP44 for residential and special purpose buildings up to 125 A infeed current.

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

With the tested FWB and FWQ 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 and FWQ 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.

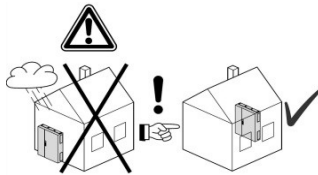


Fig. 1: Indoor installation

By using the FWB and FWQ 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 and FWQ 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 and FWQ 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 and FWQ 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 $f_n = 50$ Hz
- Rated voltage $U_n = 230$ V / 400 V
- Rated surge voltage resistance $U_{imp} = 4$ kV; overvoltage category III
- Rated isolation voltage $U_i = 400$ 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}

$I_{cc} < 10$ 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 ZZ41SF (locknut) or ZZ44F (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, FWQ distribution board range

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

The FWB, FWQ 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



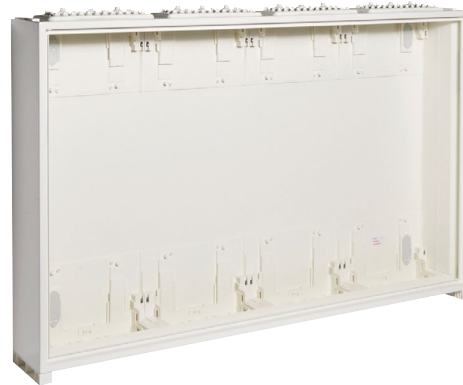
Example: FWB63T1S

Information about the FWB, FWQ distribution board range

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: FWB44D

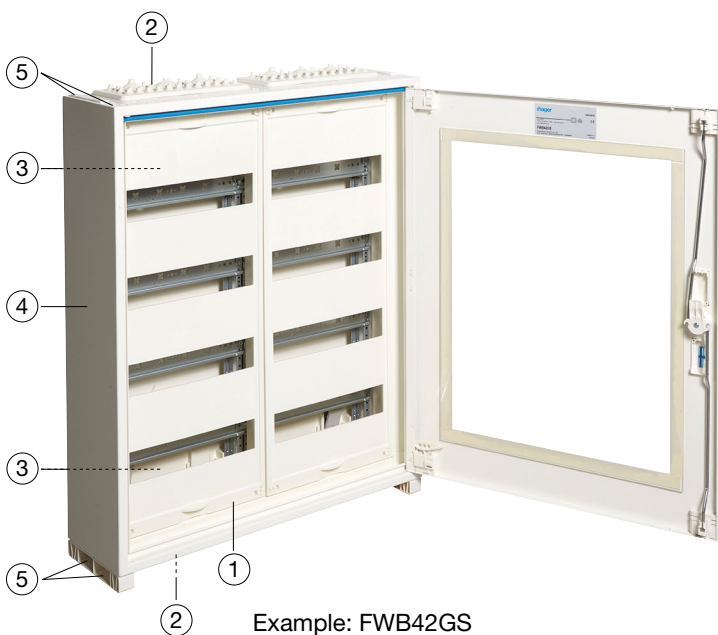


Example: FWQ44D1

4.2 Body

4.2.1 Properties

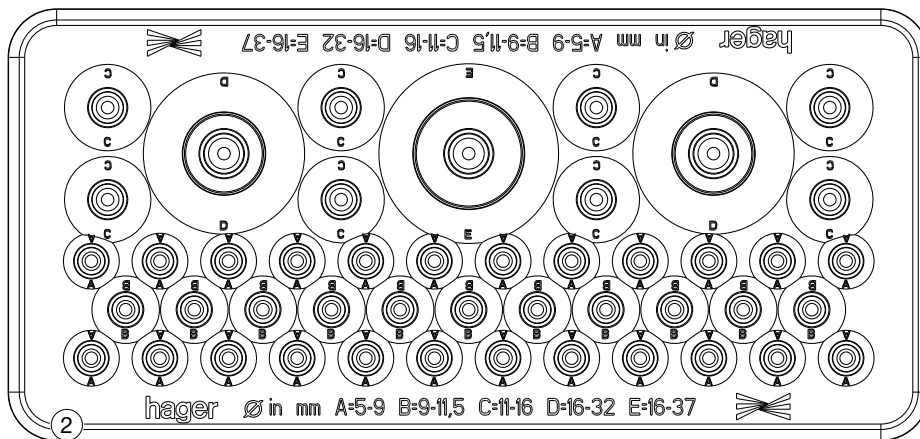
- ① The interior is double insulated with plastic cladding
- ② With two cable routing flanges (top / bottom) per panel
- ③ Two recesses (top / bottom) per panel for feeding cables through the rear panel
- ④ Entirely closed on the outside
- ⑤ With two exterior holes near the edges (top / bottom) for the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



Example: FWB42GS

Two cable routing flanges per panel

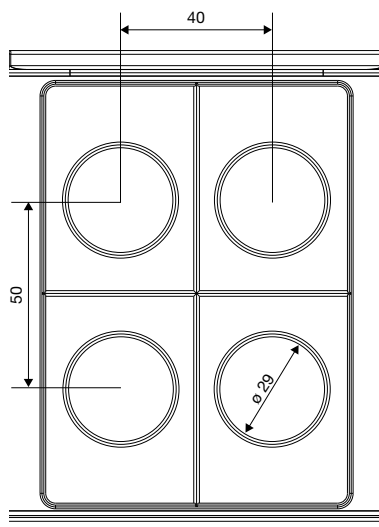
- 2 cable entries per panel (top and bottom), also available as accessory **FZ426**
- Flange at top / bottom made from 2 components with knobs for sticking through
- Internal cable entry surface: 191 x 75 mm
- Prepared for various cable diameters:
 - 24 x Ø5 / 10.5 mm
 - 11 x Ø9 / 11.5 mm
 - 8 x Ø11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

Information about the FWB, FWQ distribution board range

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

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

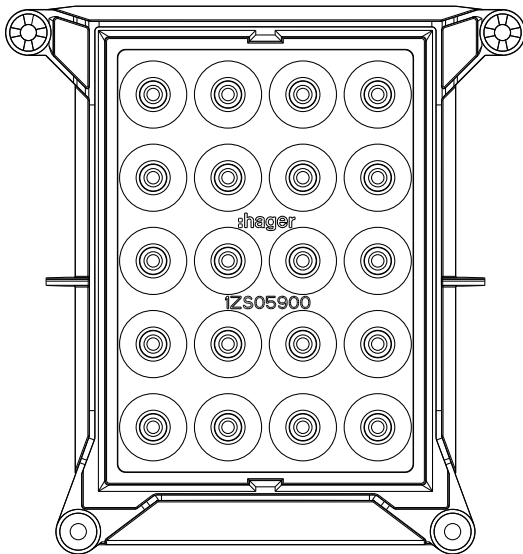
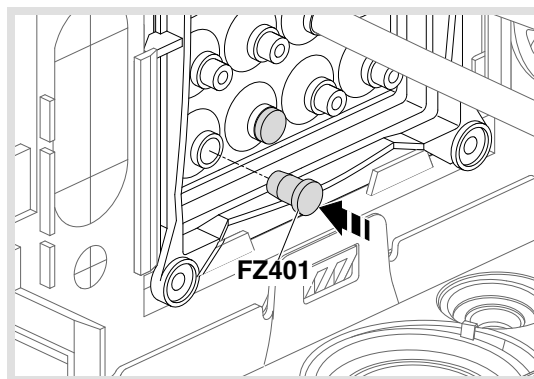
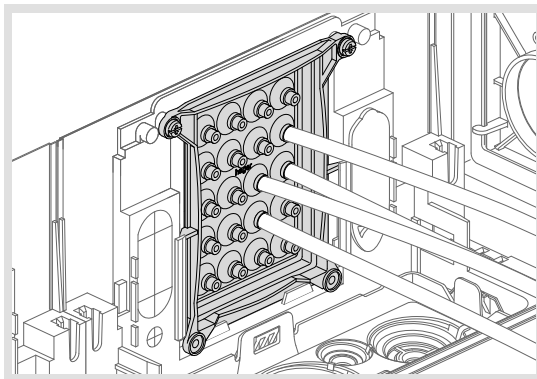


Image of flange FZ428



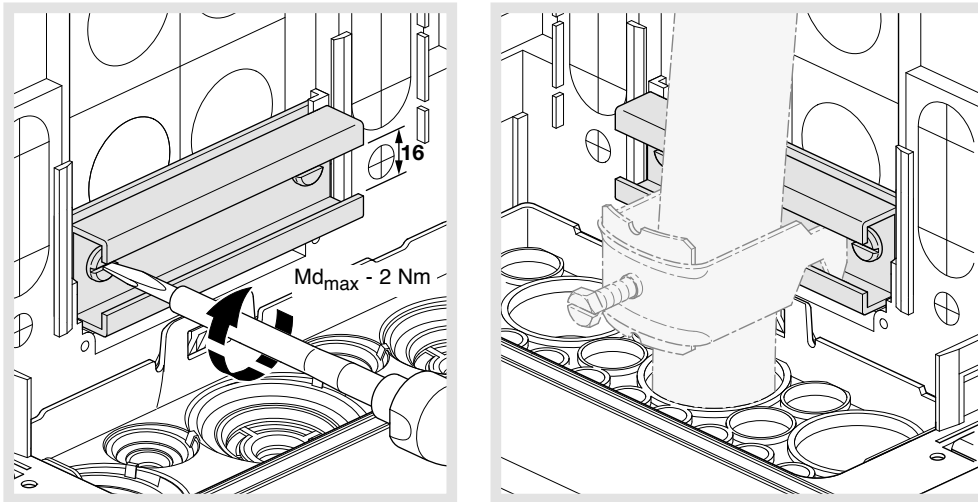
Cabinet with flange FZ428 installed on the plastic bottom part (front view)



Plug set FZ401

Cable strain relief

Large pipes and cables can be optionally fixed to the top and bottom of the FWB / FWQ 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.



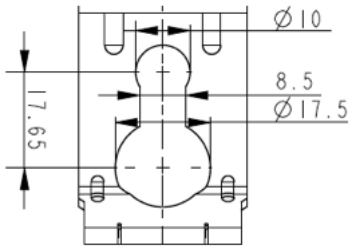
Fixing thick pipes to the plastic bottom part of the cabinet

Information about the FWB, FWQ distribution board range

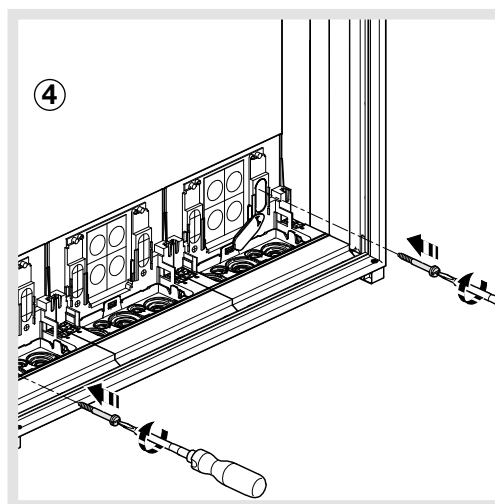
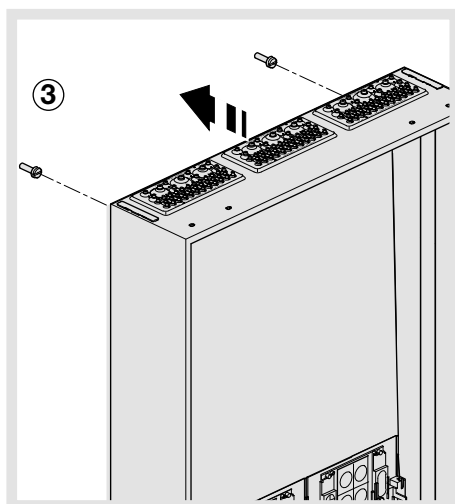
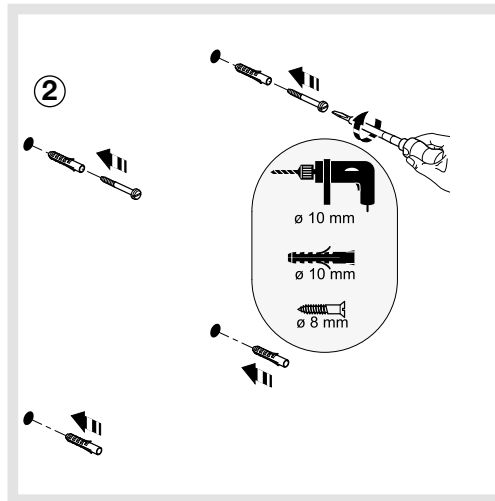
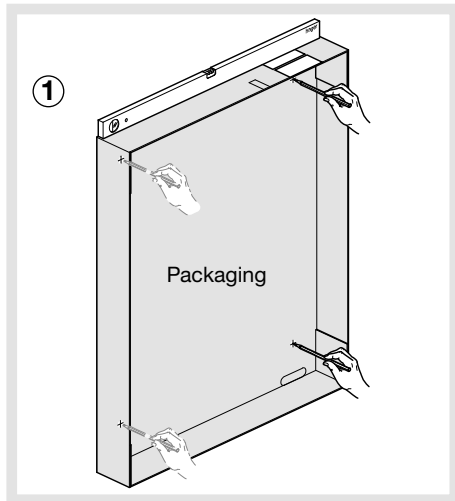
Integrated cabinet mounts

The distribution board is available with two different mounts: **Basic** and **Quickset**.

Basic mount: The **FWB** (B stands for basic) cabinet has four pre-installed brackets made from 2 mm steel for mounting the cabinet. The cabinet is mounted to the wall with 4 screws which are pushed through the top and bottom parts of the cabinet and these 4 brackets. The two top brackets have a key hole. Once the four wall plugs have been installed in the wall, the two top fixing screws can be installed first. The cabinet can then be mounted. The two bottom screws can then be pushed into the wall plug from the front.



Key hole dimensions, basic mount

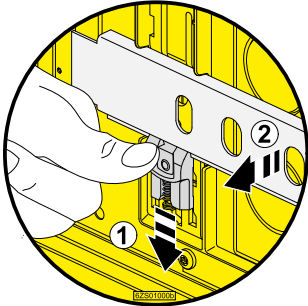


Installation sequence, basic mount

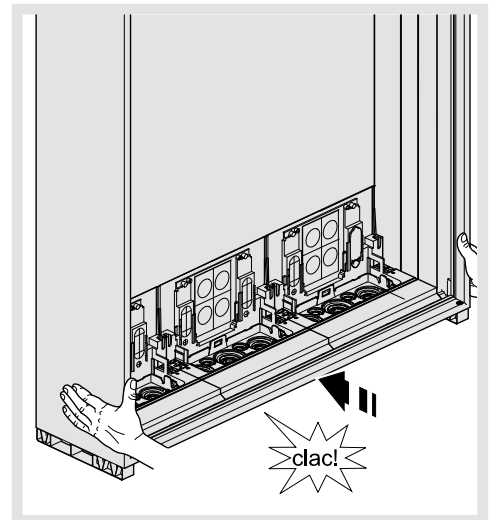
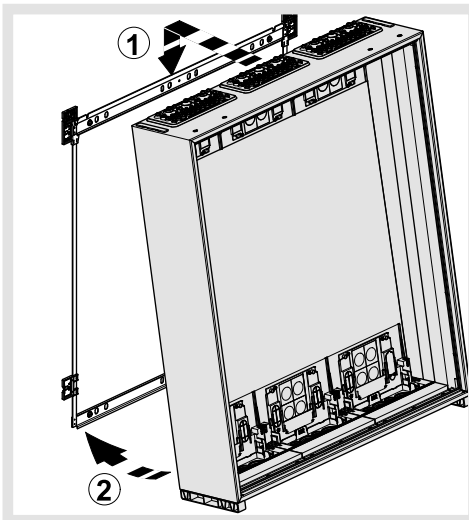
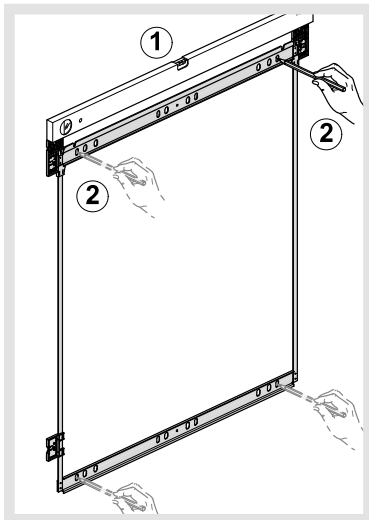
1. Draw markings in the packaging onto wall
2. Drill holes and insert wall plugs, then screw the 2 top screws into the wall plugs
3. Mount the cabinet
4. Screw the two bottom screws through the cabinet and into the wall plugs

Quickset mounts: In the **FWQ** (Q stands for quickset) cabinet, four mounts made from 2 mm steel are pre-installed as well as a steel fixation frame at the rear of the cabinet. The steel fixation frame can be removed from the outside (1), mounted to the wall and aligned with a spirit level, then fixed with standard screws and wall plugs (2). The cabinet can then be inserted into the steel fixation frame.

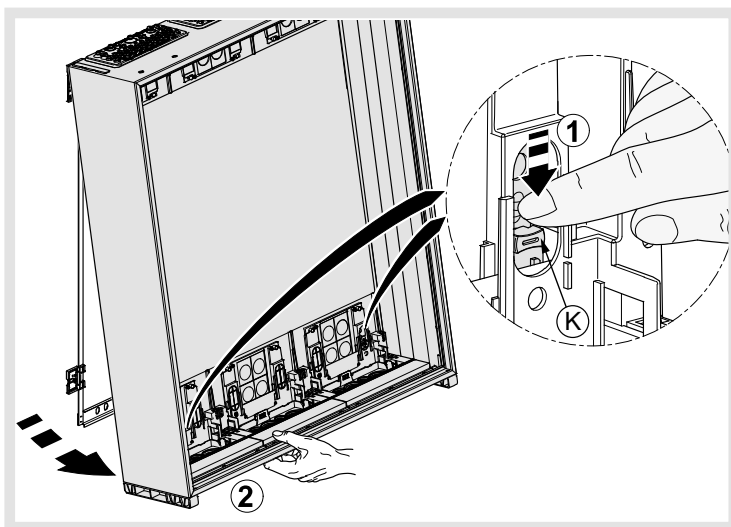
If the bottom cabinet bracket on the steel fixation frame has a certain amount of play, the two operating elements (K) on the bottom brackets can be quickly screwed tighter, either manually or by using a small screw driver. The K element (3) is operated for removing the cabinet.



1. Removing the steel fixation frame



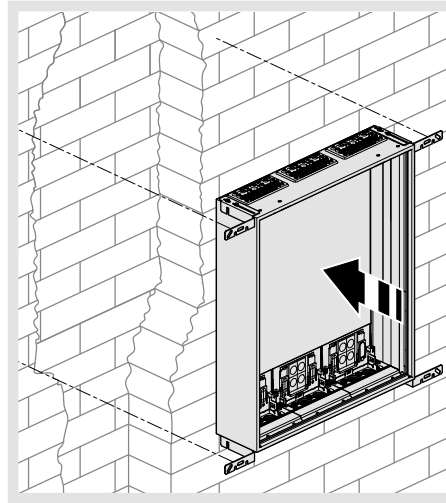
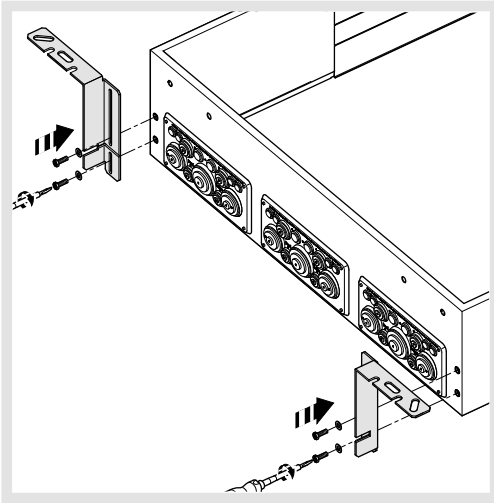
2. Installation sequence with quickset bracket



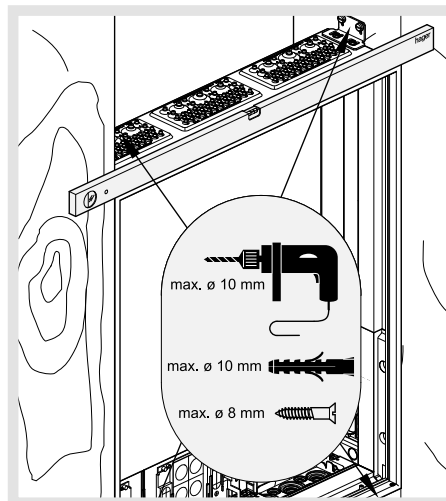
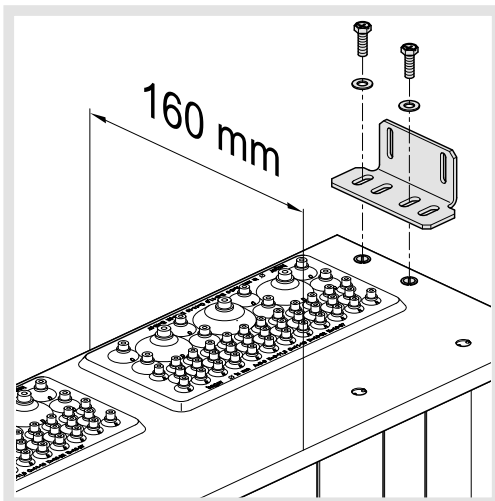
3. Removal quickset bracket (operating the K element)

Flush and partially recessed installation

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



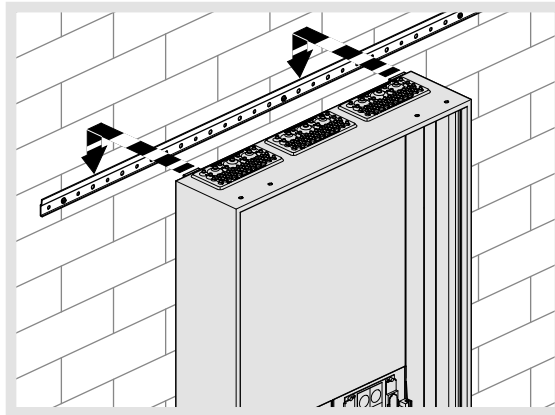
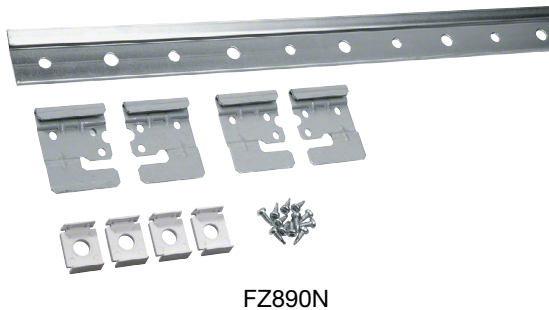
Installation of the FZ900 bracket set for flush and partially recessed installation



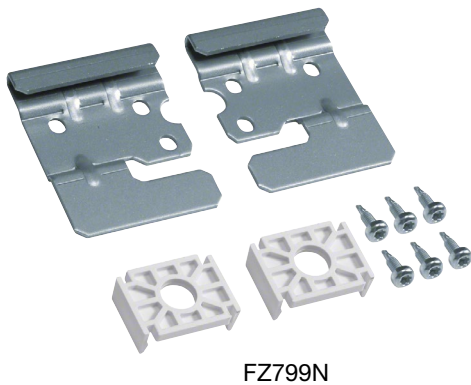
Installation of the FZ900H bracket set for flush and partially recessed installation

External wall mounting

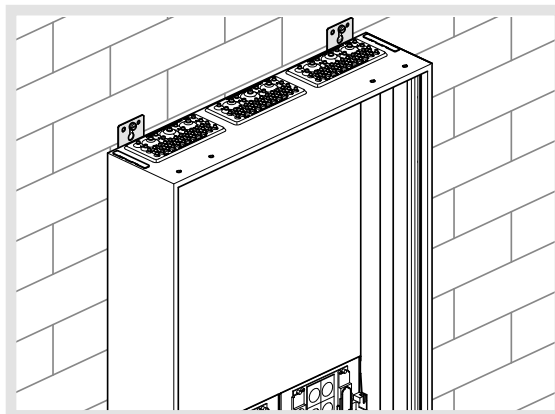
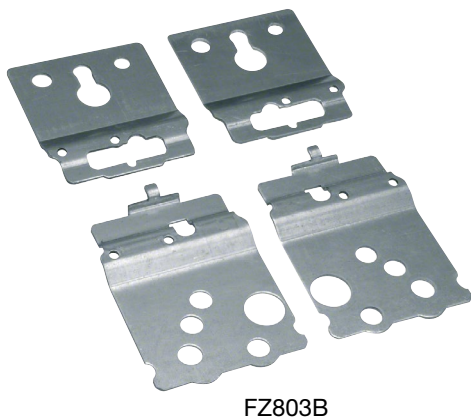
FWB cabinets can be quickly and easily mounted to the wall with accessories **FZ890N** and **FZ803B**. The **FZ890N** set consists of a 2100 mm long rail and 4 brackets for mounting two FBW cabinets next to each other.



Two additional brackets can be ordered using reference no. **FZ799N**, e.g. for a third cabinet.



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



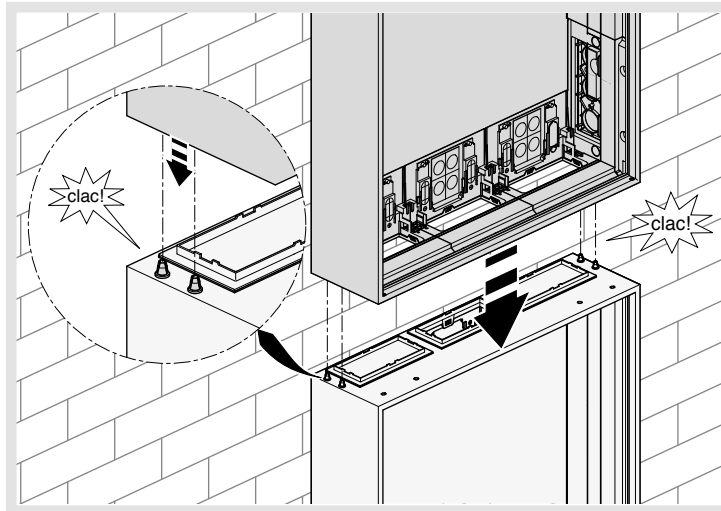
Information about the FWB, FWQ distribution board range

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.



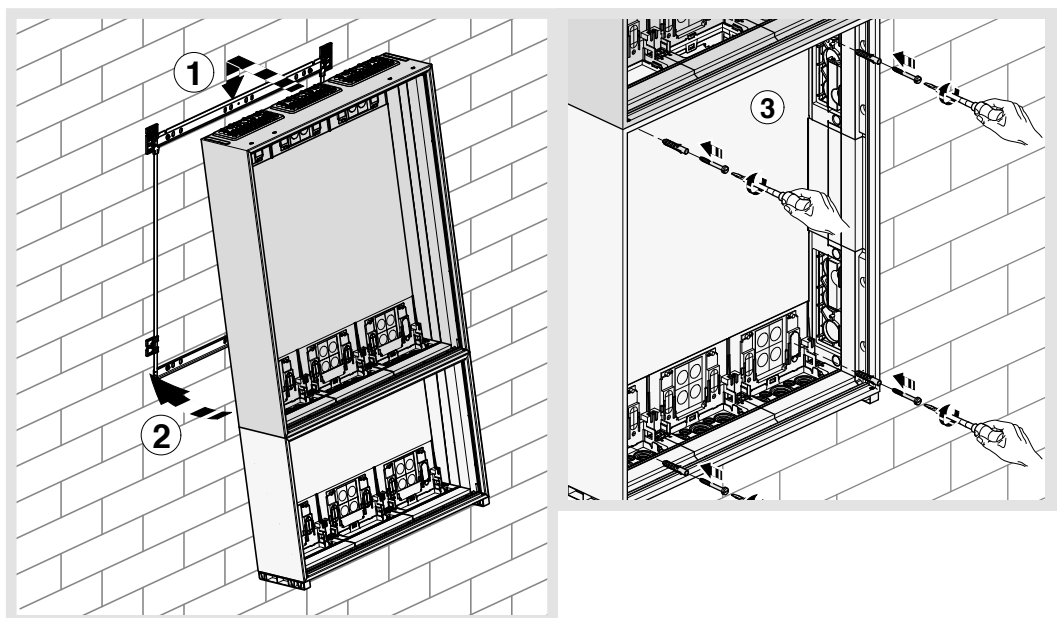
FZ443B



FWQ distribution boards can be mounted above each other with the FZ44xS accessories set. The third digit in the reference stands for the field width; **FZ443S** is suitable for connecting 3-field cabinets (800 mm width) above each other.



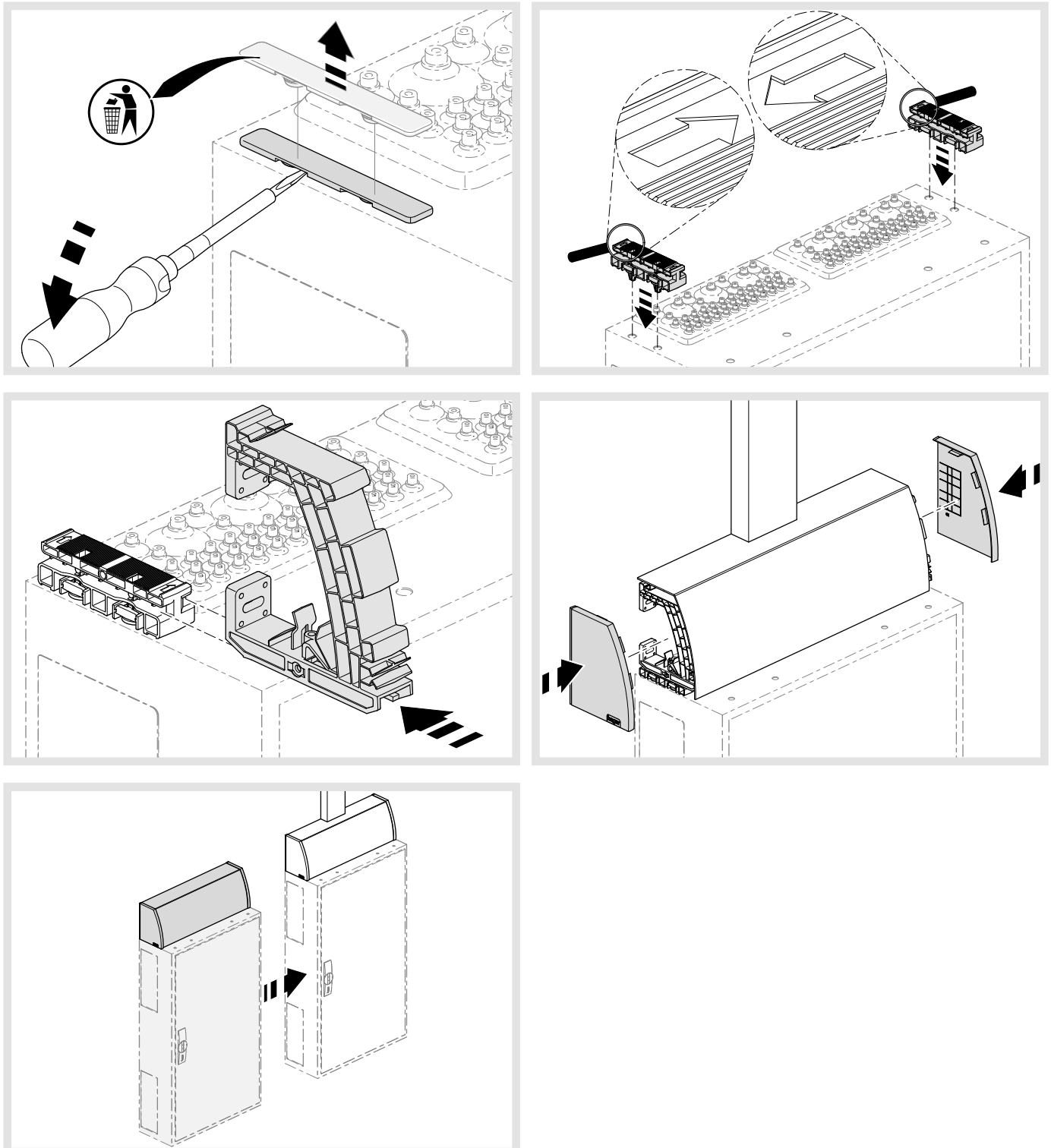
FZ443S



	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
Cabinet to cabinet connector for quickset cabinet FWQ	FZ441S	FZ442S	FZ443S	FZ444S

Cable storage box

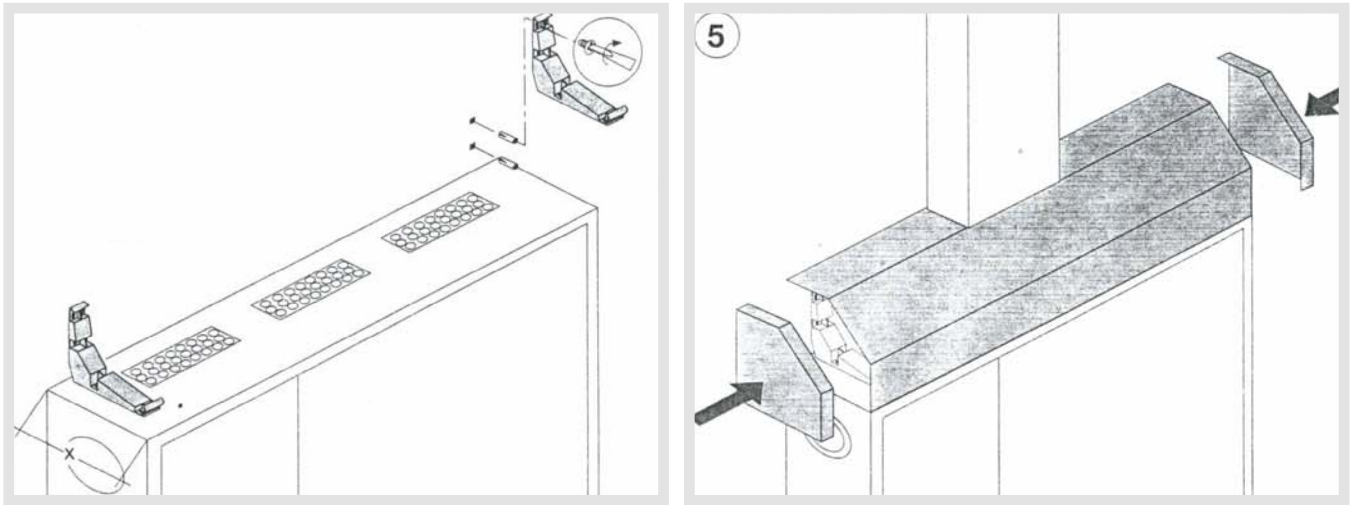
Wall distribution boards FWB / FWQ can be expanded with the cable storage boxes **FZ441N** to **FZ444N**. These boxes have a depth and height of 135 x 176 mm and can be easily locked in above the cabinet. The third digit in the reference stands for the panel width; FZ442N is suitable for a 2-panel cabinet (550 mm width).



Installation of the FZ442N cable storage box

Information about the FWB, FWQ distribution board range

The cable storage boxes **FZ441** to **FZ444** can also be installed above the cabinet, but without locking function. The box is mounted directly to the wall. The height and depth are 190 x 150 mm.



Installation of the FZ443 cable storage box

	Cabinet width			
	Width 1 (300 mm)	Width 2 (550 mm)	Width 3 (800 mm)	Width 4 (1050 mm)
Lockable cable storage box	FZ441N	FZ442N	FZ443N	FZ444N
Screwable cable storage box	FZ441	FZ442	FZ443	FZ444

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
500 mm	31	32	33	34
650 mm	41	42	43	44
800 mm	51	52	53	54
950 mm	61	62	63	64
1100 mm	71	72	73	74
1250 mm	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
D	No	(Empty)	No	(Empty)	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
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)

Information about the FWB, FWQ distribution board range

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

- Cabinet type: **FWQ...** (Quickset fixation)
- Cabinet dimensions (height and width): **FWQ32...**
- Cabinet configuration: **FWQ32P**

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
D1	No	(Empty)	No	(Empty)	No	(Empty)	(Empty)
N	Yes	Distribution panel	No	(Prepared for DIN rail terminals)	Yes	Plain	FZ598N
N1	Yes	Distribution panel	No	(Prepared for DIN rail terminals)	No	(Empty)	(Empty)
P	Yes	Distribution panel	Yes	PE QuickConnect	Yes	Plain	FZ598N
P1	Yes	Distribution panel	Yes	PE QuickConnect	No	(Empty)	(Empty)

The various cabinet dimensions are listed in the following chapter "Cabinet references overview".

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	FWB33A	FWB34A
	FWB31A	FWB32A	FWB33D	FWB34D
	FWB31D	FWB32D	FWB33D	FWB34D
	FWB31D1	FWB32D1	FWB33D1	FWB34D1
	FWB31GS	FWB32GS	FWB33GS	FWB34GS
	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	FWB44A
	-	FWB42CSDB	-	-
	FWB41D	FWB42D	FWB43D	FWB44D
	FWB41D1	FWB42D1	FWB43D1	FWB44D1
	FWB41GS	FWB42GS	FWB43GS	FWB44GS
	-	FWB42K1	-	-
	-	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	FWB54A
	FWB51D	FWB52D	FWB53D	FWB54D
	FWB51D1	FWB52D1	FWB53D1	FWB54D1
	FWB51GS	FWB52GS	FWB53GS	FWB54GS
	-	FWB52K1	FWB53K1	-
	-	FWB52K5	FWB53K5	-
	-	FWB52M2	-	-
	-	FWB52N	FWB53N	-
	-	FWB52N3	FWB53N3	-
	FWB51P	FWB52P	FWB53P	FWB54P
	-	FWB52P2	FWB53P2	-
	FWB51S	FWB52S	FWB53S	FWB54S
	FWB51T1S	FWB52T1S	FWB53T1S	FWB54T1S

Information about the FWB, FWQ distribution board range

Size 6	Cabinet width			
	300 mm	550 mm	750 mm	1050 mm
Cabinet height 950 mm	FWB61	FWB62	FWB63	FWB64
	FWB61A	FWB62A	FWB63A	FWB64A
	FWB61D	FWB62D	FWB63D	FWB64D
	FWB61D1	FWB62D1	FWB63D1	FWB64D1
	FWB61GS	FWB62GS	FWB63GS	FWB64GS
	-	FWB62K1	FWB63K1	-
	-	FWB62K5	FWB63K5	-
	-	FWB62M2	-	-
	-	FWB62N	FWB63N	FWB64N
	-	FWB62N3	FWB63N3	FWB64N3
	FWB61P	FWB62P	FWB63P	FWB64P
	-	FWB62P2	-	-
	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
	FWB71D	FWB72D	FWB73D	FWB74D
	FWB71D1	FWB72D1	FWB73D1	FWB74D1
	FWB71GS	FWB72GS	FWB73GS	FWB74GS
	-	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	FWB81D	-	-	-
	FWB81D1	-	-	-
	FWB81S	-	-	-

4.2.3.2 FWQ references

Size 3	Cabinet width			
	300 mm	550 mm	750 mm	1050 mm
Cabinet height 500 mm	FWQ31D1	FWQ32D1	FWQ34D1	FWQ34D1
	FWQ31P	FWQ32P	FWQ34P	FWQ34P
	FWQ31P1	FWQ32P1	FWQ34P1	FWQ34P1

Size 4	Cabinet width			
	300 mm	550 mm	750 mm	1050 mm
Cabinet height 650 mm	FWQ41D1	FWQ42D1	FWQ43D1	FWQ44D1
	FWQ41P	FWQ42P	FWQ43P	FWQ44P
	FWQ41P1	FWQ42P1	FWQ43P1	FWQ44P1

Size 5	Cabinet width			
	300 mm	550 mm	750 mm	1050 mm
Cabinet height 800 mm	FWQ51D1	FWQ52D1	FWQ53D1	FWQ54D1
	-	FWQ52N	FWQ53N	-
	-	FWQ52N1	FWQ53N1	-
	FWQ51P	FWQ52P	FWQ53P	FWQ54P
	FWQ51P1	FWQ52P1	FWQ53P1	FWQ54P1

Size 6	Cabinet width			
	300 mm	550 mm	750 mm	1050 mm
Cabinet height 950 mm	FWQ61D1	FWQ62D1	FWQ63D1	FWQ64D1
	-	FWQ62N	FWQ63N	FWQ64N
	-	FWQ62N1	FWQ63N1	FWQ64N1
	FWQ61P	FWQ62P	FWQ63P	FWQ64P
	FWQ61P1	FWQ62P1	FWQ63P1	FWQ64P1

Size 7	Cabinet width			
	300 mm	550 mm	750 mm	1050 mm
Cabinet height 1100 mm	FWQ71D1	FWQ72D1	FWQ73D1	FWQ74D1
	-	FWQ72N	FWQ73N	FWQ74N
	-	FWQ72N1	FWQ73N1	FWQ74N1
	FWQ71P	FWQ72P	FWQ73P	FWQ74P
	FWQ71P1	FWQ72P1	FWQ73P1	FWQ74P1

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

Internal system:

Distribution panel(s):

- Cover 250 mm width with 12 module slot width. With 2 covers above each other for size 7
- Distance between the DIN rails: 125 mm
- Sizes 3, 4: per panel, with brass terminals KM22A
- Sizes 5, 6, 7: per panel, with brass terminals KM25A

Door:

- **plain**
- Steel
- **univers door closing**
- Right door with reinforcement bar for size 5 and higher

Included in scope of delivery:

- DIN A4 – labelling strip with type label
- DIN A4 – circuit table
- FWB – installation instructions



Example: KM22A



Example: KM25A

4.2.4.2 FWBxxA

Reference
FWB31A
FWB32A
FWB33A
FWB34A
FWB41A
FWB42A
FWB43A
FWB44A
FWB51A
FWB52A
FWB53A
FWB54A
FWB61A
FWB62A
FWB63A
FWB64A
FWB71A
FWB72A
FWB73A
FWB74A



Example: FWB42A

Protection class IP44, impact protection IK09

<p>Internal system:</p> <p>Distribution panel(s):</p> <ul style="list-style-type: none"> - 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
<p>Without QuickConnect terminals and without QuickConnect carrier</p>
<p>Door:</p> <ul style="list-style-type: none"> - Plain - Steel - univers door closing - Right door with reinforcement bar for size 5 and higher
<p>Included in scope of delivery:</p> <ul style="list-style-type: none"> - DIN A4 – labelling strip with type label - DIN A4 – circuit table - FWB – installation instructions

Information about the FWB, FWQ distribution board range

4.2.4.3 FWBxxCSDB

Reference
FWB42CSDB



Image: FWB42CSDB

Protection class IP30, impact protection IK09

Internal system:

**With internal system for 2x19 + 4x12 PLE + 1x main switch
(Disjoncteur de Branchement)**

Distance between the DIN rails: 125 mm top
150 mm bottom

QuickConnect connect configuration

2 x KN22E

**Door:**

- **Plain**
- Steel
- **univers door closing**
- Right door with reinforcement bar for size 5 and higher
- Without blue seal and without door poles (IP30)

Included in scope of delivery:

- DIN A4 labelling strip with type label
- DIN A4 circuit table
- FWB installation instructions

4.2.4.4 FWBxxD

Reference
FWB31D
FWB32D
FWB33D
FWB34D
FWB41D
FWB42D
FWB43D
FWB44D
FWB51D
FWB52D
FWB53D
FWB54D
FWB61D
FWB62D
FWB63D
FWB64D
FWB71D
FWB72D
FWB73D
FWB74D
FWB81D



Example: FWB41D

Protection class IP44, impact protection IK09

Without internal system
Door: <ul style="list-style-type: none"> - Plain - Steel - univers door closing - Right door with reinforcement bar for size 5 and higher
Included in scope of delivery: <ul style="list-style-type: none"> - DIN A4 – labelling strip with type label - DIN A4 – circuit table - FWB – installation instructions

Information about the FWB, FWQ distribution board range

4.2.4.5 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

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





4.2.4.6 FWBxxGS

Reference
FWB32GS
FWB42GS
FWB52GS
FWB62GS
FWB72GS



Example: FWB62GS

Protection class IP44, impact protection IK07

Internal system:			
Distribution panel(s):			
- 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 
Door:			
- Plain			
- Steel frame			
- Transparent plastic plate			
- univers door closing			
- Right door with reinforcement bar for size 5 and higher			
Included in scope of delivery:			
- DIN A4 – labelling strip with type label			
- FWB – installation instructions			
- QuickConnect installation instructions			

Information about the FWB, FWQ distribution board range





4.2.4.7 FWBxxK1

Reference
FWB32K1
FWB42K1
FWB52K1
FWB53K1
FWB62K1
FWB63K1
FWB72K1



Example: FWB42K1

Protection class IP31, impact protection IK07

Internal system:	
Distribution panel:	
- 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	
Multimedia panel:	
- 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 3:	2 x KN10N  + KN18E 
Height 4, 5, 6 and 7:	2 x KN10N  + KN22E 
Door:	
- Slotted	
- Steel	
- univers door closing	
- Right door with reinforcement bar for size 5 and higher	
Included in scope of delivery:	
- 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	


4.2.4.8 FWBxxK5

Reference
FWB42K5
FWB52K5
FWB53K5
FWB62K5
FWB63K5
FWB72K5



Example: FWB53K5

Protection class IP44, impact protection IK09

Internal system;	
Distribution panel:	
- Covers 250 mm width with 12 module slot width. With 2 covers above each other for size 7	Multimedia panel:
- 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 
Door:	
- Plain	
- Steel	
- univers door closing	
- Right door with reinforcement bar for size 5 and higher	
Included in scope of delivery:	
- 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	

Information about the FWB, FWQ distribution board range

4.2.4.9 FWBxxM2

Reference
FWB32M2
FWB42M2
FWB52M2
FWB62M2
FWB72M2












Example: FWB52M2

Protection class IP44, impact protection IK09

Internal system:**Distribution panel:**

- Covers 500 mm width, **with 26 module slot width**. With 2 covers above each other, respectively 3 by size 7
- Continuous DIN rails (500 mm width)
- Distance between the DIN rails: 125 mm

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 

Door:

- **Plain**
- Steel
- **univers door closing**
- Right door with reinforcement bar for size 5 and higher

Included in scope of delivery:

- DIN A4 – labelling strip with type label
- DIN A4 – circuit table
- FWB – installation instructions
- QuickConnect installation instructions

4.2.4.10 FWBxxN

Reference
FWB52N
FWB53N
FWB62N
FWB63N
FWB64N
FWB72N
FWB73N
FWB74N



Example: FWB62N

Protection class IP44, impact protection IK09

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

Information about the FWB, FWQ distribution board range

4.2.4.11 FWBxxN3

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

Reference
FWB52N3
FWB53N3
FWB62N3
FWB63N3
FWB64N3
FWB72N3
FWB73N3
FWB74N3

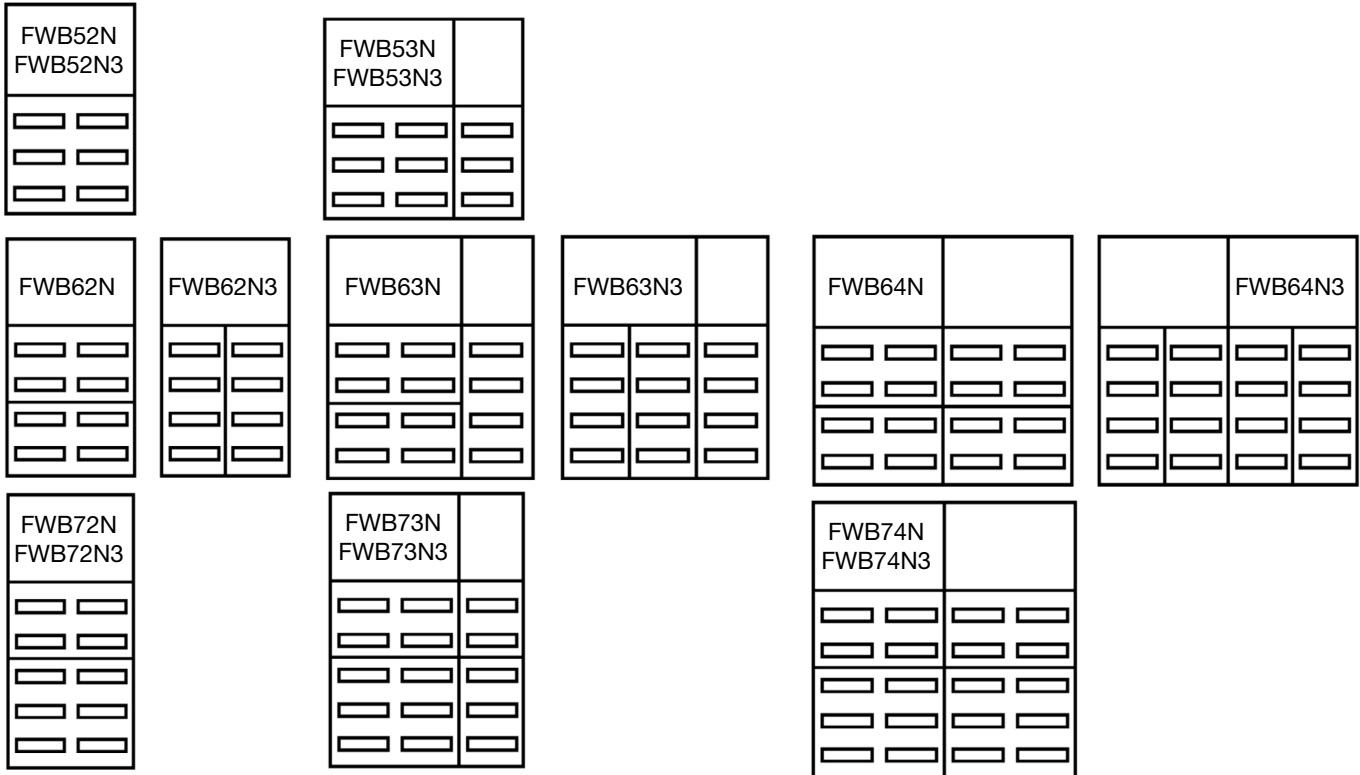


Example: FWB62N3

Protection class IP44, impact protection IK09

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

Cover configurations for FWBxxN and FWBxxN3



The cover configuration for FWQxxN, FWQxxN1 is identical to that for FWBxxN.

Information about the FWB, FWQ distribution board range







4.2.4.12 FWBxxP

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



Example: FWB42P

Protection class IP44, impact protection IK09

Internal system:	
Distribution panel(s):	
- Covers 250 mm width with 12 module slot width	
- Distance between the DIN rails: 125 mm	
QuickConnect configuration (top)	
Height 3:	1 x KN26E 
Height 4:	2 x KN18E 
Height 5:	2 x KN22E 
Height 7:	1 x KN22E  1 x KN26E  + KN99E 
Door:	
- Plain	
- Steel	
- univers door closing	
- Right door with reinforcement bar for size 5 and higher	
Included in scope of delivery:	
- DIN A4 – labelling strip with type label	
- DIN A4 – circuit table	
- FWB – installation instructions	
- QuickConnect installation instructions	


4.2.4.13 FWBxxP2

Reference
FWB42P2
FWB43P2
FWB52P2
FWB53P2
FWB62P2

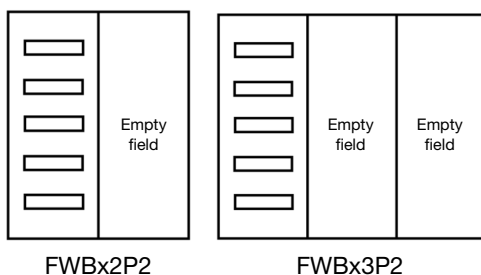


Example: FWB43P2

Protection class IP44, impact protection IK09

Internal system:	
Distribution panel(s):	
<ul style="list-style-type: none"> - 1 panel is always installed on the left, the other panels are empty - Covers 250 mm width with 12 module slot width - Distance between the DIN rails: 125 mm 	
Pre-installed vertical separation	
QuickConnect connect configuration (at the top of each distribution panel)	
Height 4, 5, 6 and 7:	1 x KN22E 
Door:	
<ul style="list-style-type: none"> - Plain - Steel - univers door closing - Right door with reinforcement bar for size 5 and higher 	
Included in scope of delivery:	
<ul style="list-style-type: none"> - DIN A4 labelling strip with type label - DIN A4 circuit table - FWB installation instructions - QuickConnect installation instructions - Document pocket FZ794 	

panel configuration for FWBxxP2:



Information about the FWB, FWQ distribution board range

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

Internal system:**Distribution panel(s):**

- 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	

Door:

- **Plain**
- Steel
- **univers door closing**
- Right door with reinforcement bar for size 5 and higher

Included in scope of delivery:

- DIN A4 labelling strip with type label
- DIN A4 circuit table
- FWB installation instructions
- QuickConnect installation instructions





4.2.4.15 FWBxxT1S

Reference
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)

Internal system:			
Distribution panel(s):			
-	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 
Without door, without blue seal			
Included in scope of delivery:			
-	DIN A4 labelling strip with type label		
-	DIN A4 circuit table		
-	FWB installation instructions		
-	QuickConnect installation instructions		

Information about the FWB, FWQ distribution board range

4.2.4.16 FWQxxD1

Reference
FWQ31D1
FWQ32D1
FWQ33D1
FWQ34D1
FWQ41D1
FWQ42D1
FWQ43D1
FWQ44D1
FWQ51D1
FWQ52D1
FWQ53D1
FWQ54D1
FWQ61D1
FWQ62D1
FWQ63D1
FWQ64D1
FWQ71D1
FWQ72D1
FWQ73D1
FWQ74D1



Example: FWQ53D1

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

Without internal system
Without door
Included in scope of delivery: <ul style="list-style-type: none"> - DIN A4 labelling strip with type label - FWQ installation instructions

4.2.4.17 FWQxxN

Reference
FWQ52N
FWQ53N
FWQ62N
FWQ63N
FWQ64N
FWQ72N
FWQ73N
FWQ74N



Example: FWQ74N

Protection class IP44, impact protection IK09

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

Information about the FWB, FWQ distribution board range

4.2.4.18 FWQxxN1

Reference
FWQ52N1
FWQ53N1
FWQ62N1
FWQ63N1
FWQ64N1
FWQ72N1
FWQ73N1
FWQ74N1



Example: FWQ63N1

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

<p>Internal system:</p> <p>2 top rows:</p> <ul style="list-style-type: none"> - For DIN rail terminals - Plain covers, 15 mm depth - Insulated DIN rails, 15 mm depth - Distance between the DIN rails: 150 mm
<p>Distribution panel(s):</p> <ul style="list-style-type: none"> - Covers with 12 module slot width. Cover configuration, see FWBxxN, page 39 - Distance between the DIN rails: 150 mm
Without QuickConnect terminals and without QuickConnect carrier
Without door, without blue seal
<p>Included in scope of delivery:</p> <ul style="list-style-type: none"> - DIN A4 – labelling strip with type label - DIN A4 – circuit table - FWQ – installation instructions







4.2.4.19 FWQxxP

Reference
FWQ31P
FWQ32P
FWQ33P
FWQ34P
FWQ41P
FWQ42P
FWQ43P
FWQ44P
FWQ51P
FWQ52P
FWQ53P
FWQ54P
FWQ61P
FWQ62P
FWQ63P
FWQ64P
FWQ71P
FWQ72P
FWQ73P
FWQ74P



Example: FWQ42P

Protection class IP44, impact protection IK09

Internal system:	
Distribution panel(s):	
- 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 configuration (top)	
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 
Door:	
- Plain	
- Steel	
- univers door closing	
- Right door with reinforcement bar for size 5 and higher	
Included in scope of delivery:	
- DIN A4 – labelling strip with type label	
- DIN A4 – circuit table	
- FWQ – installation instructions	
- QuickConnect installation instructions	

Information about the FWB, FWQ distribution board range

4.2.4.20 FWQxxP1

Reference
FWQ31P1
FWQ32P1
FWQ33P1
FWQ34P1
FWQ41P1
FWQ42P1
FWQ43P1
FWQ44P1
FWQ51P1
FWQ52P1
FWQ53P1
FWQ54P1
FWQ61P1
FWQ62P1
FWQ63P1
FWQ64P1
FWQ71P1
FWQ72P1
FWQ73P1
FWQ74P1







Example: FWQ42P1

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

Internal system:**Distribution panel(s):**

- 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 configuration (top)

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	

Without door, without blue seal**Included in scope of delivery:**

- DIN A4 – labelling strip with type label
- DIN A4 – circuit table
- FWQ – installation instructions
- QuickConnect installation instructions

5 Doors

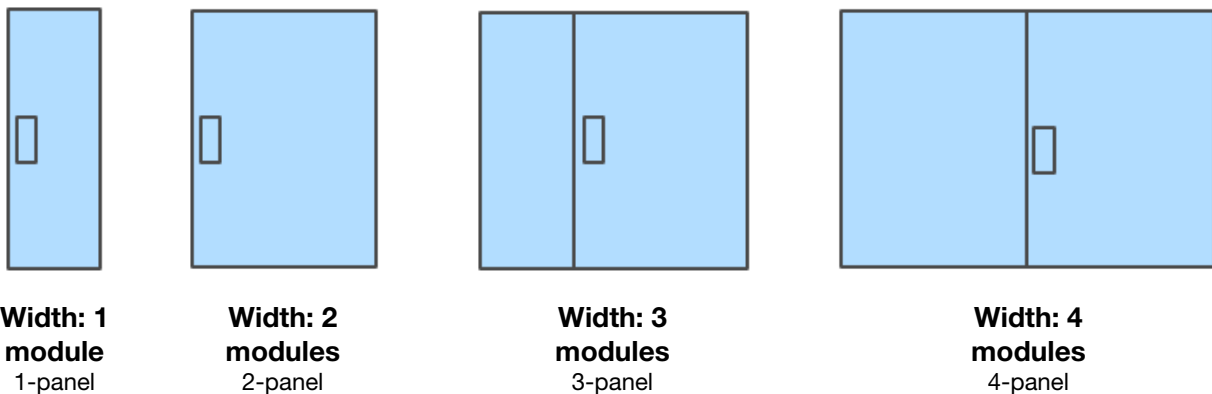
5.1 Properties

- 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

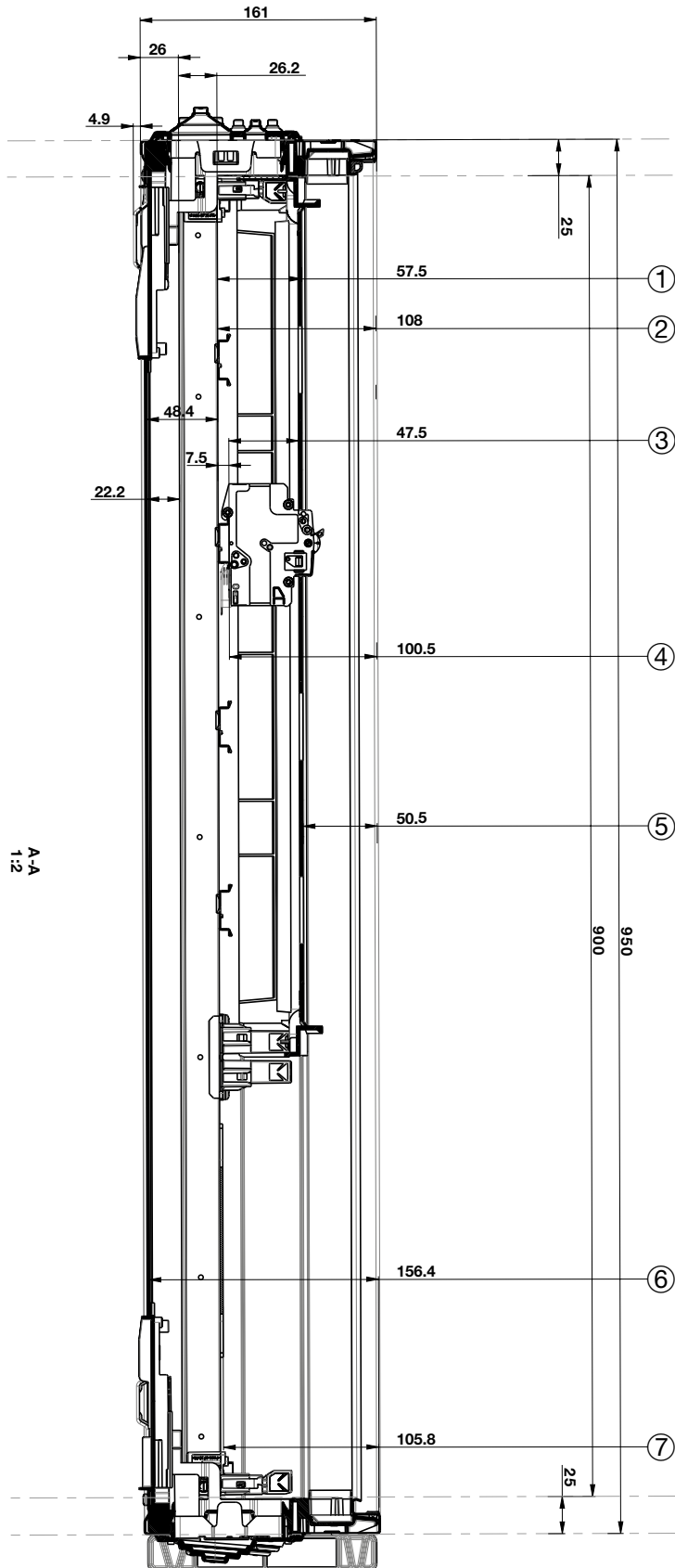
- Door closing latch can be sealed as standard and retrofitted with a key or special lock
- FWB-, FWQ doors are supplied with **FZ598N** door plate as standard (univers door closing)

- 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 and FWQ cabinets 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
N	Plain or transparent door IP44	FZ598N
NM	Slotted multimedia door IP3X	FZ598N
NM2	Plain multimedia door IP44	FZ598N
NV, NV1	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	FZ004NV	FZ002NV1
4 (650 mm)	-	FZ005NV1	-	FZ006NV1	FZ007NV	FZ006NV1	FZ008NV	FZ006NV1
5 (800 mm)	-	FZ009NV1	-	FZ010NV1	FZ011NV	FZ010NV1	FZ012NV	FZ010NV1
6 (950 mm)	-	FZ013NV1	-	FZ014NV1	FZ015NV	FZ014NV1	FZ016NV	FZ014NV1
7 (1100 mm)	-	FZ021NV1	-	FZ022NV1	FZ023NV	FZ022NV1	FZ024NV	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)	-	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	-	-	-	-	-	-

Multimedia door, max. IP3X, univers door plate

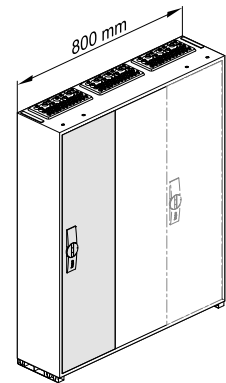
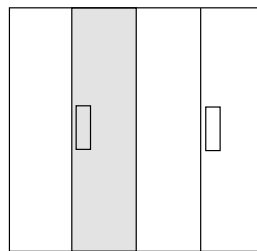
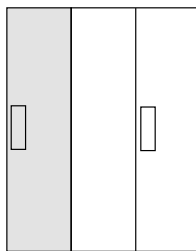
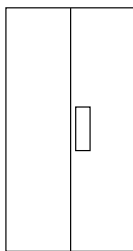
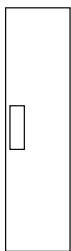
Height	Width 1 (300 mm)		Width 2 (550 mm)		Width 3 (800 mm)		Width 4 (1050 mm)	
	Left door	Right door	Left door	Right door	Left door	Right door	Left door	Right door
3 (500 mm)	-	-	-	FZ002NM	-	FZ002NM	-	FZ002NM
4 (650 mm)	-	FZ005NM	-	FZ006NM	FZ007NM	FZ006NM	-	FZ006NM
5 (800 mm)	-	FZ009NM	-	FZ010NM	FZ011NM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

Plain multimedia 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)	-	-	-	FZ002NM2	-	FZ002NM2	-	FZ002NM2
4 (650 mm)	-	-	-	FZ006NM2	-	FZ006NM2	-	FZ006NM2
5 (800 mm)	-	-	-	FZ010NM2	-	FZ010NM2	-	FZ010NM2
6 (950 mm)	-	-	-	FZ014NM2	-	FZ014NM2	-	FZ014NM2
7 (1100 mm)	-	FZ021NM2	-	FZ022NM2	-	FZ022NM2	-	FZ022NM2
8 (1250 mm)	-	FZ026NM2	-	-	-	-	-	-

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

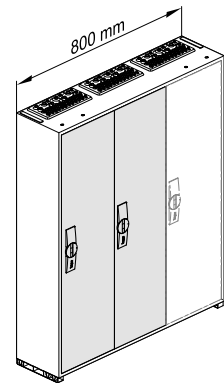
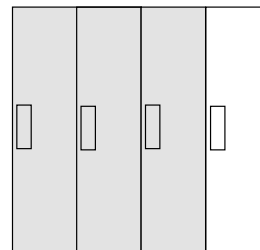
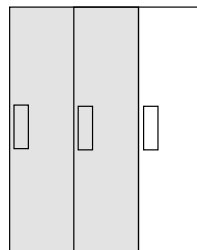
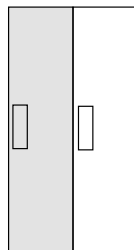
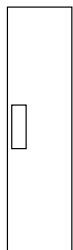
Height	Width 1 (300 mm)		Width 2 (550 mm)		Width 3 (800 mm)		Width 4 (1050 mm)	
	Left door	Right door	Left door	Right door	Left door	Right door	Left door	Right door
3 (500 mm)	-	FZ001N	FZ003N	FZ001N	-	-	-	-
4 (650 mm)	-	FZ005N	FZ007N	FZ005N	-	-	-	-
5 (800 mm)	-	FZ009N	FZ011N	FZ009N	-	-	-	-
6 (950 mm)	-	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	-	-	-	-	-	-



Doors

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, FWQ 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): **FZ006F1**
- Labelling for the door type: **FZ006F1**

Reference ending	Door type	Door plate
F1	Plain door IP30	FZ598
FM	Slotted multimedia door IP3X	FZ598
FM2	Plain multimedia door IP43	FZ598
NV	Slotted door IP3X	FZ598



Example: FZ010NV slotted door with 90SL door plate

Doors

Plain door, max. IP30, 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)	-	FZ001F1	-	FZ002F1	-	FZ002F1	-	FZ002F1
4 (650 mm)	-	-	-	-	-	-	-	-
5 (800 mm)	-	-	-	-	-	-	-	-
6 (950 mm)	-	-	-	FZ014F1	-	FZ014F1	-	FZ014F1
7 (1100 mm)	-	-	-	FZ022F1	-	FZ022F1	-	FZ022F1
8 (1250 mm)	-	-	-	-	-	-	-	-

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)	-	-	-	-	-	-	-	-
4 (650 mm)	-	FZ005NV	-	FZ006NV	-	FZ006NV	-	FZ006NV
5 (800 mm)	-	FZ009NV	-	FZ010NV	-	FZ010NV	-	FZ010NV
6 (950 mm)	-	FZ013NV	-	FZ014NV	-	FZ014NV	-	FZ014NV
7 (1100 mm)	-	FZ021NV	-	FZ022NV	-	FZ022NV	-	FZ022NV
8 (1250 mm)	-	FZ026NV	-	-	-	-	-	-

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)	-	-	-	FZ002FM	-	FZ002FM	-	FZ002FM
4 (650 mm)	-	FZ005FM	-	FZ006FM	FZ007FM*	FZ006FM	-	FZ006FM
5 (800 mm)	-	FZ009FM	-	FZ010FM	FZ011FM*	FZ010FM	-	FZ010FM
6 (950 mm)	-	FZ013FM	-	FZ014FM	-	FZ014FM	-	FZ014FM
7 (1100 mm)	-	FZ021FM	-	FZ022FM	-	FZ022FM	-	FZ022FM
8 (1250 mm)	-	FZ026FM	-	-	-	-	-	-

* FZ007FM and FZ011FM are left doors. The only difference between them and FZ007NM and FZ011NM is that there is no "Labelling system circuit tables" DIN A4 sheet.

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)	-	-	-	FZ014FM2	-	FZ014FM2	-	FZ014FM2
7 (1100 mm)	-	FZ021FM2	-	FZ022FM2	-	FZ022FM2	-	FZ022FM2
8 (1250 mm)	-	FZ026FM2	-	-	-	-	-	-

5.5 Flush-mounting frame

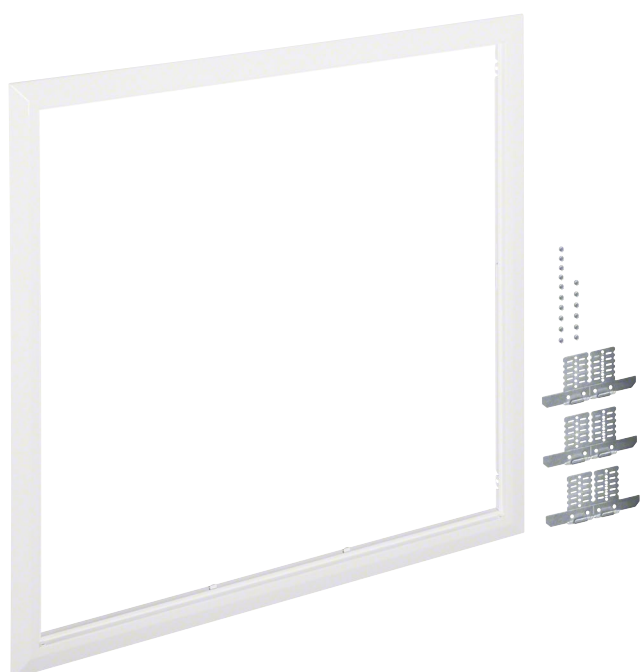
5.5.1 properties

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 FZ0xxB and FZxxB.

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

- The univers accessory code: **FZ...**
- The enclosure dimensions (height): **FZ014B** or **FZ42B**
- The enclosure dimensions (width): **FZ014B** or **FZ42B**
- The frame labelling: **FZ42B**



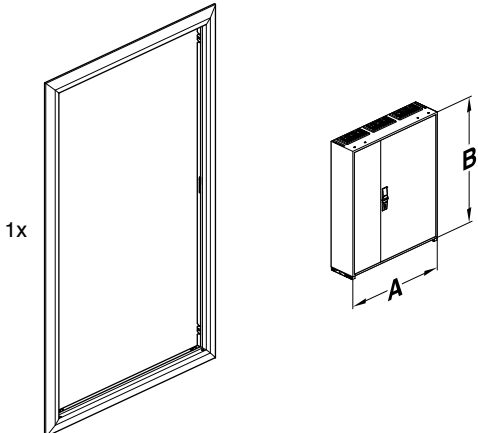
Example: FZ13B frame without door for FWB53...

5.5.2 Flush-mounting frame references overview

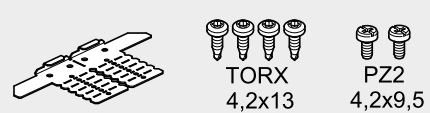
Cabinet height	Cabinet width			
	1 (300 mm)	2 (550 mm)	3 (750 mm)	4 (1050 mm)
3 (500 mm)	FZ011B	FZ012B	FZ013B	FZ014B
4 (650 mm)	FZ021B	FZ022B	FZ023B	FZ024B
5 (800 mm)	FZ11B	FZ12B	FZ13B	FZ14B
6 (950 mm)	FZ21B	FZ22B	FZ23B	FZ24B
7 (1100 mm)	FZ31B	FZ32B	FZ33B	FZ34B
8 (1250 mm)	FZ41B	-	-	-

5.5.3 Frame installation

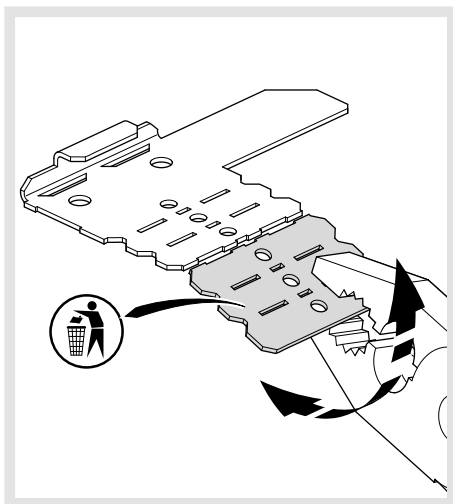
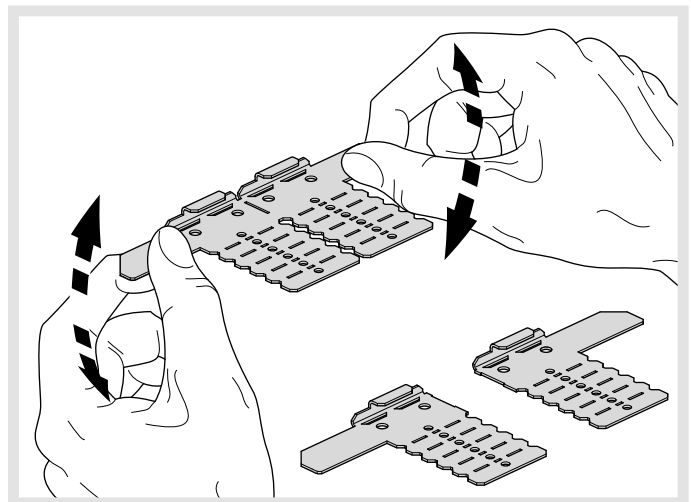
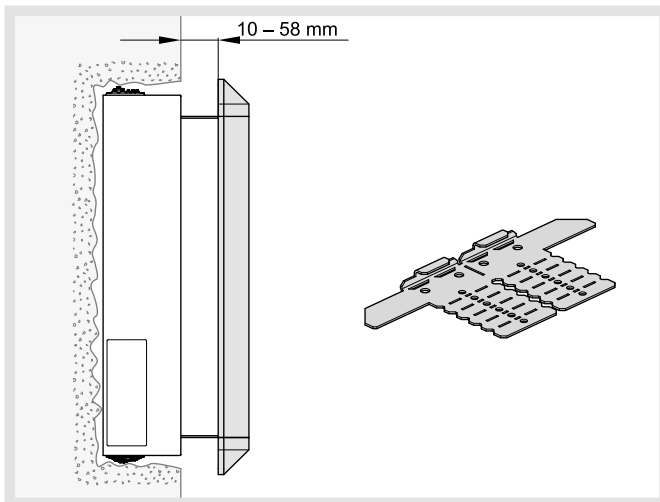
Frames for FWB cabinets are supplied with mounting brackets, self-tapping TORX screws and PZ2 screws. The number of parts supplied depends on the height and width.



		B [mm]:					
		500	650	800	950	1100	1250
A [mm]:	300	2x	2x	2x	2x	3x	3x
	550	2x	2x	2x	2x	3x	
	800	2x	2x	2x	2x	3x	
	1050	3x	3x	3x	3x	4x	

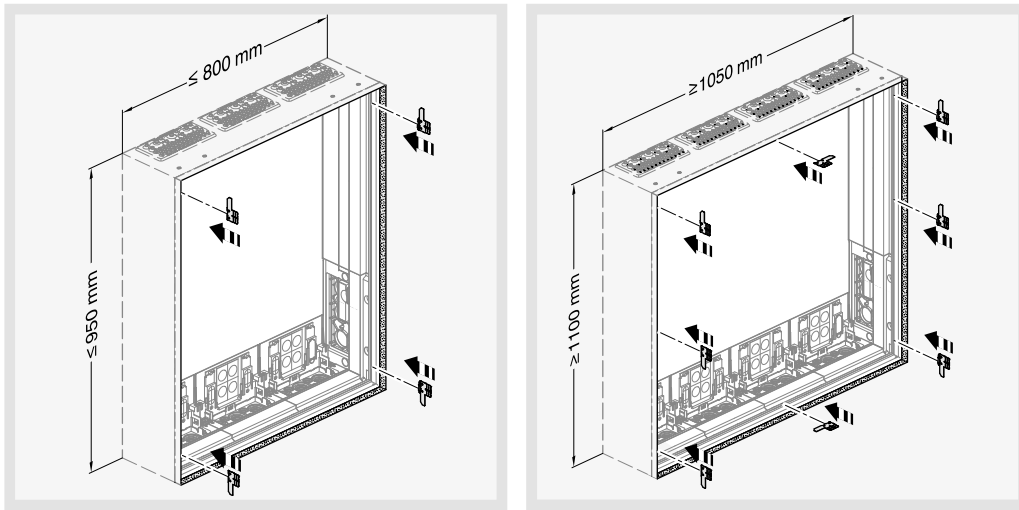


The mounting brackets first have to be separated and cut to the correct depth.

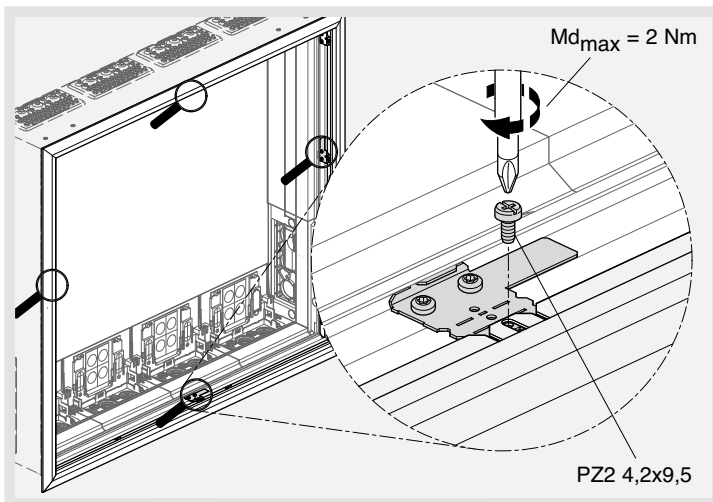


These brackets then have to be fixed to the cabinet enclosure with self-tapping screws. Cabinets with a height of up to 950 mm and a width of up to 800 mm require a total of 4 brackets on the sides.

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



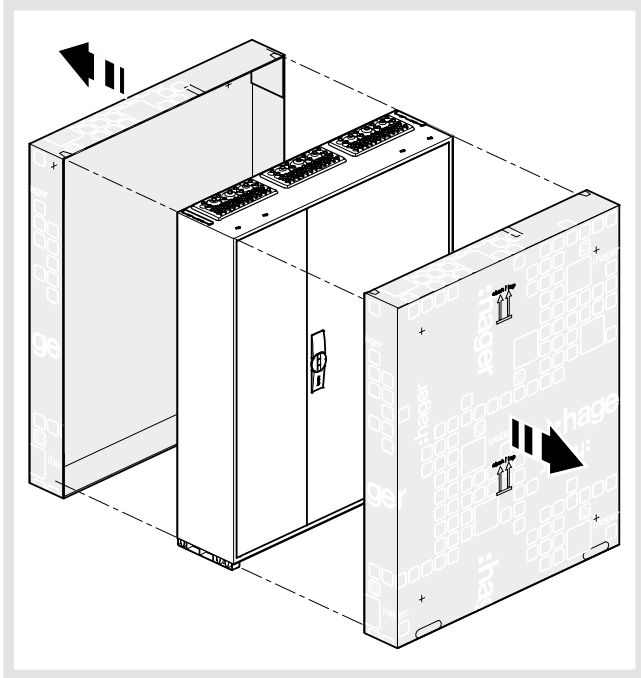
Finally, the brackets have to be fixed together with the frame using the PZ2 screws.



6 Enclosure installation

6.1 Packaging

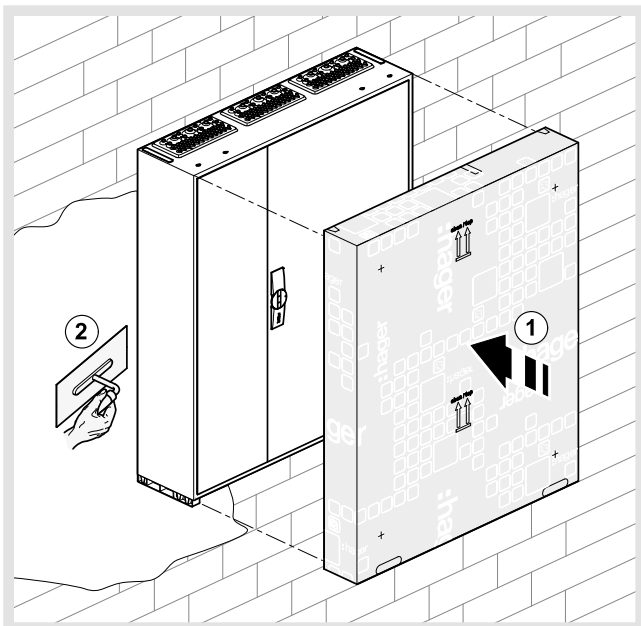
The FWB, FWQ distribution board is fully protected by the packaging, like in a shoe box.



FWB, FWQ distribution board packaging

For the basic mounting (FWB), markings are printed in the half shell for marking the screw holes on the wall (see page 16).

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



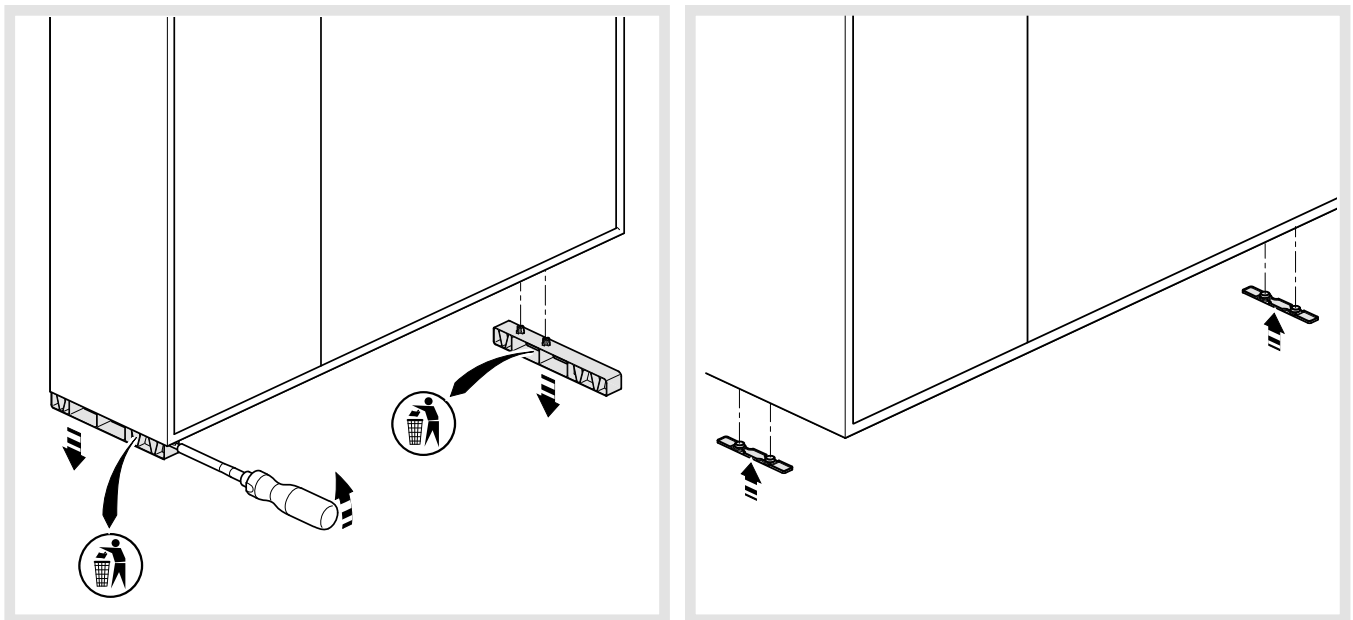
6.2 Cabinet feet

FWB and FWQ 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

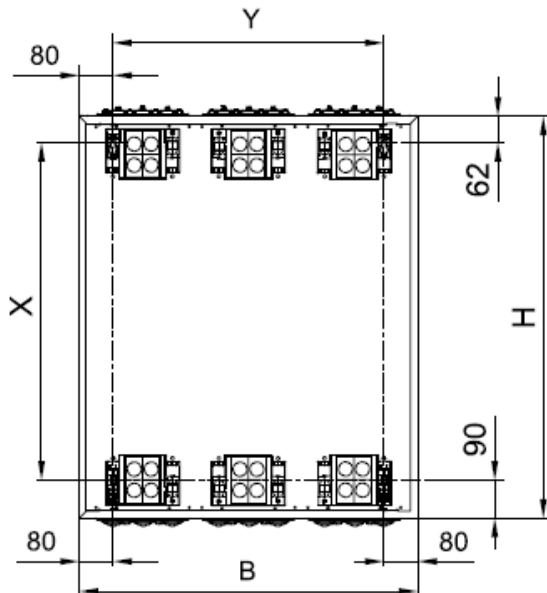
Although the standards do not specify it as compulsory, these plastic parts can be removed and disposed of once the cabinet has been installed on the wall for aesthetic reasons, either manually or with a flathead screw driver. Two sealing parts are supplied with all cabinets for sealing the resulting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



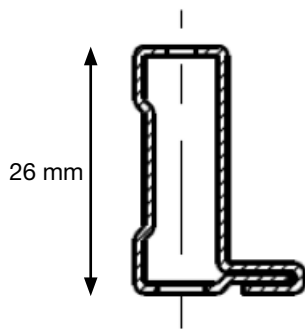
H	B	300	550	800	1050
500	X	348	3448	348	348
	Y	140	390	640	890
650	X	498	498	498	498
	Y	140	390	640	890
800	X	648	648	648	648
	Y	140	390	640	890
950	X	798	798	798	798
	Y	140	390	640	890
1100	X	948	948	948	948
	Y	140	390	640	890
1250	X	1098	-	-	-
	Y	140	-	-	-

7 univers Z internal system

7.1 Coding

The FWB, FWQ 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 width 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 69)

To determine FWB and FWQ 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

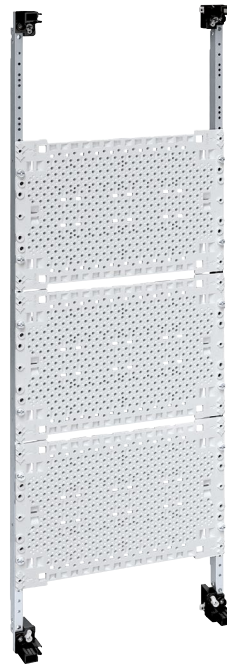
7.2.2 Multimedia panels

FWB, FWQ 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.

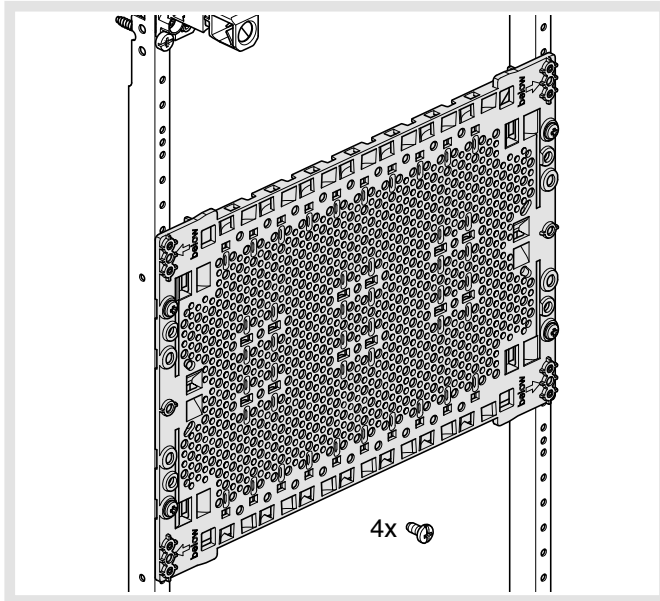
The plastic mounting plates can also be installed behind the mounting rails. These multimedia panels can be clipped into the FWB, FWQ cabinets. The following UMx1UK references are available:

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

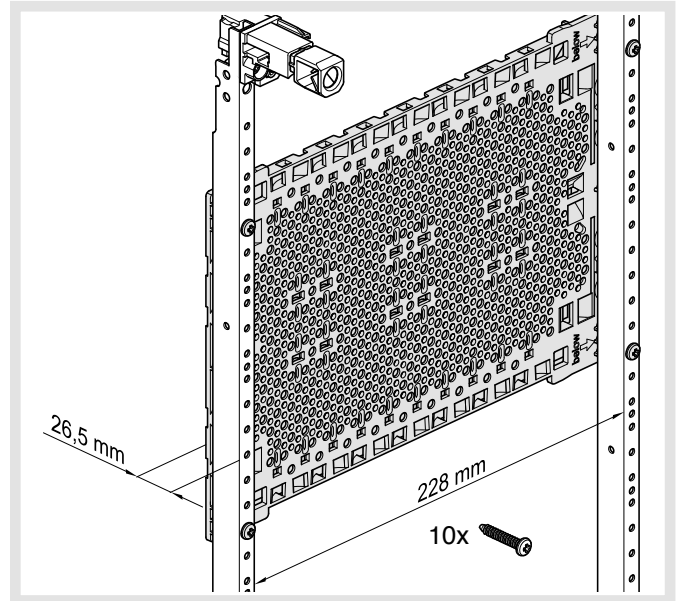
The 9.5 mm long screws are used for installing multimedia devices on the panels.

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.

univers Z internal system

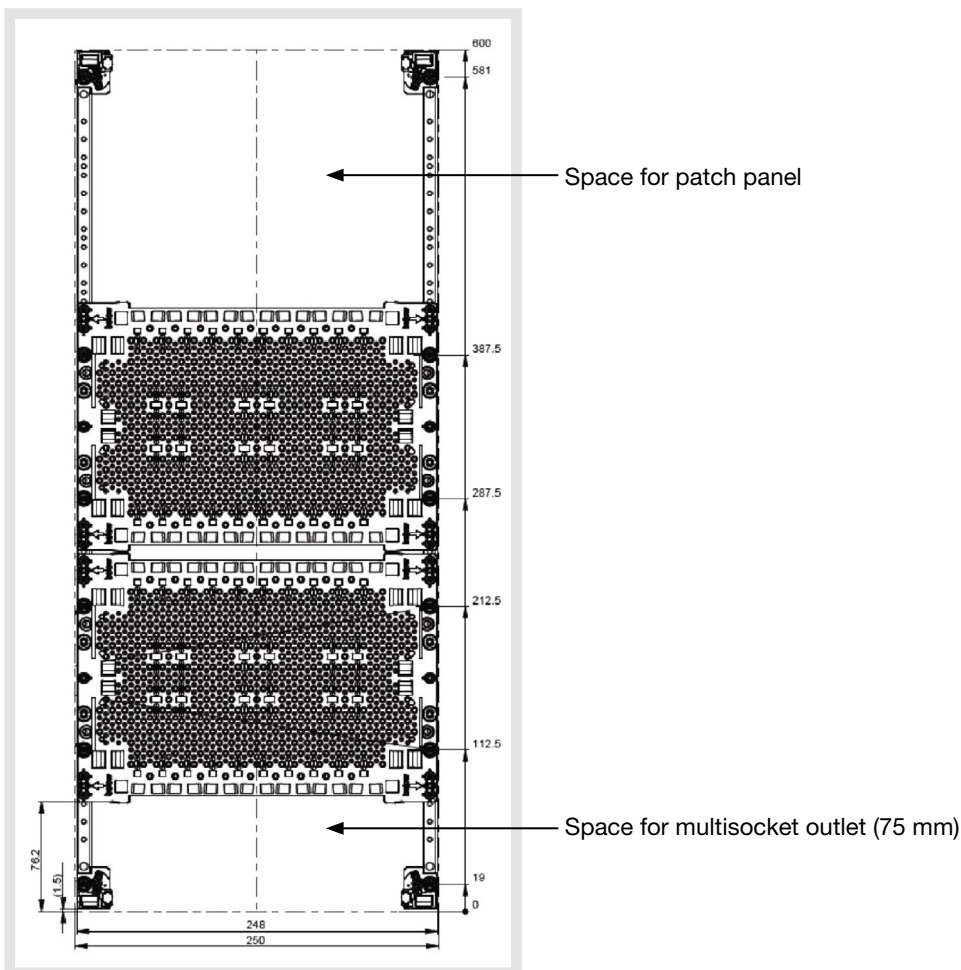


Installation of the plastic mounting plate in UMx1UK
Left: Front of the mounting rails



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 "UW51V plastic mounting plate" section).

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 68).

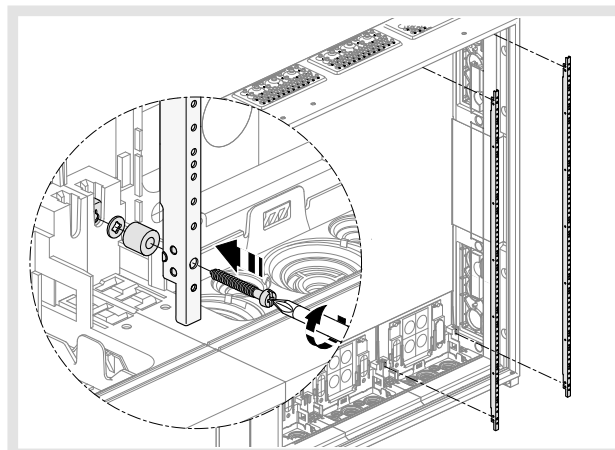
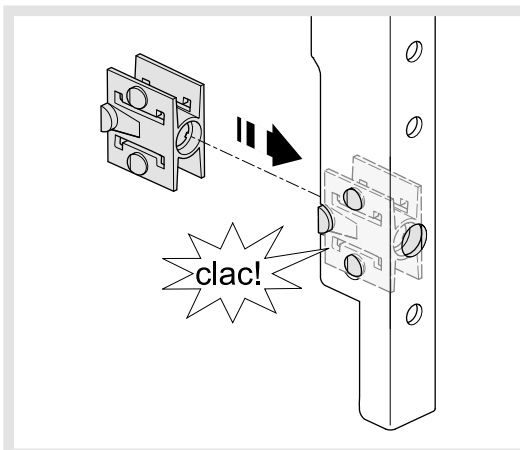
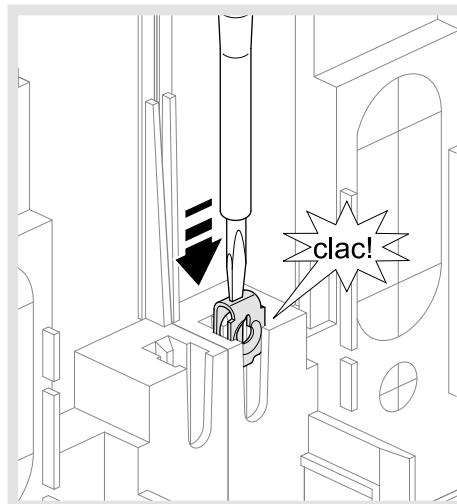
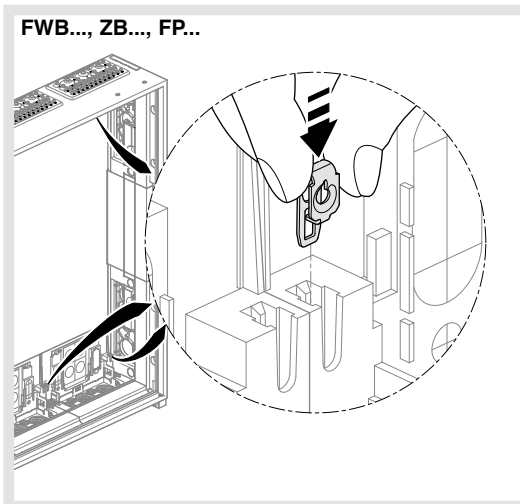
Mounting plates can also be ordered as individual parts and screwed onto univers Z mounting rails (see page 75).

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, FWQ enclosures.



Set ZZ41FWB



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

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.

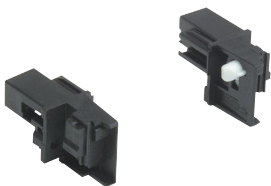
7.3.1 univers Z UN0xA mounting rails



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



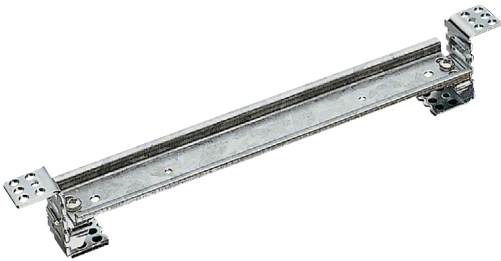
UZ01A2: Top fixation tower part

7.3.3 DIN rails U...

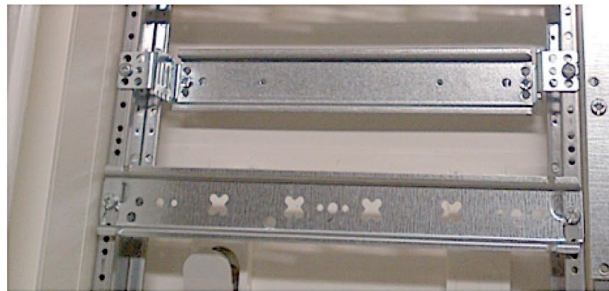
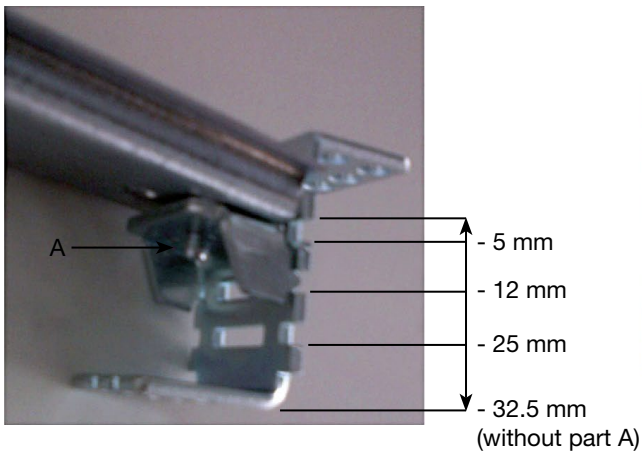
The following univers Z DIN rails can be ordered separately. The rail profile is 35 x 7,5 x 1 mm.



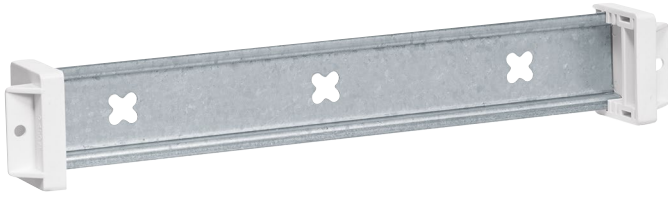
U842B: 7,5mm DIN rail standard (12 modules width)



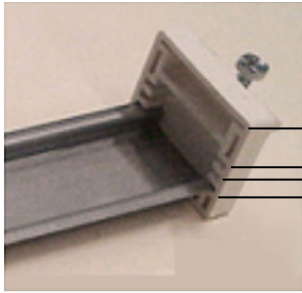
U82A: 7,5mm DIN rail, insertable (200 mm length)
1-panel, adjustable depth up to 32.5 mm



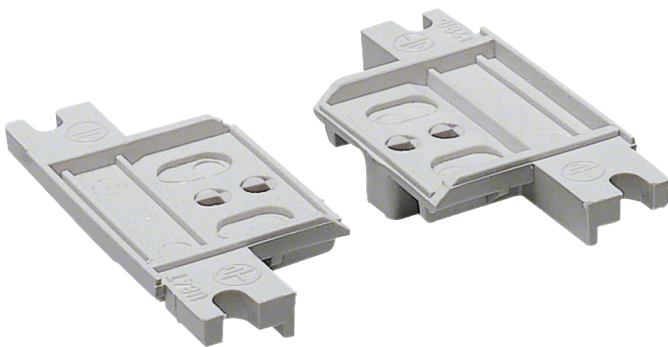
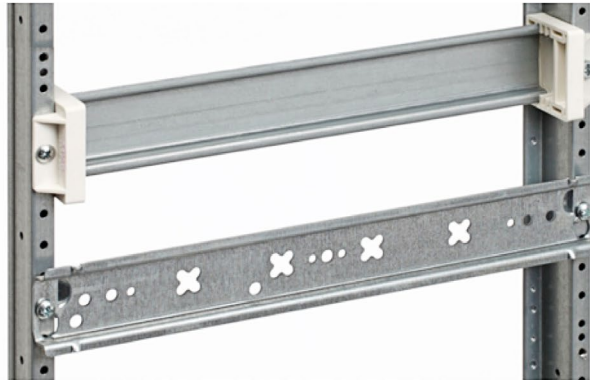
UT22B: 7,5mm DIN rail, insulated, insertable (200 mm length)
1-panel, recessed depth 31 mm (non adjustable)



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



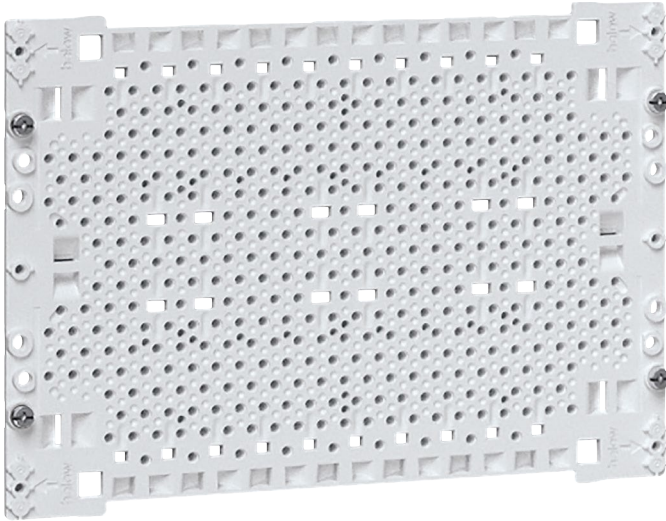
U84T: 2 x insulating piece for univers Z 7,5mm DIN rail, with screws



U821P: 4x univers adapter for 200 mm 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.

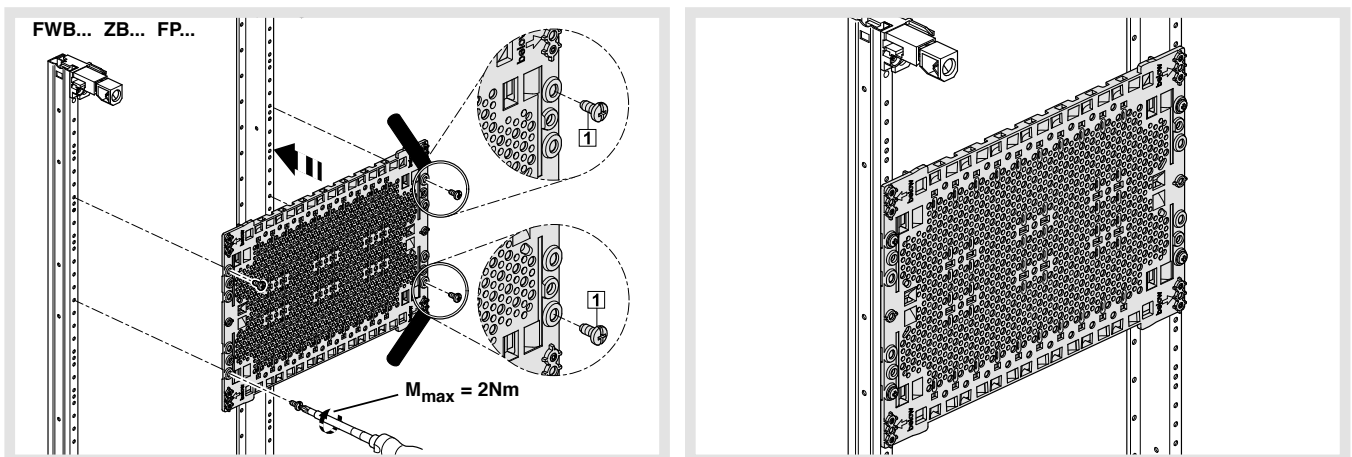


Example: UM00M0

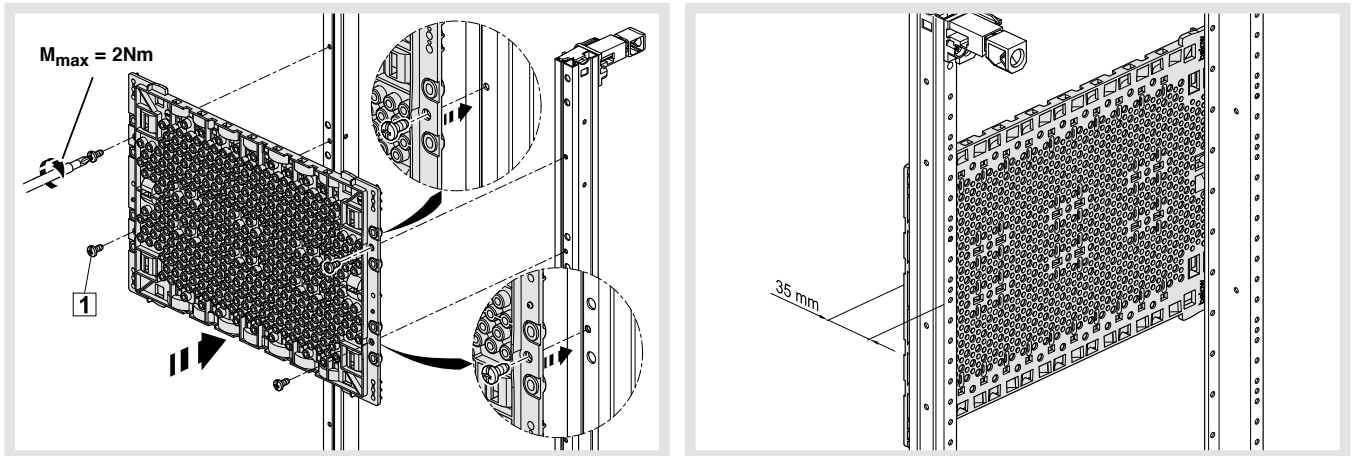
Installation

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).

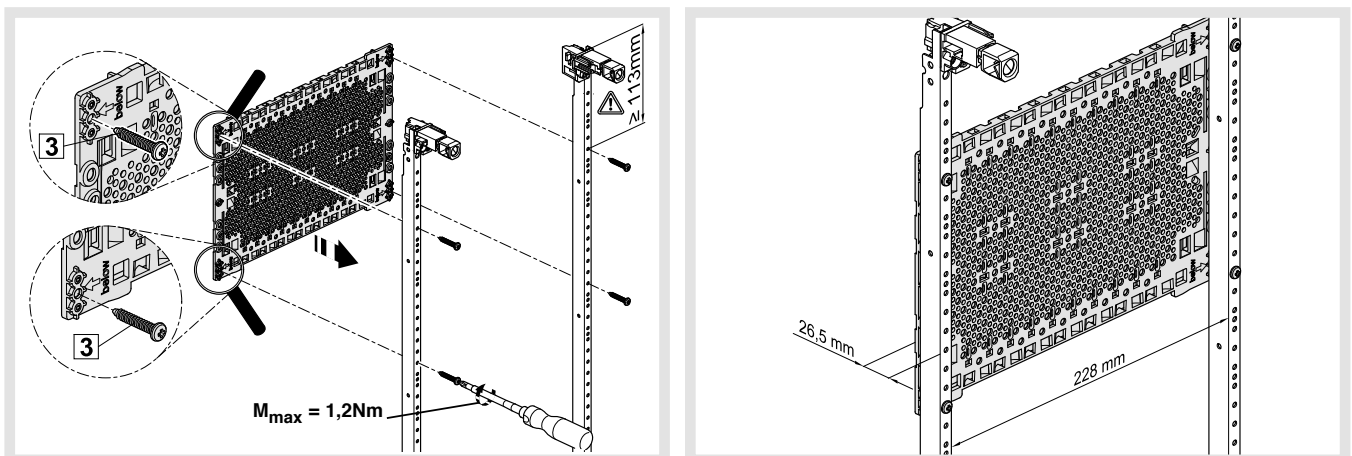


Installation of the UM00M0 plastic plate on the front of the univers Z mounting rail



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

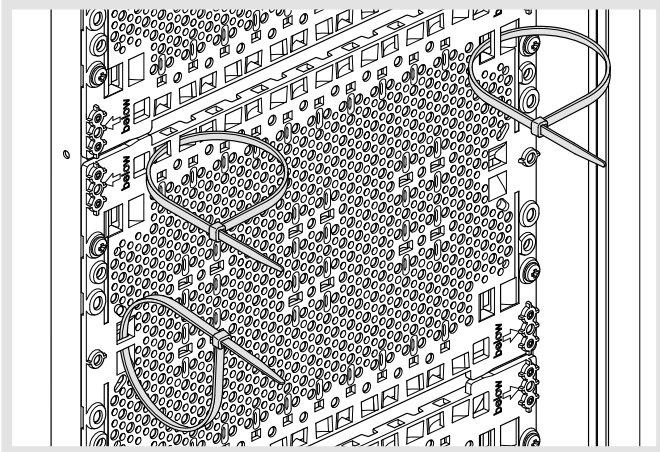
On the UMx1UK panel, this moves the rear edge of the mounting plate 26.5 mm behind the mounting rail. The resulting usable width for installing devices on the mounting plate is 228 mm (width between the mounting rails).



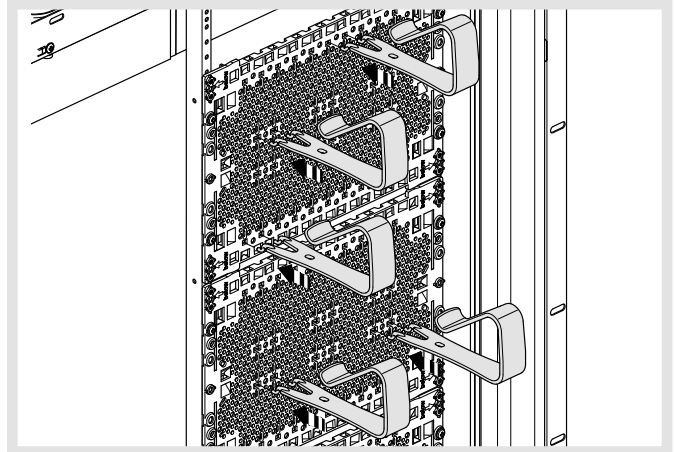
Installation of the UM00M0 plastic plate on the rear of the univers FW mounting rail

The mounting plate has various integrated functions:

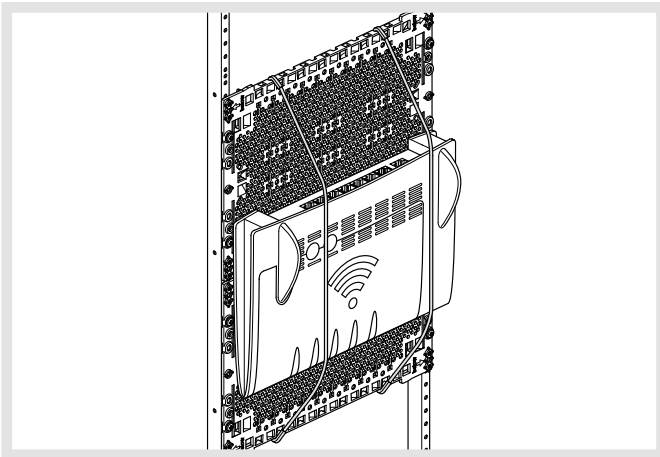
- Installation of cable ties
- Installation of **FZ913** cable holders
- Installation of **VZ02MM** modem holder
- Quick fixing of **VZ340** elastic bands
- Depth adjustment of the mounting rails



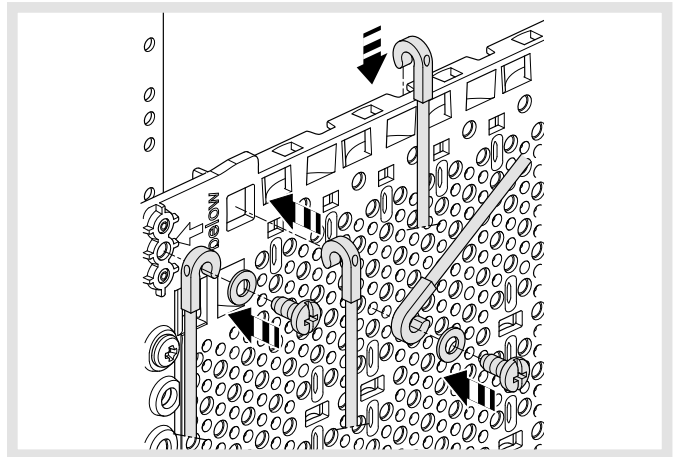
Cable ties installed on the UM00M0 plastic mounting plate



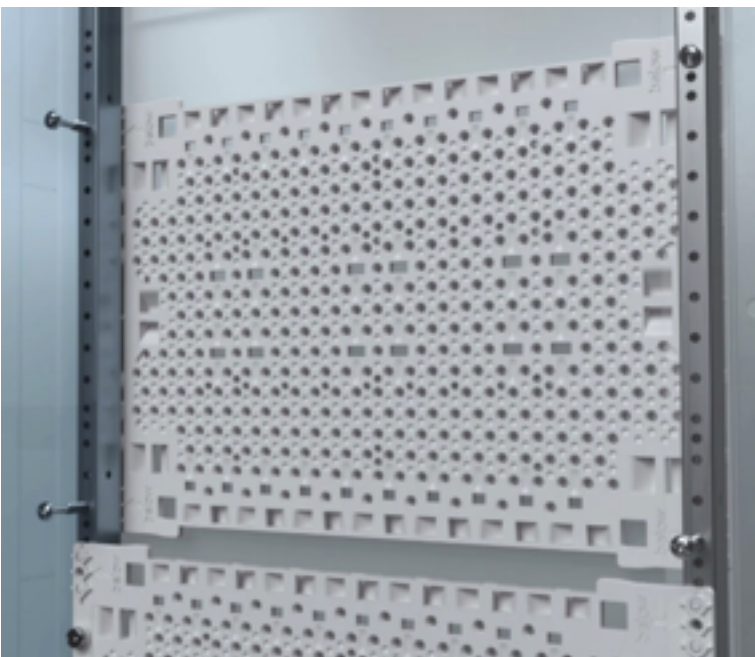
VZ02MM modem holder installed on the UM00M0 plate



VZ340 fixing kit with modem installed on the UM00M0 plate



VZ340 fixing kit installation options



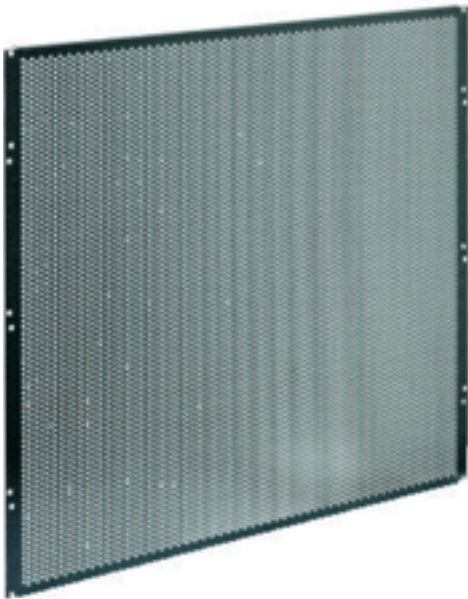
Mounting plate on the rear of the univers FW mounting rail (top of the image)
 Installation on the front of the univers FW mounting rail (Bottom of image)

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

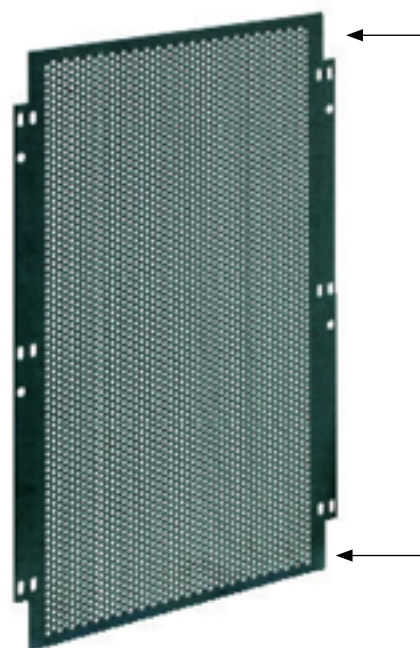
Steel mounting plates, also called perforated plates, come in 2 different versions. Like in the cabinet references, the two digits after the UZ indicate the height and width of the panel into which the panel fits. The ending **M5** means that the panels are rectangular. **M6** panels, on the other hand, 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



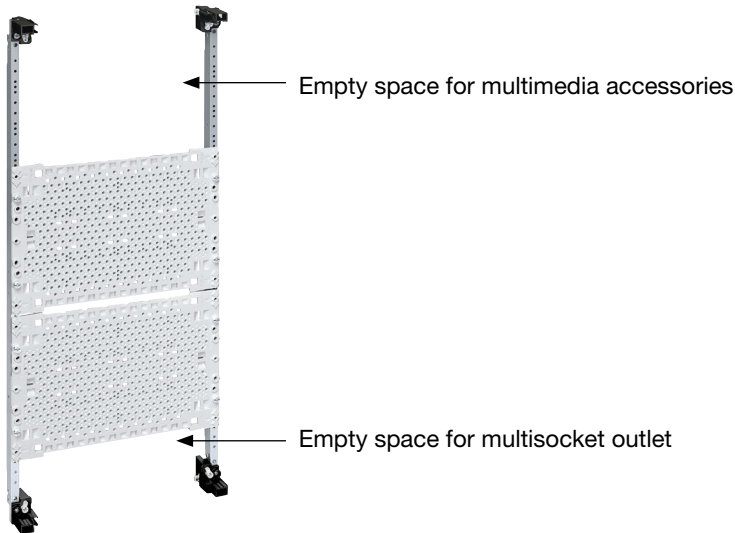
Example: UZ31M6

Extension of the perforated metal plate area in M6 plates

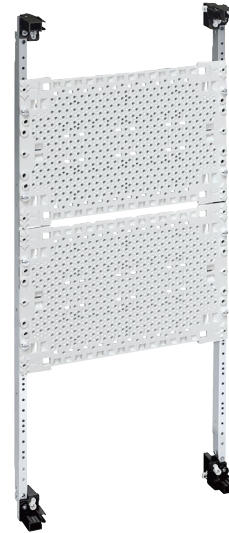
Panels	Height (mm)	Width 248 mm
Steel plate (extended)	240	UZ21M6
	390	UZ31M6
	570	UZ41M6
	720	UZ51M6
	890	UZ61M6

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

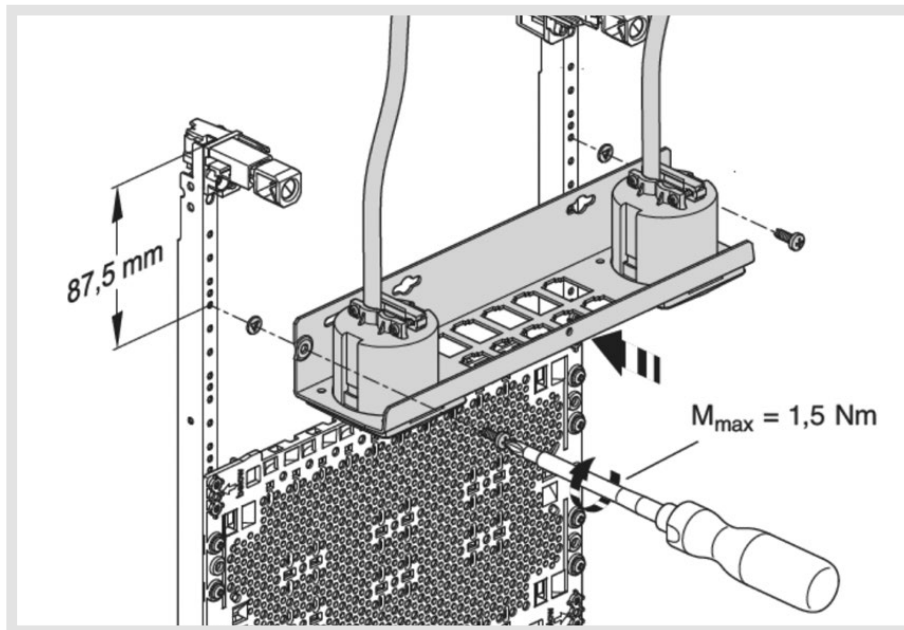
At the top, for example, the patch panels and socket holders UM00Hx and UM00Kx can be installed and cleanly concealed with a cover. At the bottom, the Volta multisocket outlets **VZ00AS** and **VS00ASF** can be installed and also concealed with a cover:



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, FWQ wall cabinets 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.



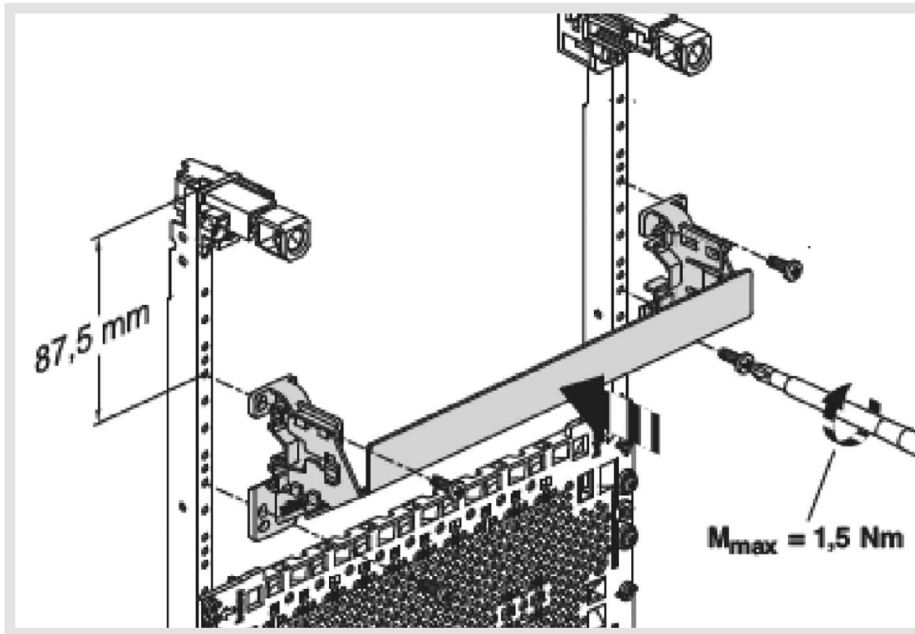
Installation of the patch panel cover with 2 fixation towers

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.

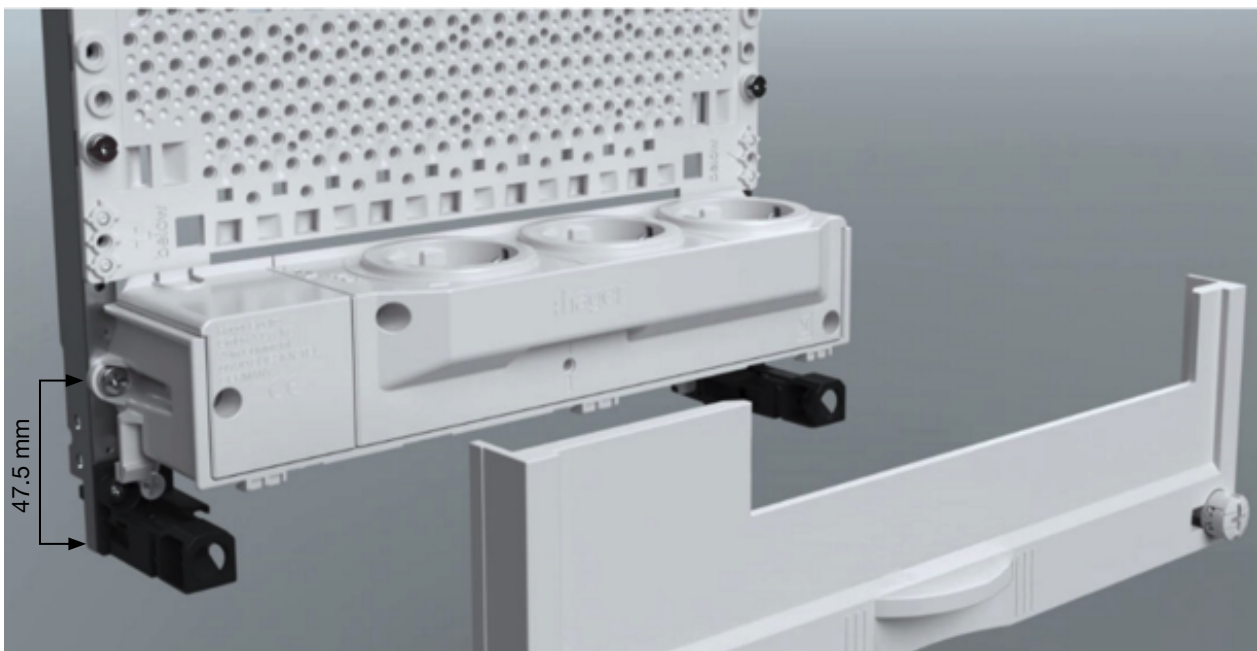
Both of these references already contain the needed fixation towers.

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

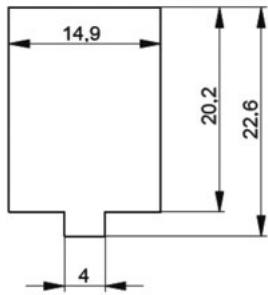
As in the patch panel area, a special cover can also be installed here. First, the two fixation towers (**UZ01A2**) have to be inserted.

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.

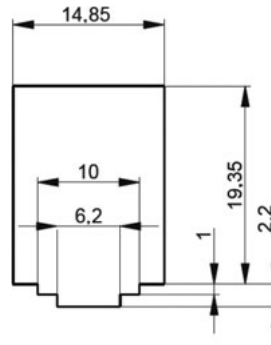
7.4.1 Patch panels without socket insertion

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

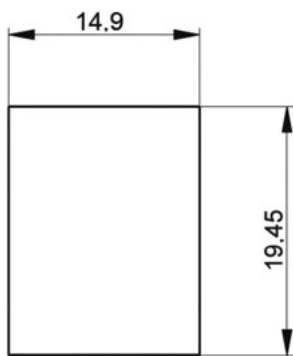
Patch panel opening dimensions



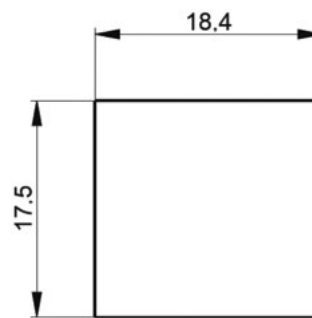
HMS system



E-DAT



Keystone



Lexcom

UM00K4 / UM00K5 / UM00K6

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

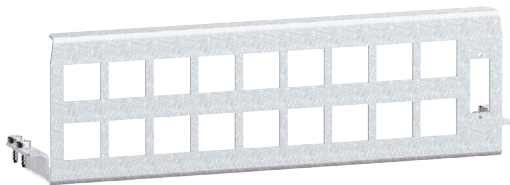
- UM00K4 for 24 x E-DAT
- UM00K5 for 24 x Keystone
- UM00K6 for 18 x Lexcom and 1 x glass fibre



UM00K4



UM00K5

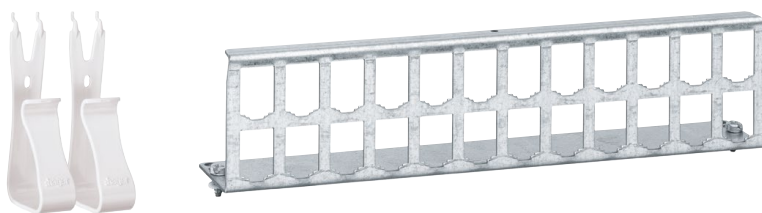


UM00K6

UM00M4 / UM00M5 / UM00M6

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

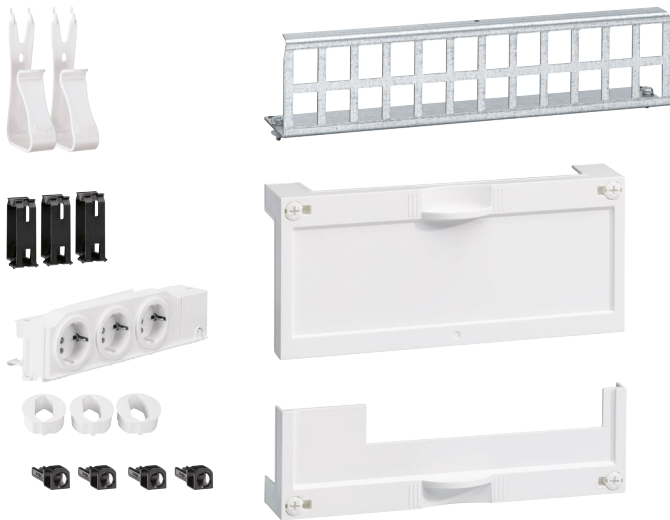
- 2 modem holders (VZ02MM)
- 3 cable holders (FZ913)
- Schuko multisocket outlet (VZ00AS)
- Metal patch panel



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

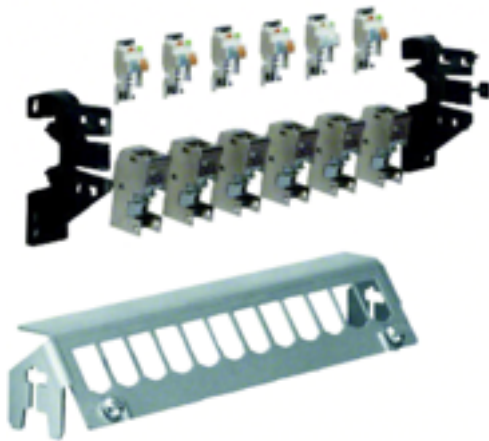


UM00M6

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



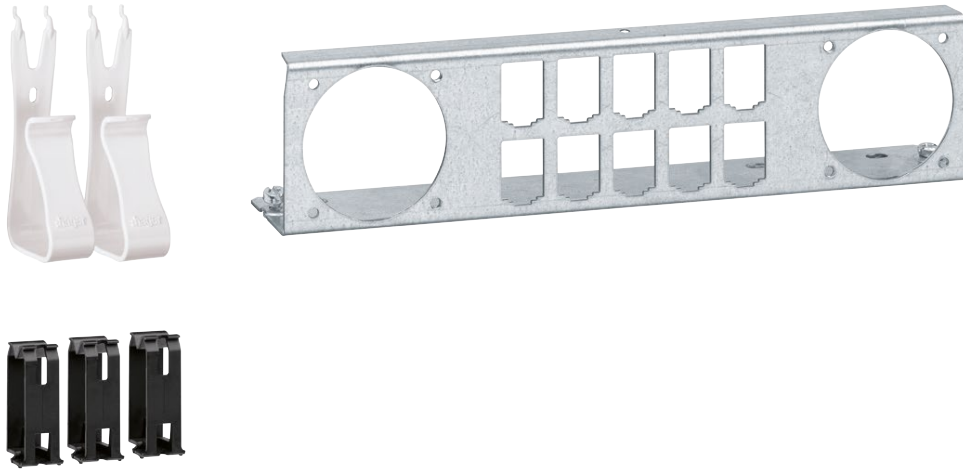
VZ00HD



945602502

UM00M3

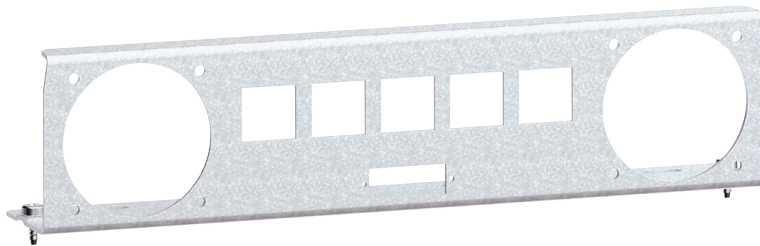
The UM00K3 patch panel is also included in the UM00M3 set. This set contains the patch panel, 2 modem holders (VZ02MM) and 3 cable holders (FZ913).



UM00M3

UM00K7

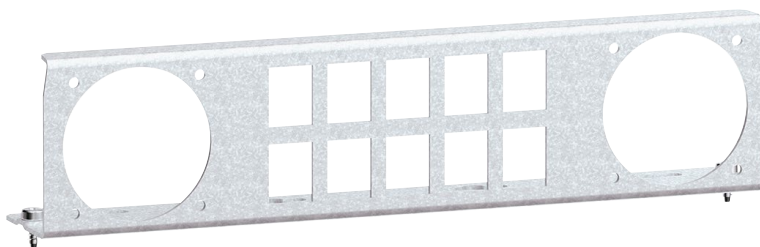
The UM00K7 is similar to UM00K3, but contains 5 openings in the centre for Lexcom patch inserts and an opening for glass fibre.



UM00K7

UM00K8

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



UM00K8

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.



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



WH70300200Z



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 “ready-to-use devices” in Switzerland.



WH37580300D



WH66549000D



WH37641300D

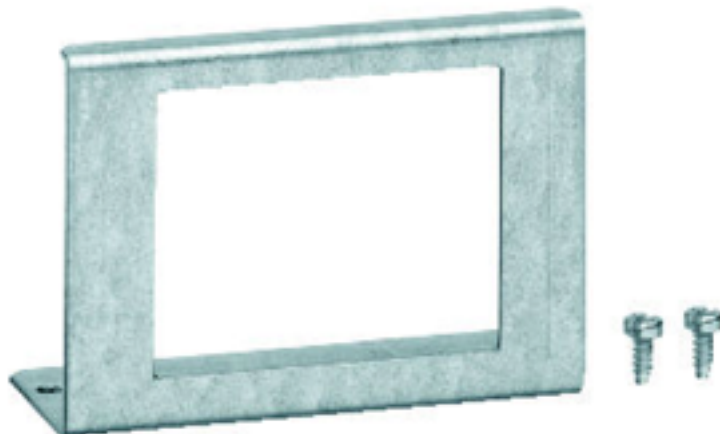


WH37620300D

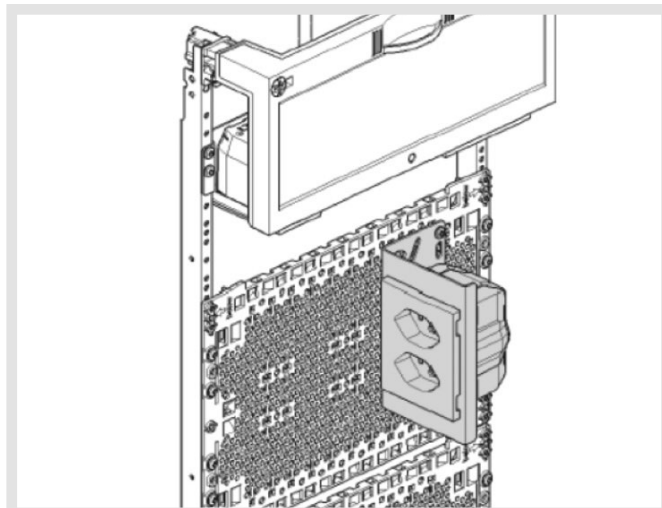
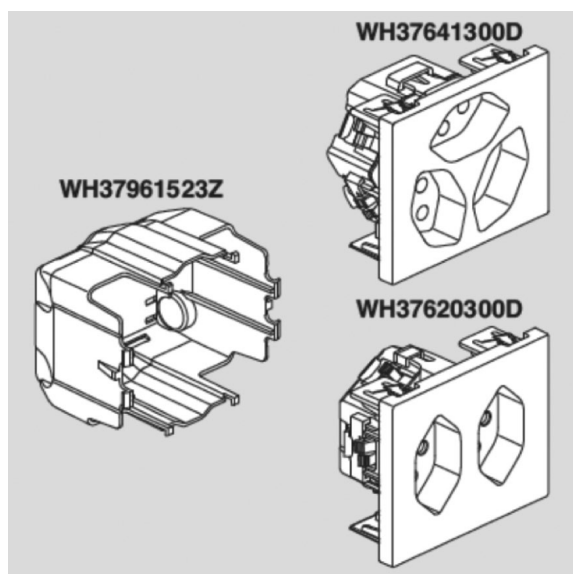
7.4.4 FLF socket holder UM00H0

The **UM00H0** socket holder is compatible with the Swiss type 13 FLF socket system.

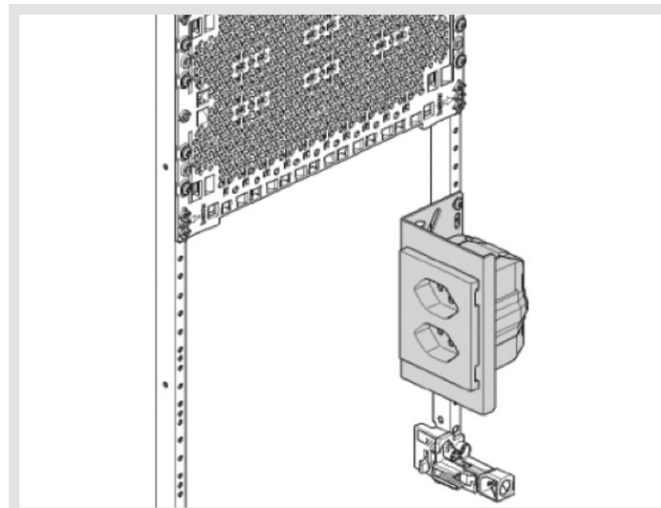
Hager FLF twin and multisocket outlets **WH37...** can be locked into the metal opening. The mount can be screwed vertically and directly onto mounting rails or mounting plates.



UM00H0

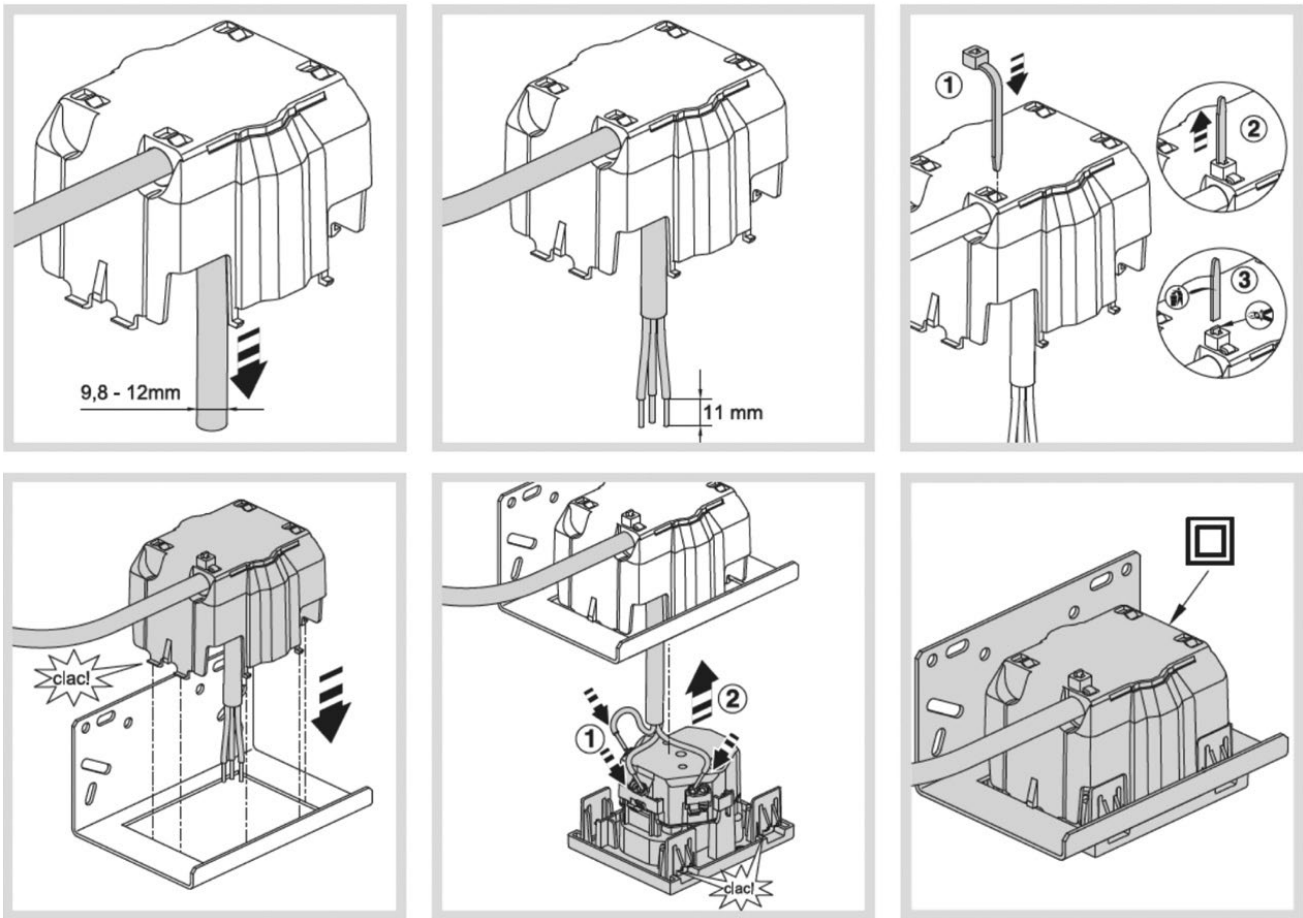


Installation of the UM00H0 socket holder on the mounting plate



Installation of the UM00H0 socket holder on the mounting rail

 FLF sockets have to be covered with the **WH37961523Z** cover to ensure protection class II.



Mounting of the WH37961523Z cover for FLF sockets 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 FW / FWQ 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 and FWQ 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

180° rotating
socket

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

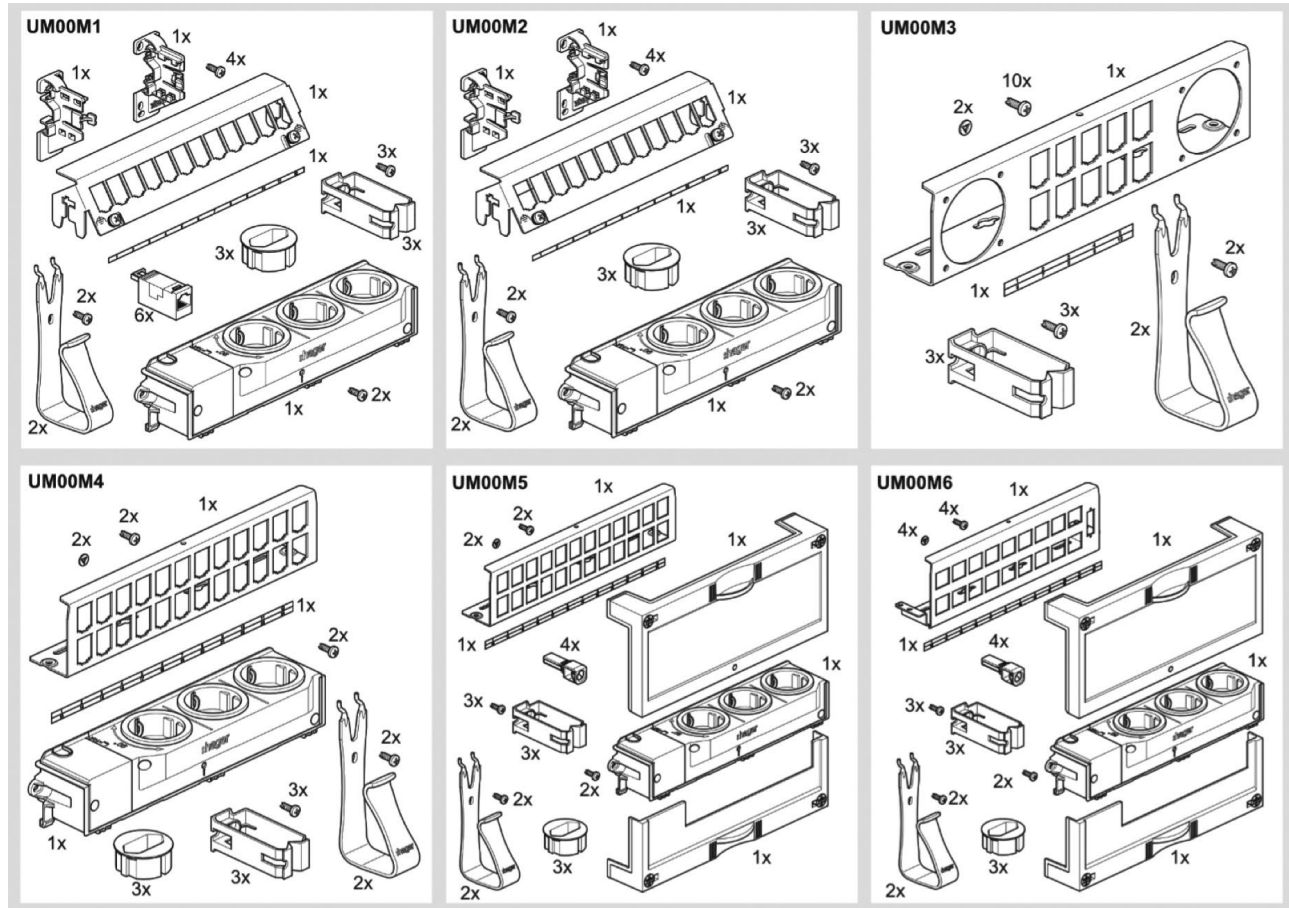


FWB42K1 with installed covers for patch panel and multisocket insert

7.4.8 UM00Mx multimedia sets

Various UM00Mx multimedia sets have been developed for main FWB, FWQ 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.

8 Internal system accessories

8.1 Coding

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

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

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

K... , KN... , KM...	terminals and terminal accessories
VZ...	Volta, Vector
WH37...	Type 13 FLF sockets (CH)
926002509 + ...	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

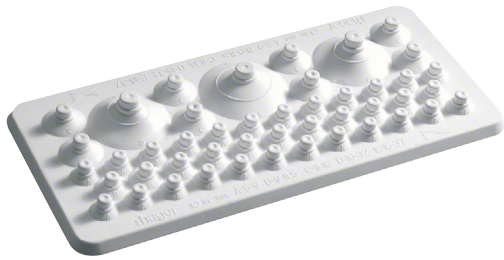
The rear of the plastic top and bottom parts in the cabinet contains also four precuts with a diameter of 29 mm that can be punched out.



Punch-out points on the rear of the cabinet

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** and **ZZ10H** inserts.

UZ01F1: Screw connection on the mounting rails

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



UZ01F1 horizontal separation



Direct screw connection
on the mounting rails

UZ01F1 installation

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

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.

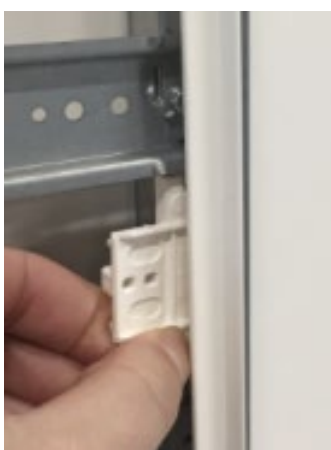
Their advantage is that they can be inserted or removed subsequently between 2 installed panels without having to remove one of the panel.

Internal system accessories



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

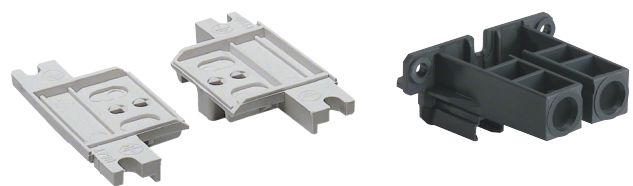
However, they are not compatible with the **U84T**, **UT22C** insulation parts, **UZ04A1** twin tower and **KCLxxx** vertical 63A phase rails.



UZx0F1

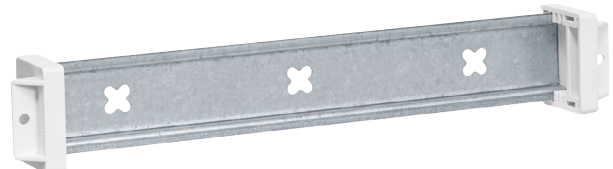


KCF663L



U84T

UZ4A1



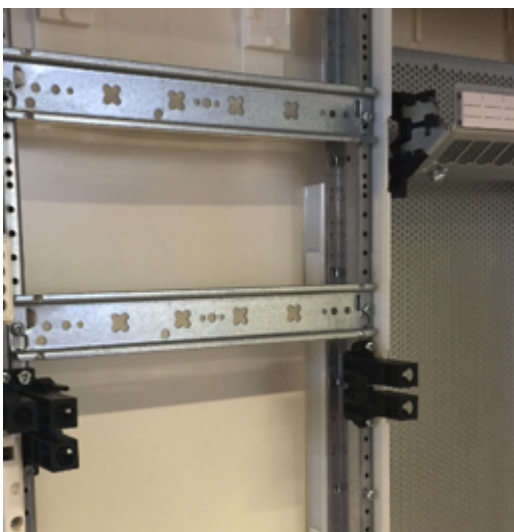
UT22C

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:

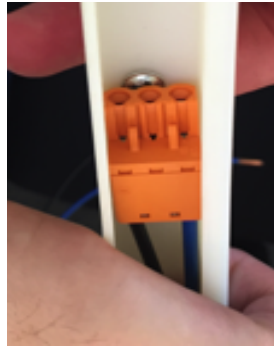


Recess in the centre for installation of the UZ04A1 twin tower mounting

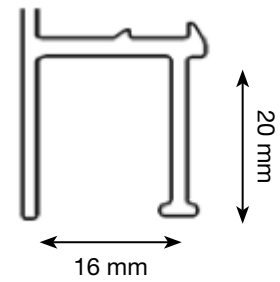
Internal system accessories



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



Integrated cable duct in the central area below the mounting rail




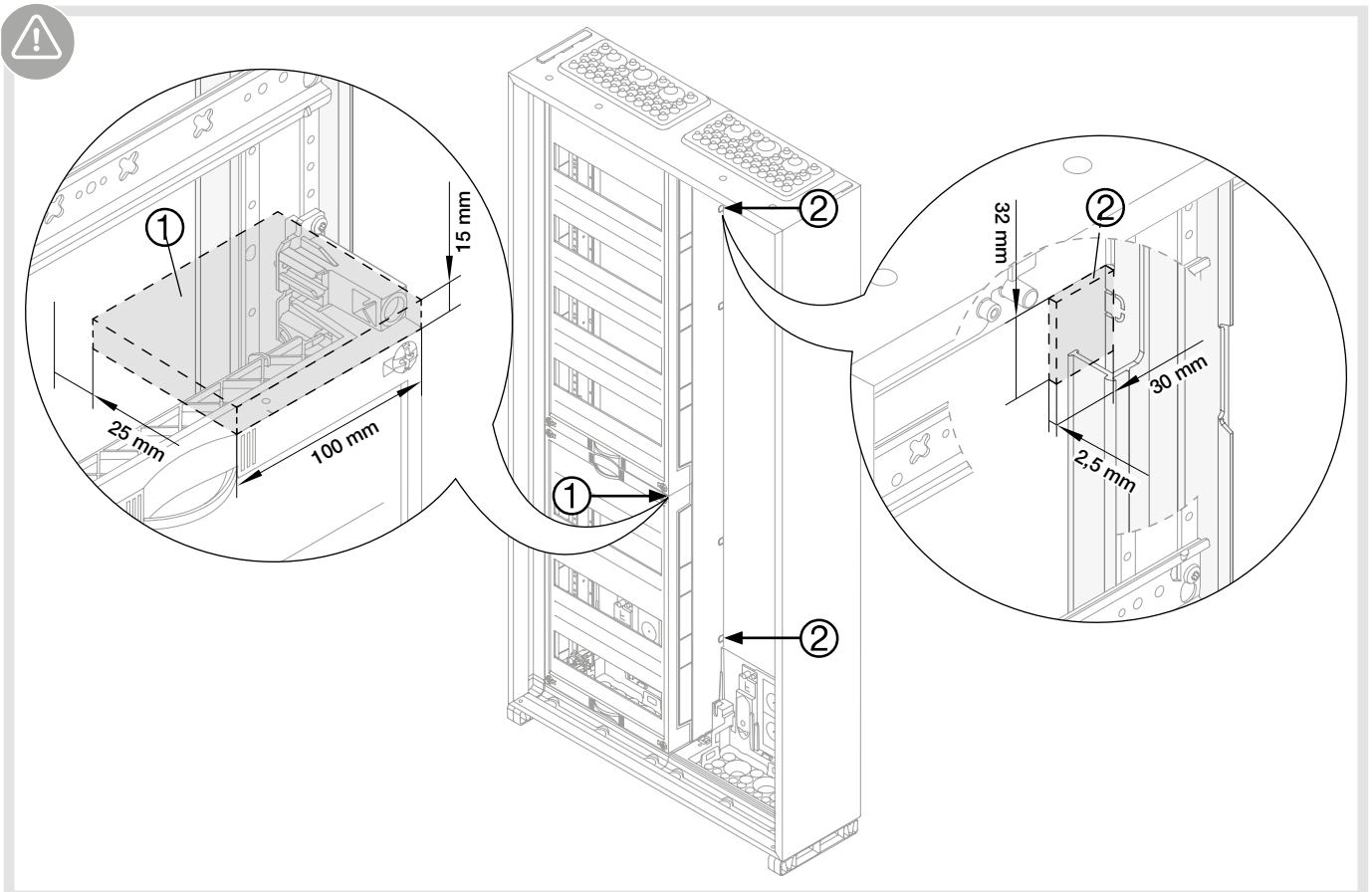
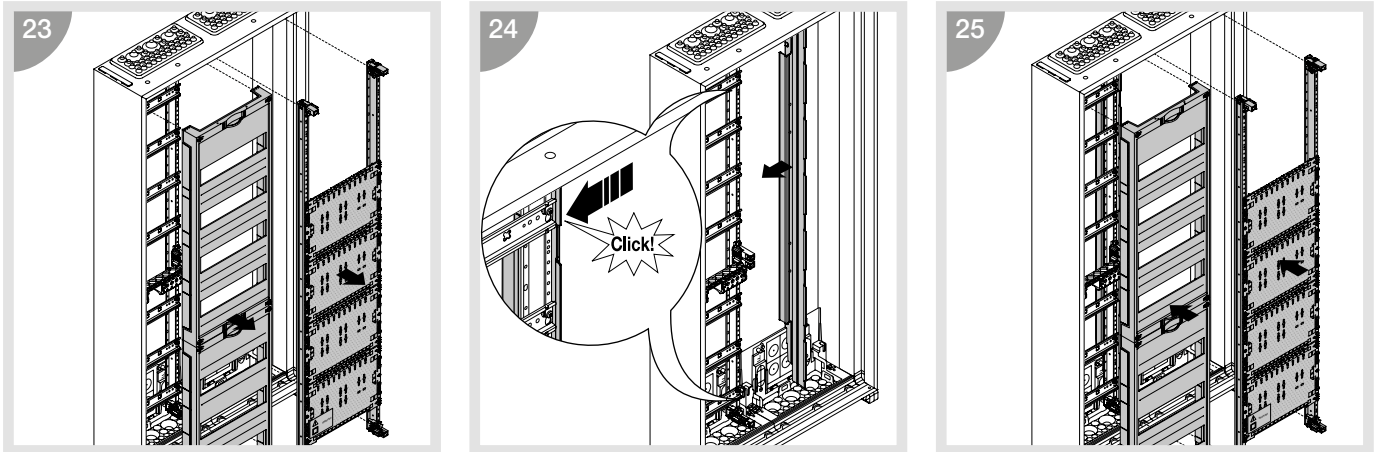
Additional fixing with screws possible (from the rear) with the screws supplied

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 / FWQ cabinets with D or 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 **ZZ41SF** set contains 4 locknuts.



ZZ41SF locknut set

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

Panels can be screwed on with the **ZZ44SF** accessories set on request.

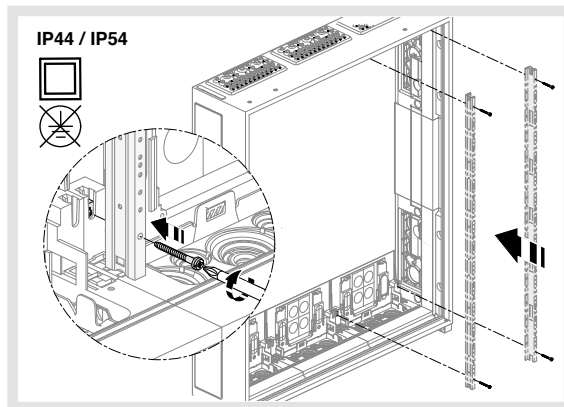
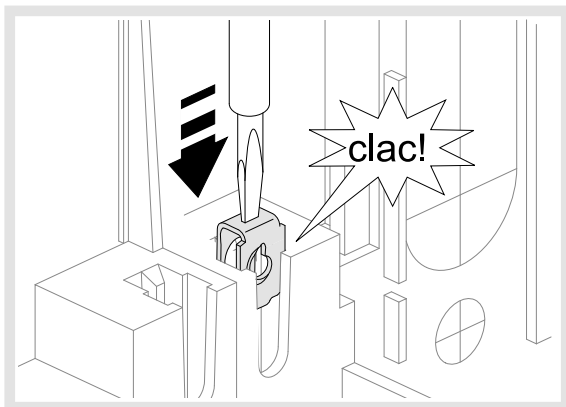
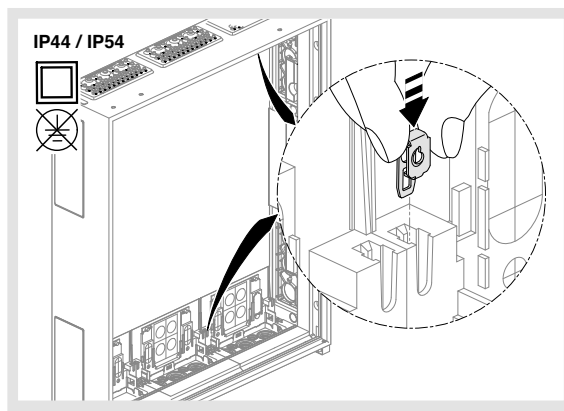
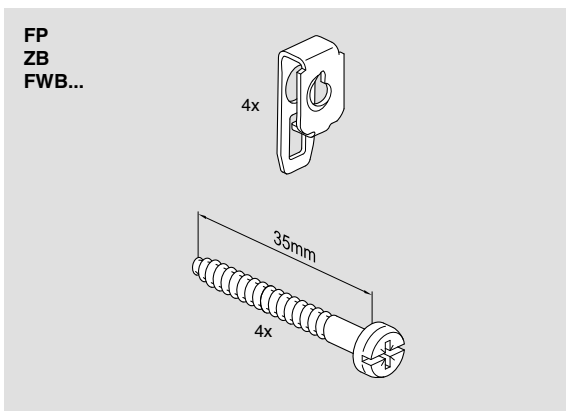
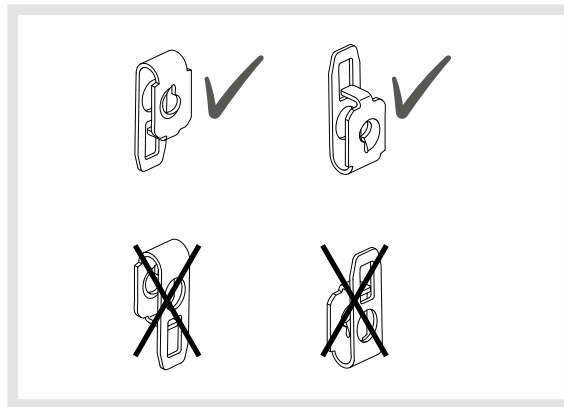
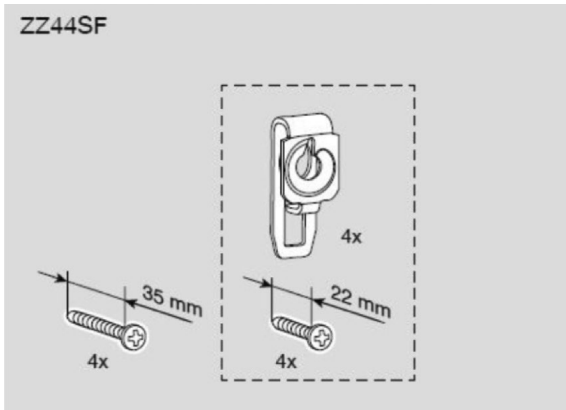


Set ZZ44SF contains 4 screws for FWB / FWQ, 4 screws for FWU and 4 locknuts

For the FWB / FWQ 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 universal 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"> - Effectiveness of ventilation system and heating in operating room - Room temperature, relative humidity, aggressive airborne particles, dust
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"> - Missing parts - Locked doors - defective paintwork
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"> - 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 - Check the operating and environmental conditions
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 UZ01A2 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.

	<p>Devices labelled with this symbol are subject to EU Directive 2012/19/EU for WEEE (Waste Electrical and Electronic Equipment). Electrical devices must not be thrown into the household waste.</p> <p>Dispose of them in accordance with your local regulations.</p> <p>Separate the raw materials in the system by disposal type and material:</p> <p>Components containing copper, such as busbars and wires</p> <p>Electrical waste: Terminals, circuit breakers</p> <p>Scrap metal: Sheath, installation plates</p>
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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 (Inc) of the output circuits is 125 A: the maximum rated voltage of the switching device combination (InA) is 250 A. The FWB, FWQ distribution board is intended for a maximum infeed current of 125 A (rated voltage InA 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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