Technical Manual
VegaD

for surface-mounting flush-mounting
& Accessories

Australia and New Zealand

:hager

Table of contents

1 About this manual

These instructions are an integral part of the VegaD enclosures.

Chapter index

1.1 Subject of the manual

This document is intended for users of the flush- and surface-mounted VegaD enclosures made by Hager. The instruction manual describes both the technology and the product ranges agreed with the respective markets, including accessories and spare parts required at the time of publication. It is intended to be read and utilised by licensed electricians and related electrical industry professionals.

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

As technical documentation, the manual should accompany the products described during their entire lifetime and is thus subject to periodical revisions, modifications and adjustments.

1.2 Warranty and Liability

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

Liability note

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

2 For your safety

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

Chapter index

2.1 Proper use

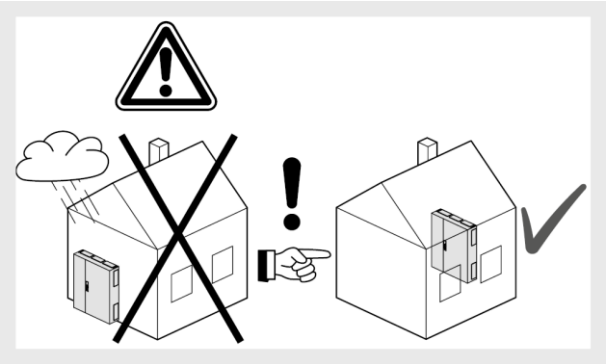
The Hager VegaD enclosure is a product offering for flush-mounted and surface installations, protected to IP30/40/41, for residential and commercial buildings with a maximum supply current of 160 A.

VegaD flush enclosures are installed at a depth of 110 mm in the wall. They are available in 4 different heights.

VegaD surface enclosures are installed at a depth of 193 mm on the wall. They are available in 4 different heights.

The VegaD enclosures have been equipped with components from the VegaD internal fitting system.

Hager's tried and tested VegaD enclosures and the VegaD internal fitting system enable the implementation of switchgear and controlgear assemblies according to IEC 61439 Part 3 (Distribution boards intended to be operated by ordinary persons / DBO).



Fixed indoor installation/wall mounting

With its enclosed design, the VegaD enclosures are intended for stationary, indoor, surface- and flush-mounting in walls/hollow walls. The operating conditions for the indoor installation according to IEC 61439 and the maximum ambient temperatures must be observed at the place of installation.

The VegaD enclosures meet protection types IP30/IP40/IP41 when equipped with internal system and/or closed or slotted doors. The instructions in this manual regarding compliance with the protection type must be observed during installation works.

The VegaD enclosures are available in protection class II (double insulated). The instructions in this manual regarding compliance with the protection type must be observed during installation works.

For more detailed information, refer to the technical data.

Intended use also includes:

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

Misuse

Any other uses than those mentioned in this chapter as well as any modifications to the distribution enclosure are considered to be misuse. Hager does not assume any liability for damages resulting from misuse.

Limitation of operating areas

There are certain areas in which the VegaD enclosure may not be used, in order to prevent hazards or damage to the enclosure.

The VegaD is not suitable for use:

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

2.2 Requirements for authorised personnel

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

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

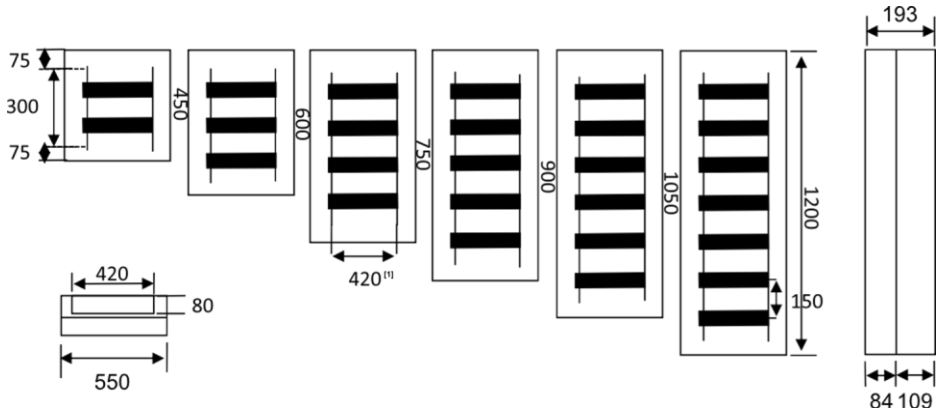
- An electrically skilled person by virtue of their professional training, skills and experience as well as knowledge of the relevant regulations can assess the work assigned to them and identify possible dangers.
- An electrically instructed person must be sufficiently informed and supervised by an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

3 Product range by VegaD surface

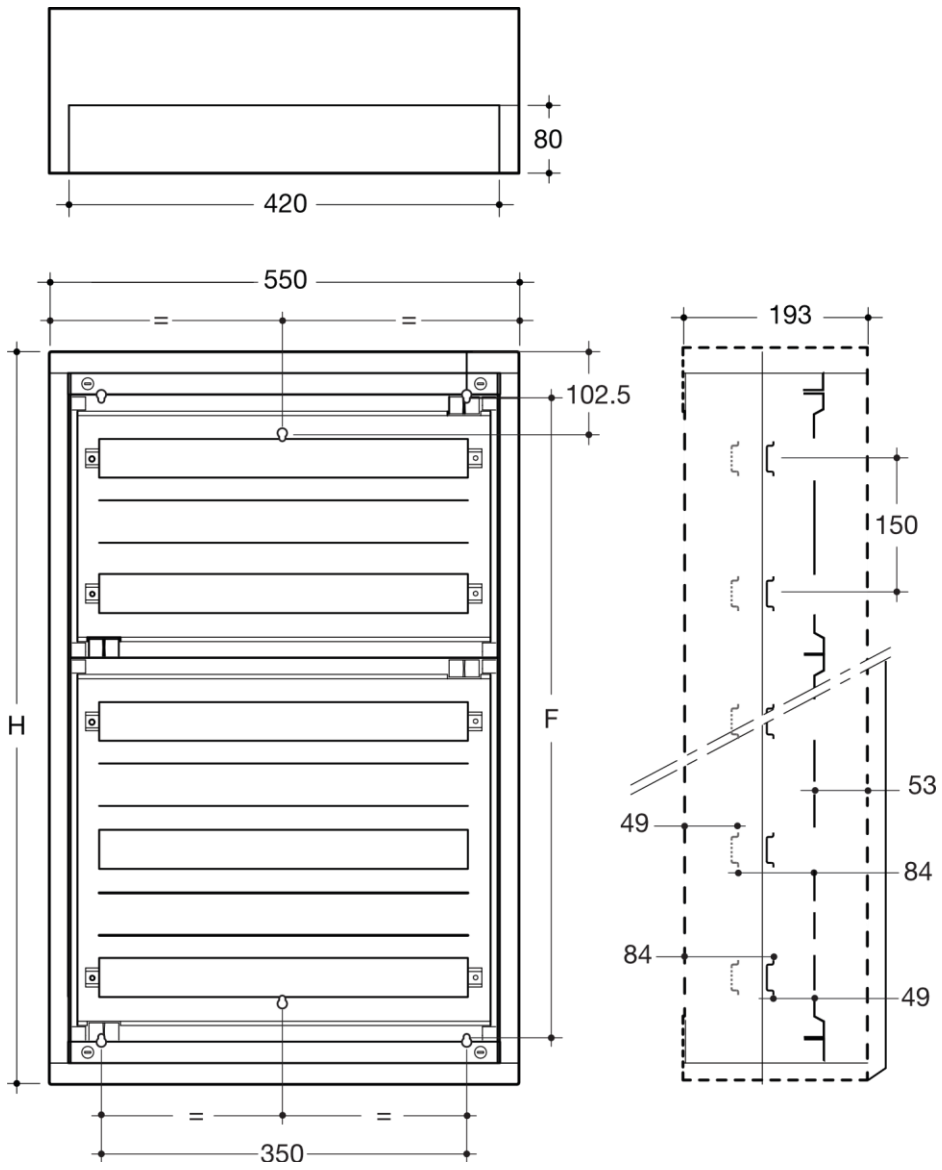
Chapter index

3.1 External dimensions

FDX2 DN full equipped



[1] Between uprights



3.2 DN Version

- full equipped without door
- with Quick-Connect terminals earth
- no Quick Connect neutral terminals are provided - they must be purchased seperately

Equipment standard	PEN QC holder 24 modules wide	Quick-Connect earth modules	Quick-Connectearth joiners	Multi-functional side bracket for surface	Instruction sheet with Quick-Connect explanation	Cover slot strip JP002	4 screws kit 4x16 for optional PEN holder or slider fixing	5 caps kit for covering wall-fixation screws	Paper cover marking strips 24 mod. and holder	Cable strain relief bar	Drawing map
FD42DN	1x	1x KN22E / 1x KN26E	1x KN99E	8x	1x	1x	1x	1x	4x	1x	1x
FD52DN	1x	1x KN22E / 1x KN26E	1x KN99E	10x	1x	1x	1x	1x	5x	1x	1x
FD62DN	2x	3x KN26E	2x KN99E	12x	1x	1x	1x	1x	6x	1x	1x
FD72DN	2x	3x KN26E	2x KN99E	14x	1x	1x	1x	1x	7x	1x	1x

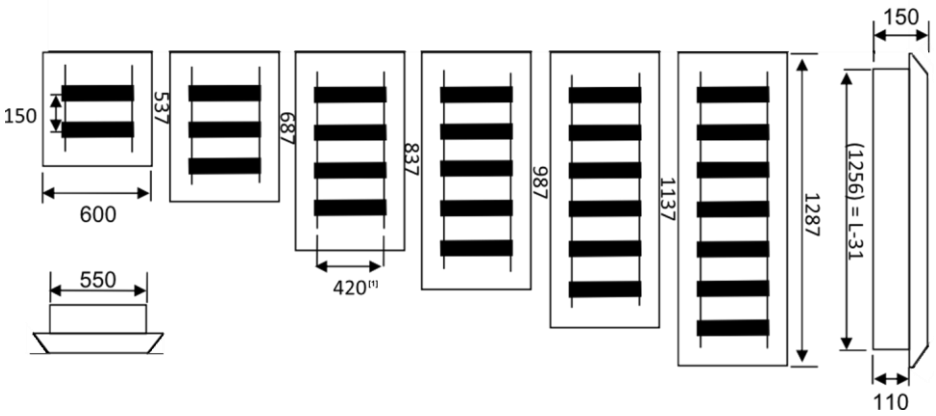
Example: FD42DN

4 Product range by VegaD flush

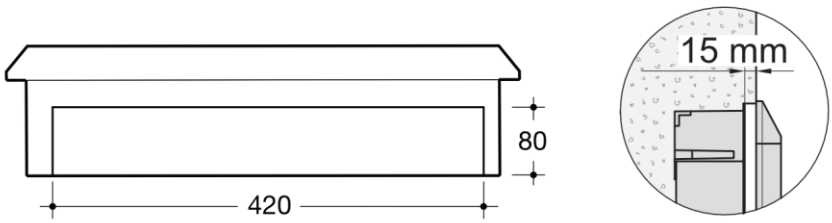
Chapter index

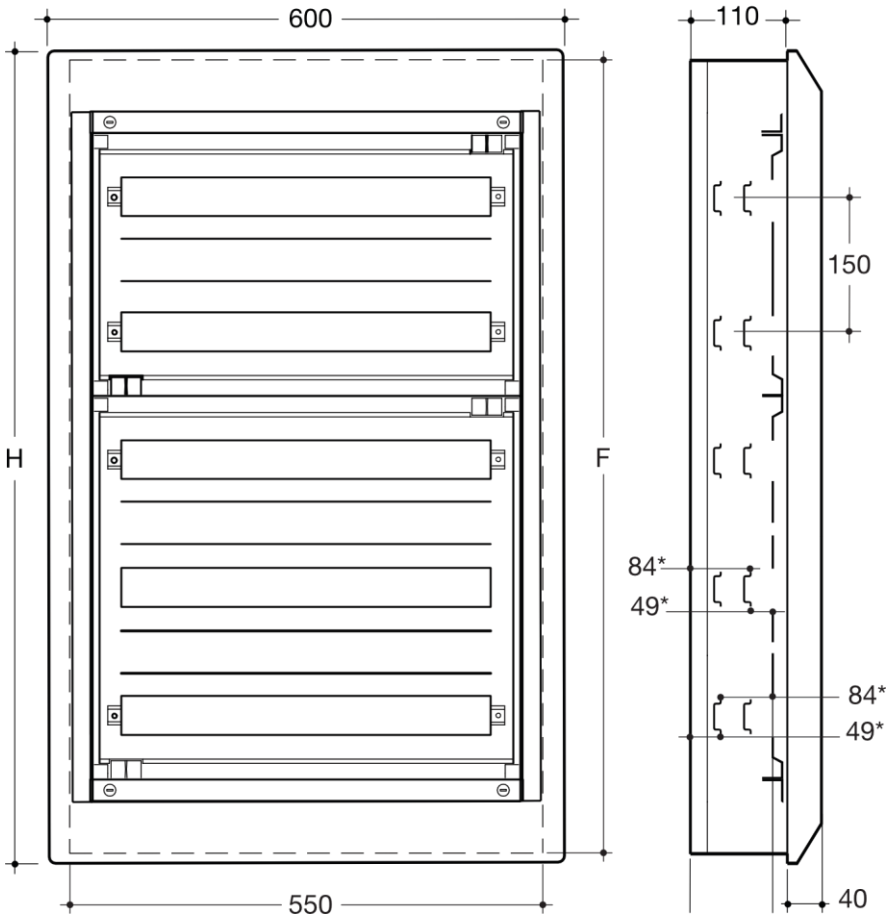
4.1 External dimensions

FUX2 DN full equipped



[1] Between uprights





4.2 DN Version

- full equipped without door
- with Quick-Connect terminals earth
- no Quick Connect neutral terminals are provided - they must be purchased seperately

Equipment standard	PEN QC holder 24 modules wide	Quick-Connect earth modules	Quick-Connectearth joiners	Side cable bracket for flush	Instruction sheet with Quick-Connect explanation	Cover slot strip JP002	4 screws kit 4x16 for optional PEN holder or slider fixing	Plaster cardboard protection	Paper cover marking strips 24 mod. and holder
FU42DN	1x	1x KN22E / 1x KN26E	1x KN99E	8x	1x	1x	1x	1x	4x
FU52DN	1x	1x KN22E / 1x KN26E	1x KN99E	10x	1x	1x	1x	1x	5x
FU62DN	2x	3x KN26E	2x KN99E	12x	1x	1x	1x	1x	6x
FU72DN	2x	3x KN26E	2x KN99E	14x	1x	1x	1x	1x	7x

Example: FU42DN

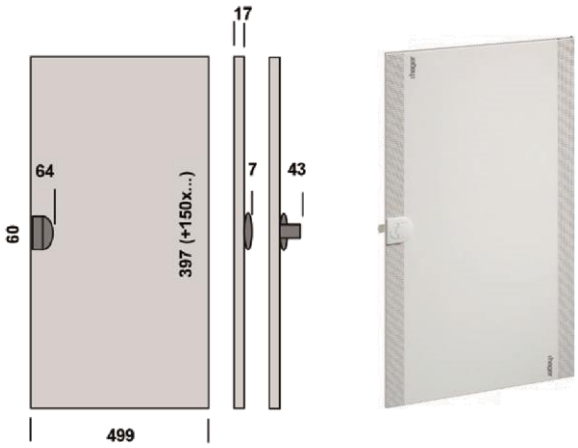
5 Doors for flush and surface enclosures

Chapter index

5.1 External dimensions

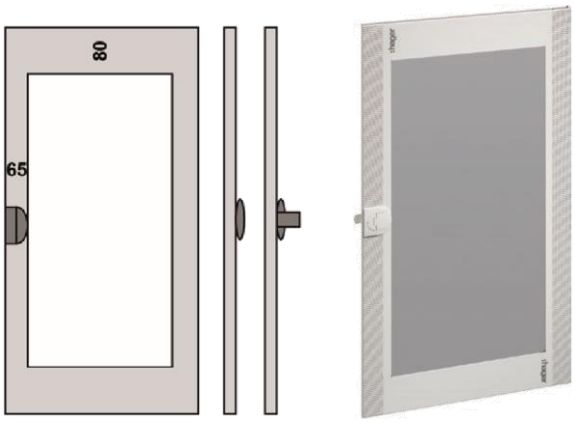
PN Version - plain door

Door material	Full steel door 1.2 mm thick
FD42PN	1x
FD52PN	1x
FD62PN	1x
FD72PN	1x



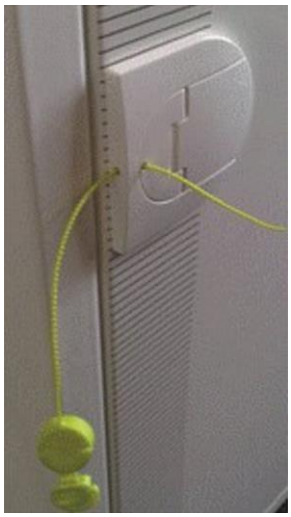
TN Version - transparent door

Door material	Tempered 3 mm glass
FD42TN	1x
FD52TN	1x
FD62TN	1x
FD72TN	1x



Closing seal

- Standard closing system can be sealed with max Ø 1,5 mm wire



- Standard closing system is available as spare part with reference FD00S0

5.2 Door mounting into enclosure frames

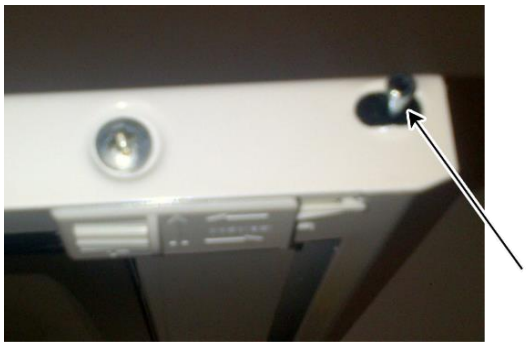
In VegaD flush enclosures, customer doesn't have to punch out metal openings for door closing latch, as they are already punched.

Also in VegaD surface enclosures, customer doesn't have to punch out plastic openings for door closing latch, as they are already extruded.

5.3 Door hinges

Each door is composed of 1 fix hinge and 1 removable one.

Both hinge positions can be adjusted up to ~2 mm by hand by turning small wheel (arrow), so that door fits perfectly into frame.



Hinges have a small gasket on metal pin, to prevent water to enter into enclosure and thus preserve IPx1.

6 Accessories

Chapter index

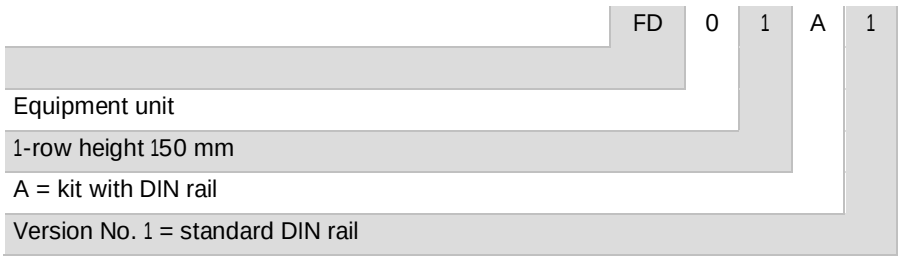
6.1 Naming rules

Equipment units, accessories and spare parts for VegaD system have been named according these rules:

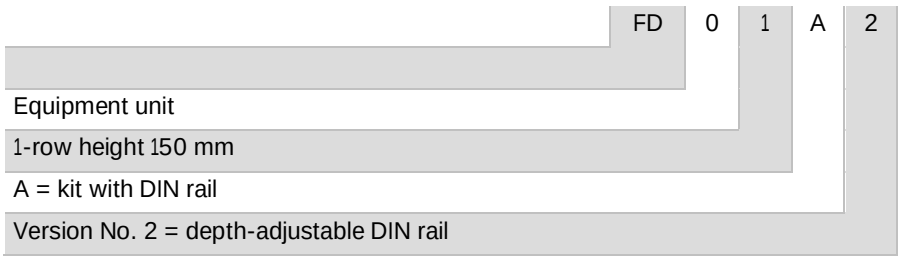
first 2 letters:	always FD
first number:	0 for equipment units, accessories and spare parts (VegaD system only)
second number:	0 for simple accessories and spare parts
	1 for equipment units 1-row height 150 mm
	2 for equipment units 2-rows height 300 mm
	3 for equipment units 3-rows height 450 mm
third letter:	Product type
third number:	Product version

Examples

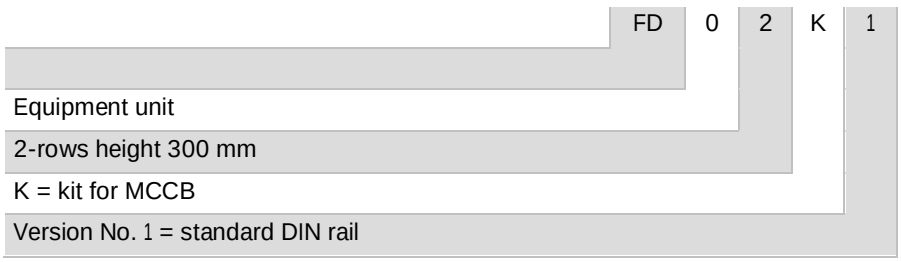
FD01A1:



FD01A2:



FD02K1:

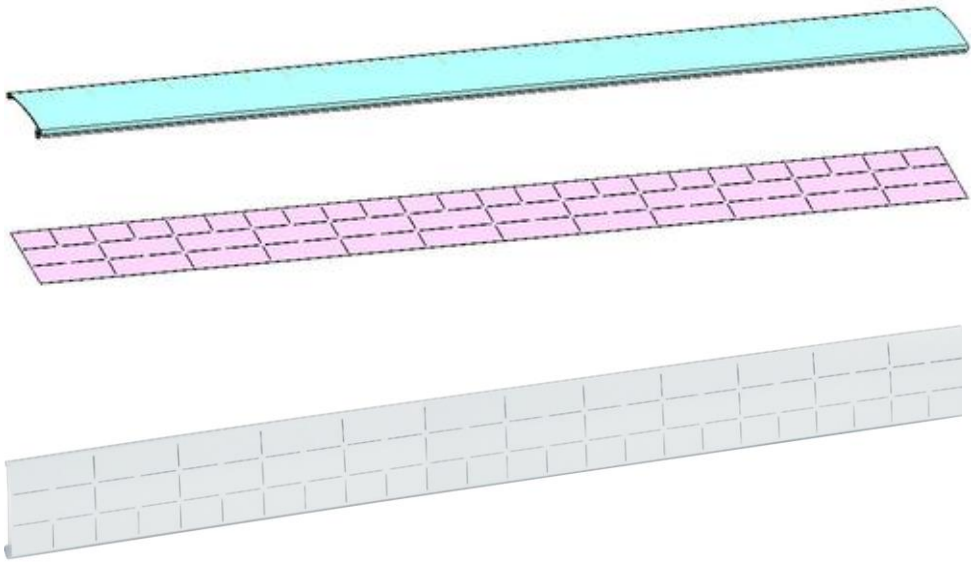


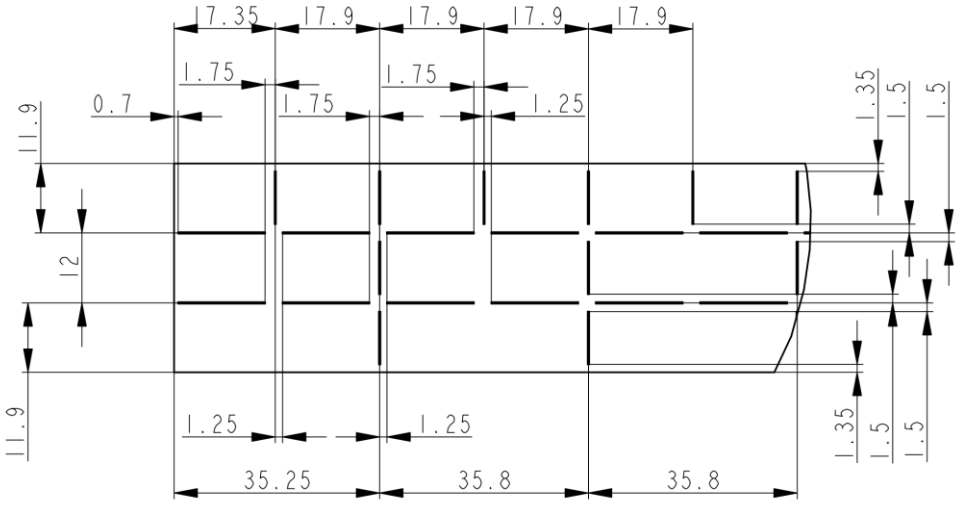
6.2 Single and spare parts

6.2.1 FD00A… = Standard Accessories

FD00A1: 10x label holder+paperstrip 24 mod.

- all 24 mod. slotted covers in enclosures and equipment kits are already delivered with 1x label holder+paperstrip 24 mod. to snap-in
- Reference to use as spare part or to double labels on a row (top and bottom, for example for Tebis with 2 outputs)
- paper length 428 mm
- 1-sided printed, other side blank





6.2.2 FD00B… = Side Brackets for vertical cables

FD00B1: 10x side Brackets for vertical cables for surface versions

- all equipped surface enclosures and kits with 24 mod. DIN rails are already delivered with 2 brackets per DIN rail
- Reference to use as spare part or to complete first two-rows in AN or MN versions or to equip GN versions

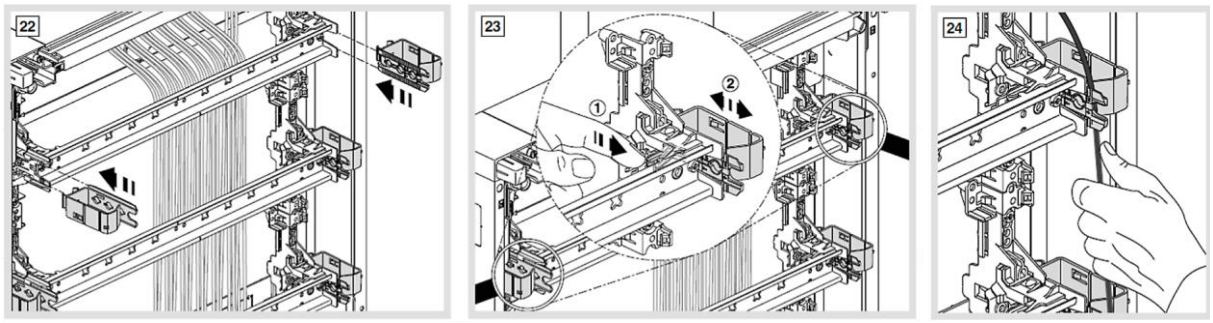
USP: Part can be used in 3 different positions through cut-outs at 2 different points (see arrows):

Pos. 1:
from top (without cut-out)

Pos. 2:
from top (with cut-out) for trunking fixation

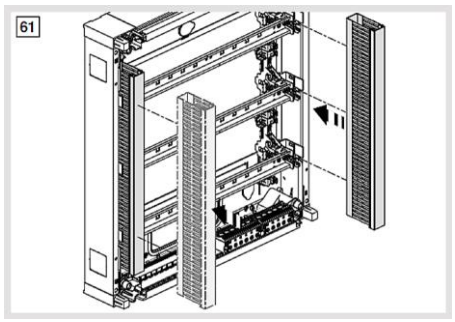
Pos. 3:
turned 180° (with or without cut-out)

Pos. 1:



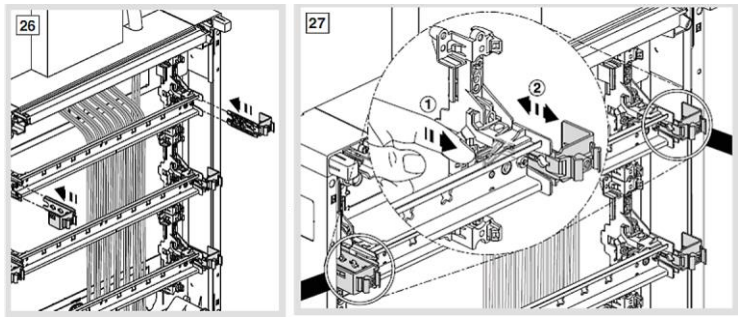
Part can be snapped-in into 3 different depths (20 mm raster) and loosen though finger pressure under orange DIN rail holder.

Pos. 2:

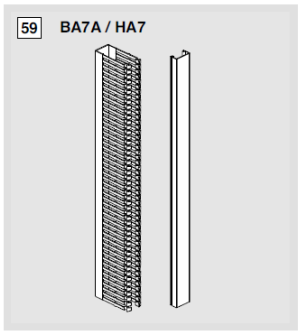


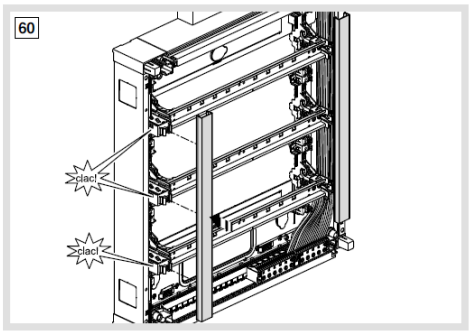
Part can be snapped-in into 3 different depths (20 mm raster) and loosen though finger pressure under orange DIN rail holder. Tehalit trunkings BA7A / HA7 can be snapped on part cutted-out like this. Through 20 mm raster, height of vertical trunking cover can be adapted to horizontal trunking cover height (as Tehalit trunkings are 60, 80 or 100 mm high).

Pos. 3:



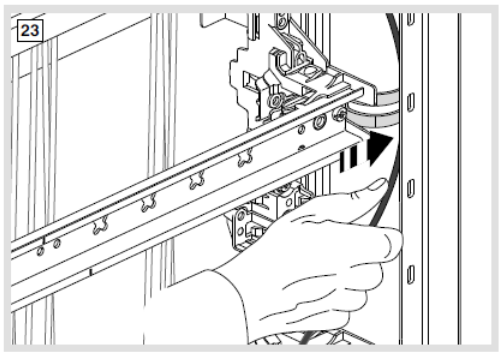
Part can be snapped-in into 3 different depths (20 mm raster) and loosen though finger pressure under orange DIN rail holder. Cover 30 mm width from Tehalit trunking BA7A / HA7 can be snapped on part mounted in this 180° turned position. Through 20 mm raster, height of vertical cover can be adapted to horizontal trunking cover height (as Tehalit trunkings are 60, 80 or 100 mm high).



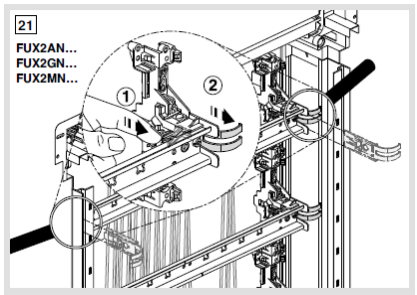


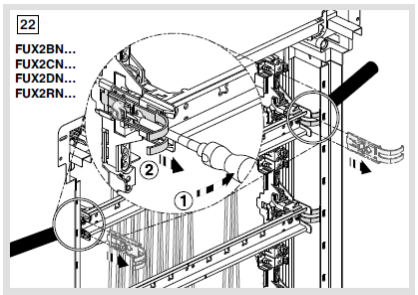
FD00B2: 10x side Brackets for vertical cables for flush versions

- all flush enclosures are already delivered with 2 brackets per DIN rail
- Reference to use as spare part or to complete first two-rows in AN or MN versions or to equip GN versions



- Part can be snapped-in into 1 single position and loosen:
  - through pressure from top with screwdriver on plastic lever (flush low depth)
  - through finger pressure under orange DIN rail holder (flush high depth)





6.2.3 FD00C… = Covers

Covers can be mounted on all surface and flush enclosures

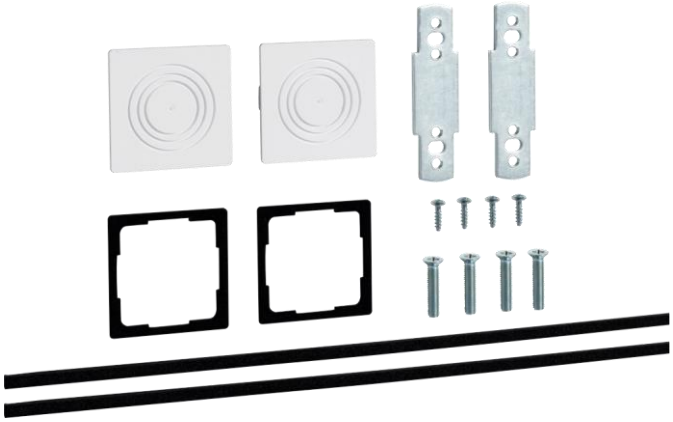
FD00C2: 300 mm plain cover 24 mod.

- Plain area in the middle: 430 x 268 mm
- 2 slots top/bottom enable fixing of marking strips FD00A1

6.2.4 FD00F… = Fixation kit

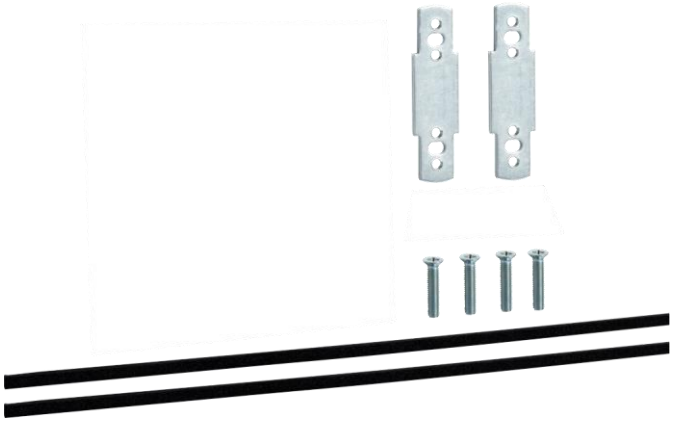
FD00F1: Fixation kit (for surface versions only)

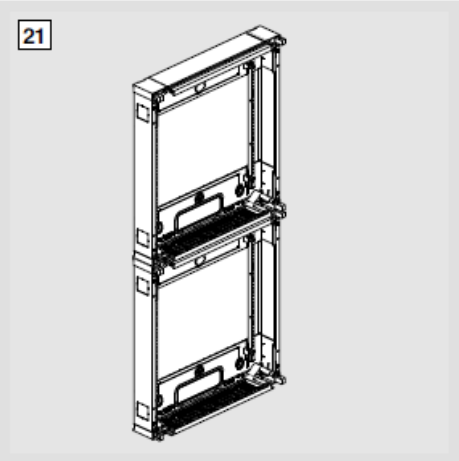
- to associate 2 surface enclosures vertically
- to associate 2 surface enclosures horizontally



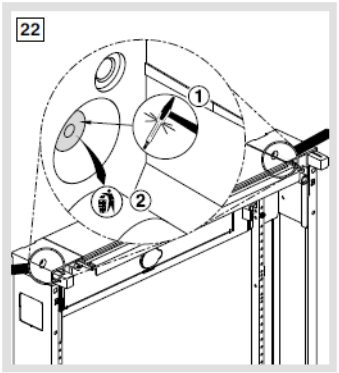
Vertical association (first enclosure already wall-mounted)

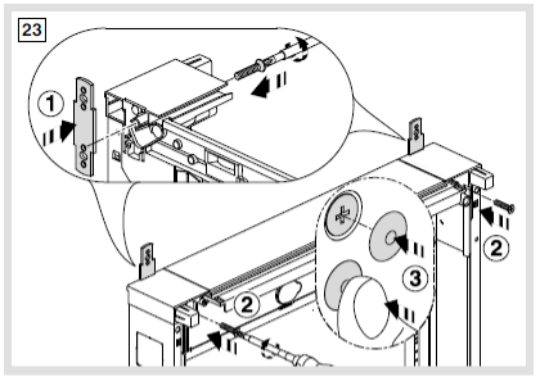
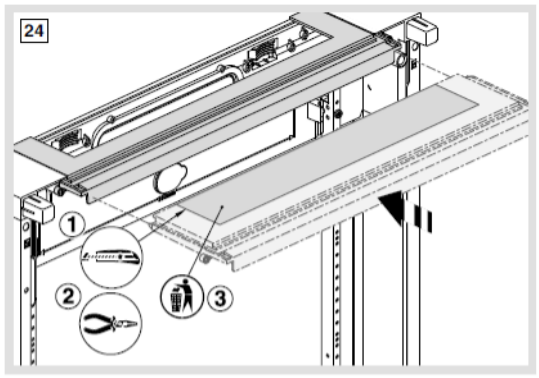
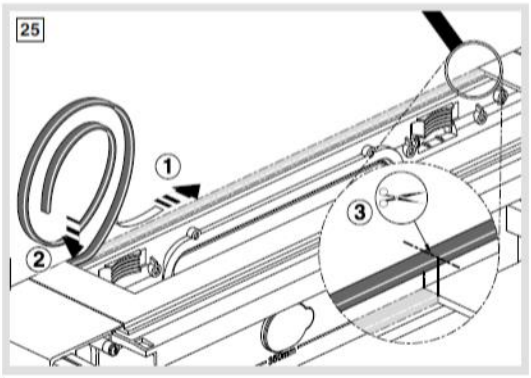
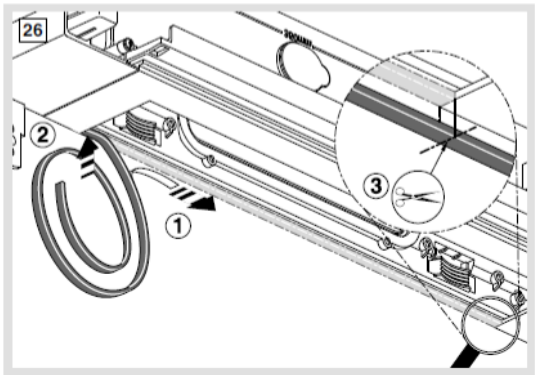
Needed are following parts:

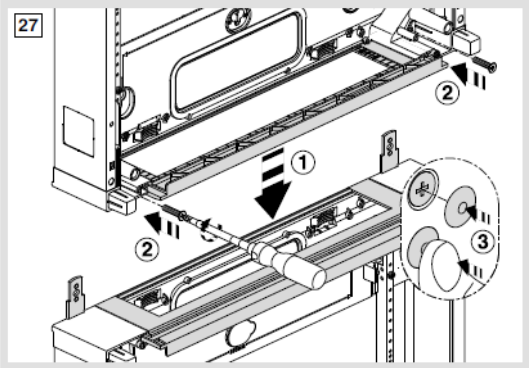




Step	Action
1	Perforate holes left/right hand side with screwdriver and hammer [22]

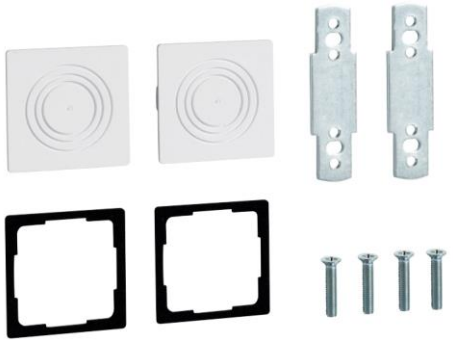


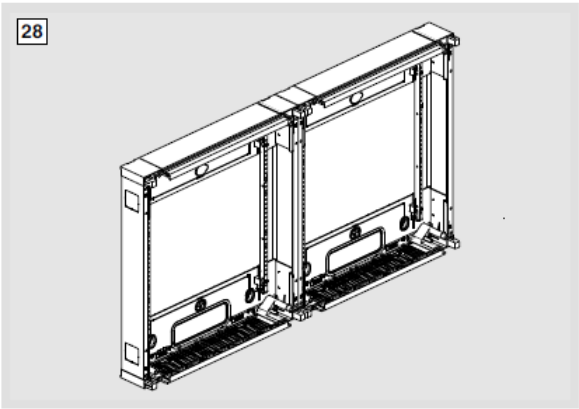
Step	Action
2	Insert fixing plates from the top and screw them from the inside with M6 screws [23] 
3	Cut cable entry plate opening as wished and stick gasket in between [24] [25] [26]   

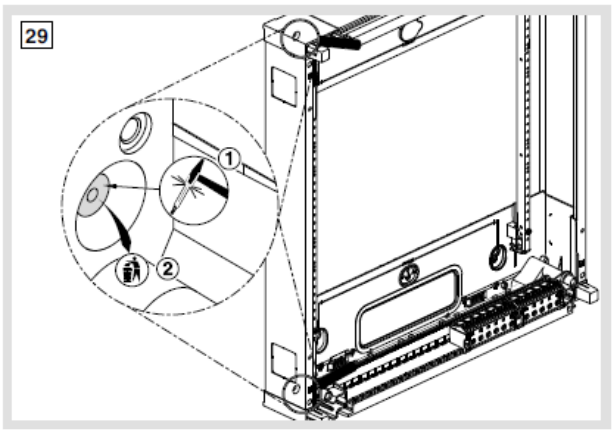
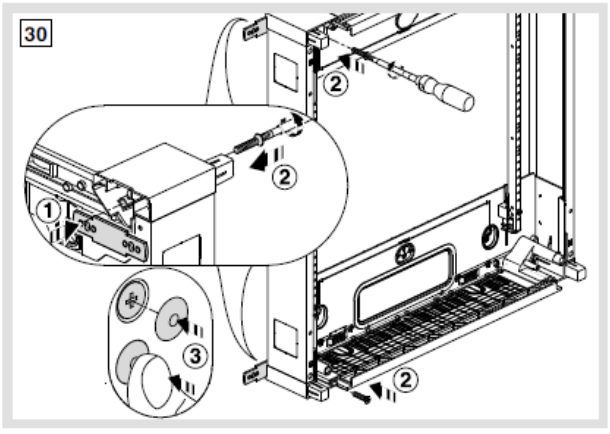
Step	Action
4	Insert top enclosure through fixing plates above first enclosure [27] 
5	Screw them from the inside with M6 screws [27]
6	Put insulation caps above all M6 screw heads [27]

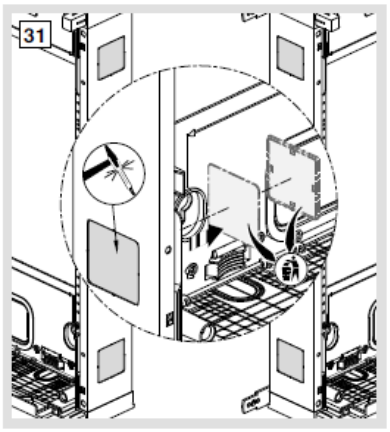
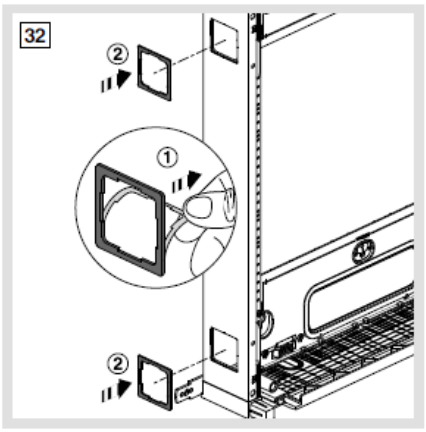
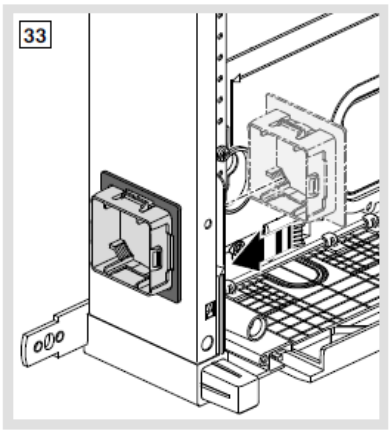
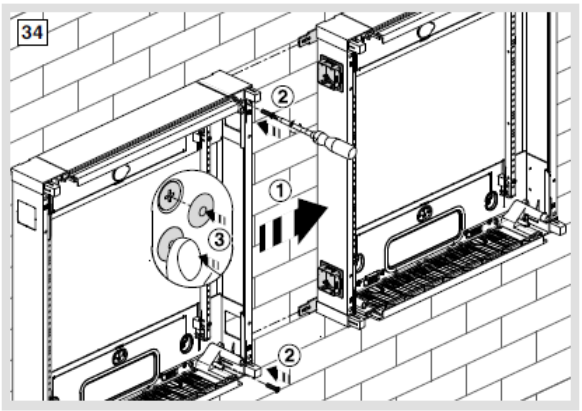
Horizontal association (first enclosure already wall-mounted)

Needed are following parts:



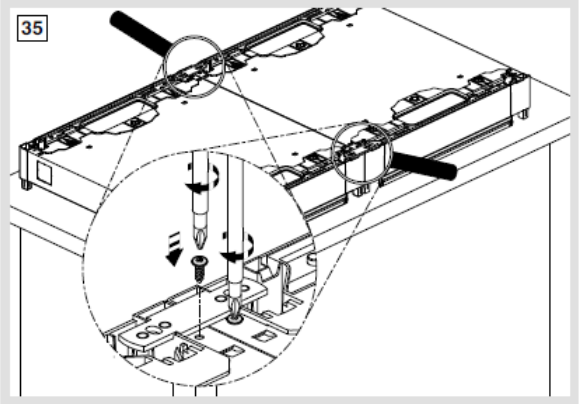


Step	Action
1	Perforate holes top/bottom side with screwdriver and hammer [29] 
2	Insert fixing plates from the side and screw them from the inside with M6 screws [30] 

Step	Action
3	Perforate side openings with a hammer and stick gasket around them [31] [32]  
4	Insert side plates top/bottom from the inside [33] 
5	Snap second enclosure from the side over fixing plates [34] 
6	Screw them from the inside with M6 screws [34]
7	Put insulation caps above all M6 screw heads [34]
8	Fix second enclosure at the wall with both hands free (USP)

Horizontal association or vertical association with both enclosures on table

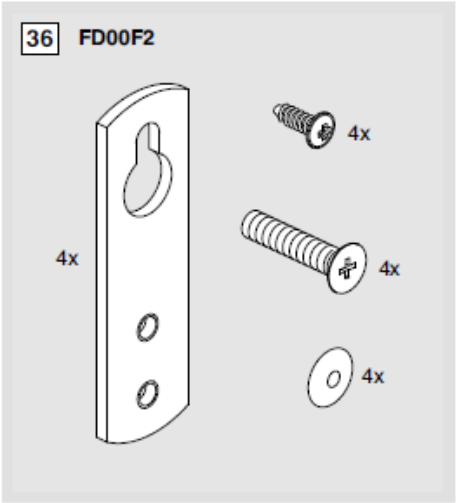
⇨ Same process as related above plus following step:



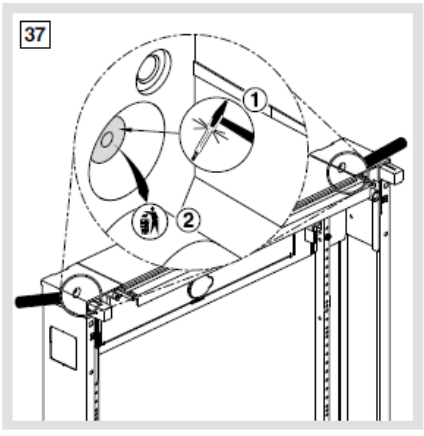
- Reinforce stability of assembly by 4x screwing top/bottom plastic parts of the enclosure with metallic back panel with 4 small screws delivered-by

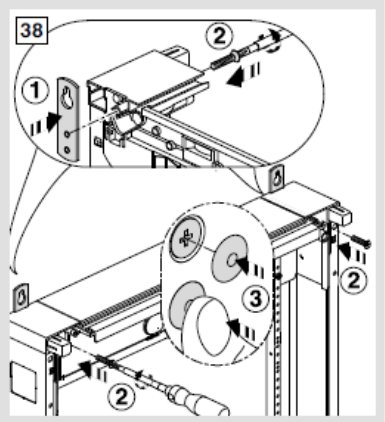
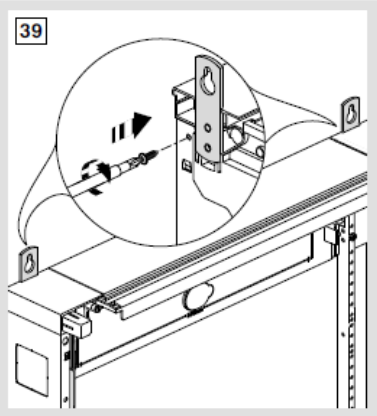
FD00F2: Fixation kit (for surface versions only)

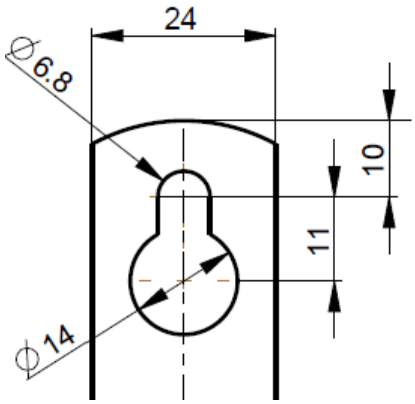
- to mount a surface enclosure with 4 external fixing plates

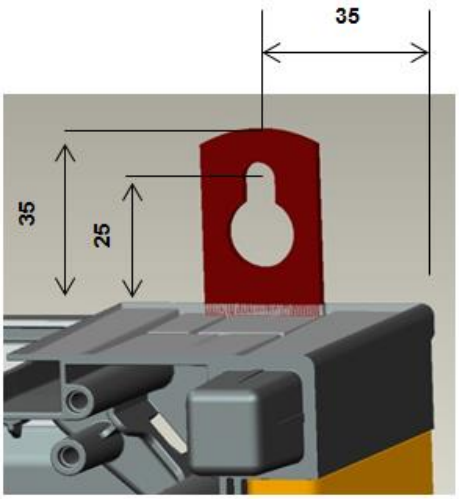


Step	Action
1	Perforate holes left/hand right side and top/bottom with screwdriver and hammer [37]



Step	Action
2	Insert external fixing plates from the top and screw them from the inside with M6 screws [38] 
3	Reinforce stability of assembly by 4x screwing top/bottom plastic parts of the enclosure with metallic back panel with 4 small screws delivered-by [39] 





Distances between fixing holes: Width = 480 mm / Height = Enclosure height + 50 mm

6.2.5 FD00Q1, KN00A: Quick-Connect terminal holder

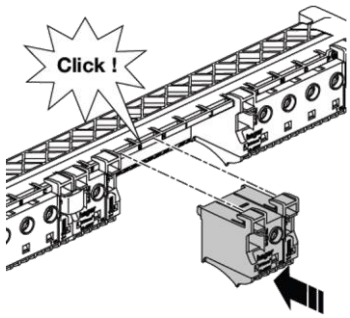
FD00Q1: 1x Quick-Connect holder (for surface FD* and flush low-depth FU* versions)

- to use as spare part or to complete 42 or 52 versions (delivery form with only 1)
- 62 and 72 versions are equipped with 2 (1 on top, 1 on bottom side)
- Part to snap-in on back panel top/bottom plastic part
- Part can be optionally 2x screwed to back panel top/bottom plastic part with 4 screw bag delivered-by
- Fixation screws are the same than for cable entry plate fixing (Ø 4x16 mm).
- max. input: 80 x 4 mm^2 / 24 x 25 mm^2

KN00A: QC Terminal carrier, Universal adapter (DIN or Clip)

- used for mounting additional links into boards equipped with DIN rails (Golf, Vector, VegaD …)
- can be clipped onto DIN rails that are 1 mm or 1.5 mm thick, either horizontally or vertically
- max. input: 20 x 4 mm / 6 x 25 mm^2 (up to 1x KN26*)
- dimensions = 105 mm width, 35 mm height, 42 mm depth

QC links can be clipped onto both terminal carriers KN00A and FD00Q1 (see next chapter)

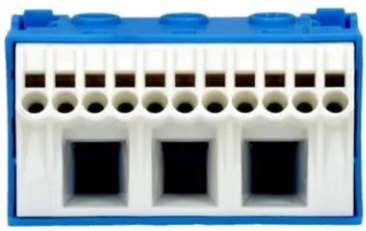


6.2.6 KNxxx: Hybrid Quick Connect (QC) terminals

KNxxx: Hybrid Quick Connect (QC) terminals

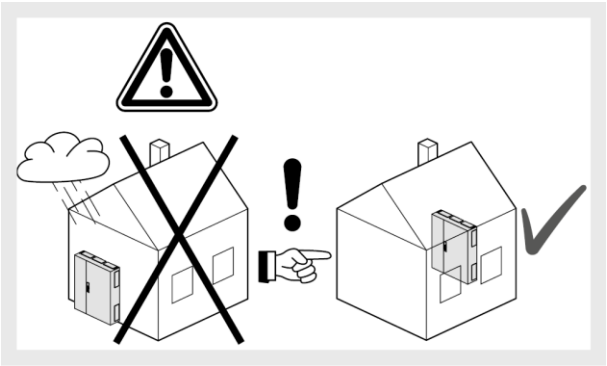
The Hager Vega D enclosures are compatible with the Hager Hybrid Quick Connect terminals, which are available in different sizes and colours. Versions DN are already equipped with earth terminals (see 3.2 and 4.2).

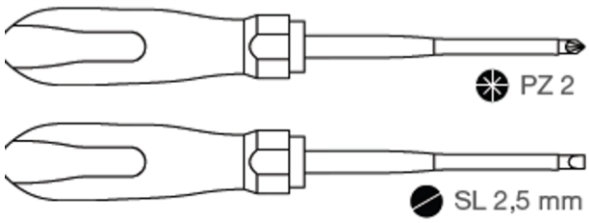
These terminals are specifically designed to offer a combination of connections in a compact format, with each terminal block being fully insulated to allow for flexible terminal configuration. Terminals can be electrically inter-connected or separated through the use of bridging clips KN99x.



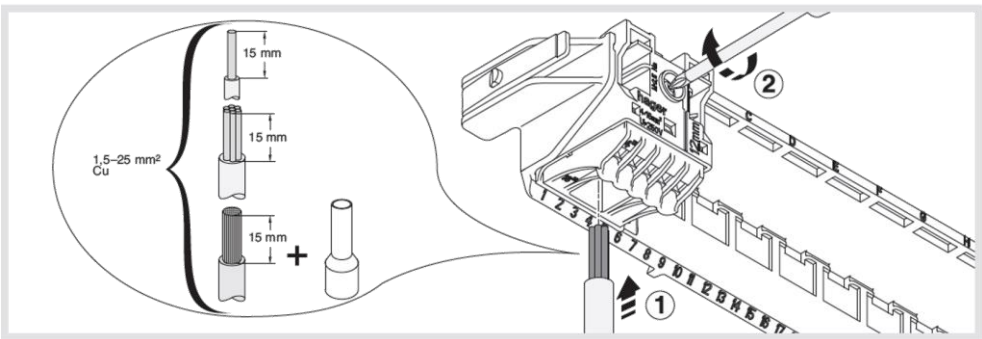
These links are designed for indoor use at up to 63 A and can be used with a flat screwdriver for small sections and a cross-head screwdriver for the big sections.

U_N: AC 230 V / 50 Hz
I_N: AC 63 A
T: -5 °C ... +40 °C
IP2X

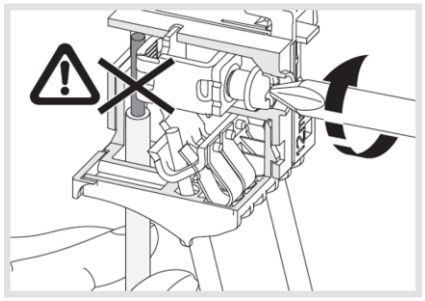


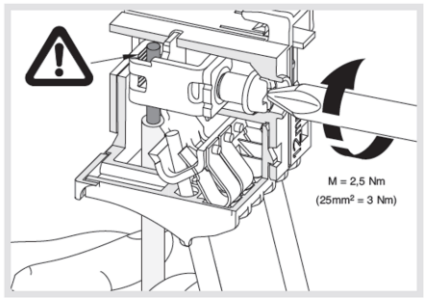


The larger diameter terminals are of traditional screw type and can terminate stranded, twisted or ferruled conductors of between 1.5 mm^2 to 25 mm^2.

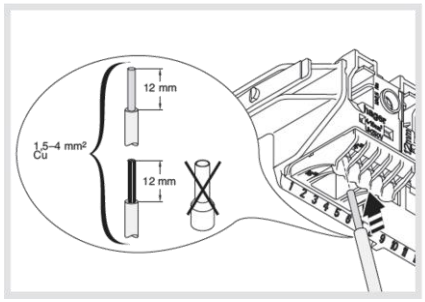


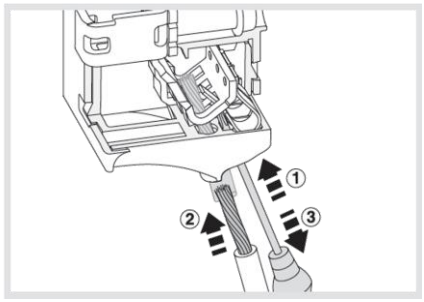
Ensure the connection by inserting the cable into the steel cage clamp.





- The smaller more numerous ‘QC’ terminals are a push in clamp type and can terminate stranded or solid copper conductors of 1.5 mm^2 to 4 mm^2.





Neutral Terminal Blocks

	Description	Width	Reference
	Terminal, QC, Neutral, 6 connections	30 mm	KN06N
	Terminal, QC, Neutral, 10 connections	45 mm	KN10N
	Terminal, QC, Neutral, 14 connections	60 mm	KN14N
	Terminal, QC, Neutral, 18 connections	75 mm	KN18N
	Terminal, QC, Neutral, 22 connections	90 mm	KN22N
	Terminal, QC, Neutral, 26 connections	105 mm	KN26N

Jumper for Neutral Terminal Blocks

To connect the Neutral Terminal Blocks KNxxN

Description	Reference
Terminals, QC, Neutral, Jumper (1 set = 10 pieces)	KN99N

Earth Terminal Blocks

	Description	Width	Reference
	Terminal, QC, PE, 6 connections	30 mm	KN06E
	Terminal, QC, PE, 10 connections	45 mm	KN10E
	Terminal, QC, PE, 14 connections	60 mm	KN14E
	Terminal, QC, PE, 18 connections	75 mm	KN18E
	Terminal, QC, PE, 22 connections	90 mm	KN22E
	Terminal, QC, PE, 26 connections	105 mm	KN26E

Jumper for Earth Terminal Blocks

To connect the Earth Terminal Blocks KNxxE

Description	Reference
Terminals, QC, PE, Jumper (1 set = 10 pieces)	KN99E

Phase Terminal Blocks

Description	Width	Reference
Terminal, QC, Phase, 6 connections	30 mm	KN06P
Terminal, QC, Phase, 10 connections	45 mm	KN10P
Terminal, QC, Phase, 14 connections	60 mm	KN14P
Terminal, QC, Phase, 18 connections	75 mm	KN18P
Terminal, QC, Phase, 22 connections	90 mm	KN22P
Terminal, QC, Phase, 26 connections	105 mm	KN26P

Jumper for Phase Terminal Blocks

To connect the Phase Terminal Blocks KNxxP

Description	Reference
Terminals, QC, Phase, Jumper (1 set = 10 pieces)	KN99P

6.2.7 FD00P… = Plate for cable entry

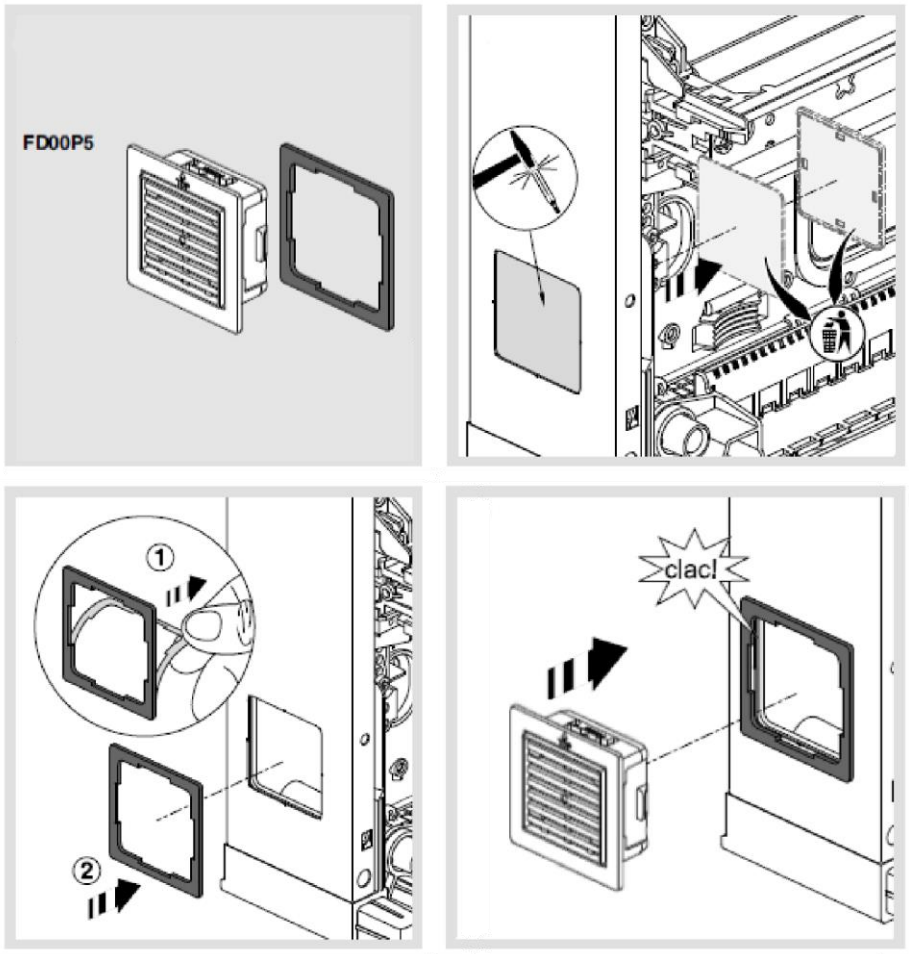
FD00P5: 2x Side plate for aeration (for surface versions only)

Aeration grid reduces IP41 to IP30. For mounting see.

Power loss effect +27 % to 64 % with kit mounted asymmetrically (for example top left- and bottom right-hand side) on distribution enclosure FD (see also chapter 'power loss' starting on page 60).

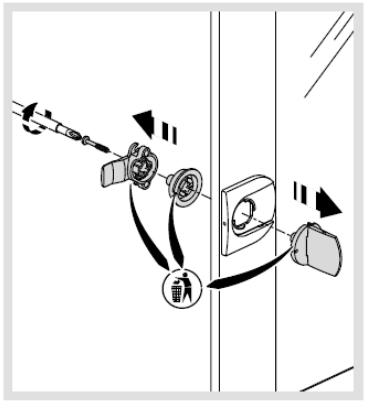
Enclosure				Permissible power loss P_{perm} for standard surface enclosures without ventilation openings						Permissible power loss P_{perm} for standard surface enclosures with diagonal ventilation openings FD00P5						
Type	Height H	Width B	Depth B	Surface mounted with temperature rise **Δ**t					% Enclosure height	**Δ%**	Surface mounted with temperature rise **Δ**t					% Enclosure height
				10K	15K	20K	25K	30K			10K	15K	20K	25K	30K	
	mm	mm	mm	W	W	W	W	W			W	W	W	W	W	
FD42...	750	500	193 (Depth installation room 135 mm)	20,6	34,1	48,8	64,4	80,7	75	+29 %	20,6	34,1	48,8	64,4	80,7	75
				26,5	43,8	62,7	82,7	130,8	50	+25 %	26,5	43,8	62,7	82,7	103,8	50
FD52...	900			23,5	38,9	55,6	73,4	92,1	75	+40 %	23,5	38,9	55,6	73,4	92,1	75
				30,6	50,7	72,6	95,8	120,1	50	+30 %	30,6	50,7	72,6	95,8	120,1	50
FD62...	1050			26,4	43,7	62,5	82,5	103,5	75	+51 %	26,4	43,7	62,5	82,5	103,5	75
				34,7	57,5	82,3	108,6	136,5	50	+40 %	34,7	57,5	82,3	108,6	136,2	50
FD72...	1200			28,5	47,1	67,4	89	111,6	75	+64 %	28,5	47,1	67,4	89	111,6	75
				39,3	65	93	122,7	154	50	+50 %	39,3	65	93	122,7	154	50

FD00P5 mounting instructions



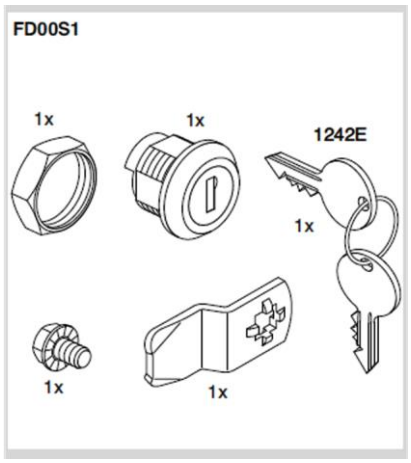
6.2.8 FD00S… = Serrure (closing system)

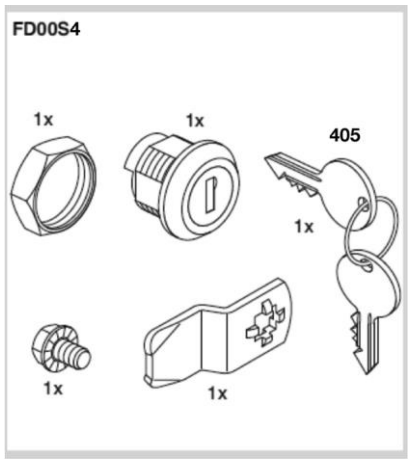
FD00S0: Standard closing system as spare part

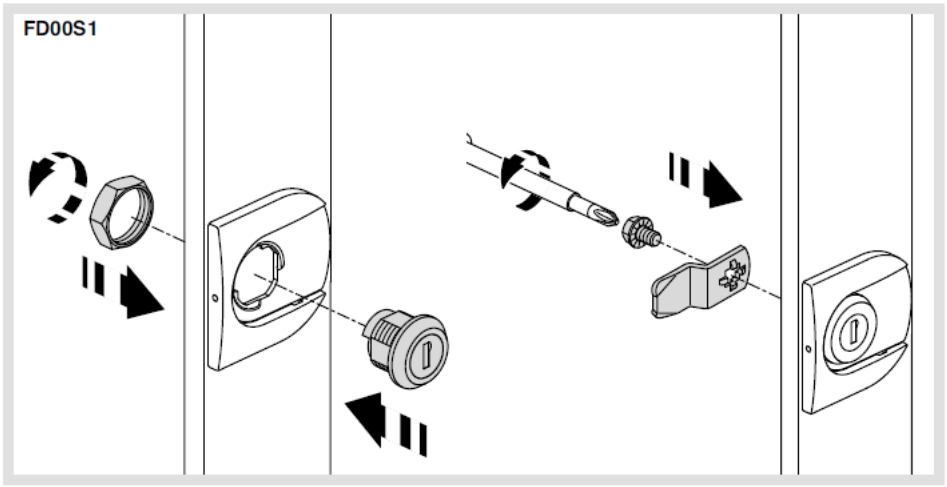


Mounting / Dismounting schema

FD00S1 / FD00S4: key closing system 1242E / 405



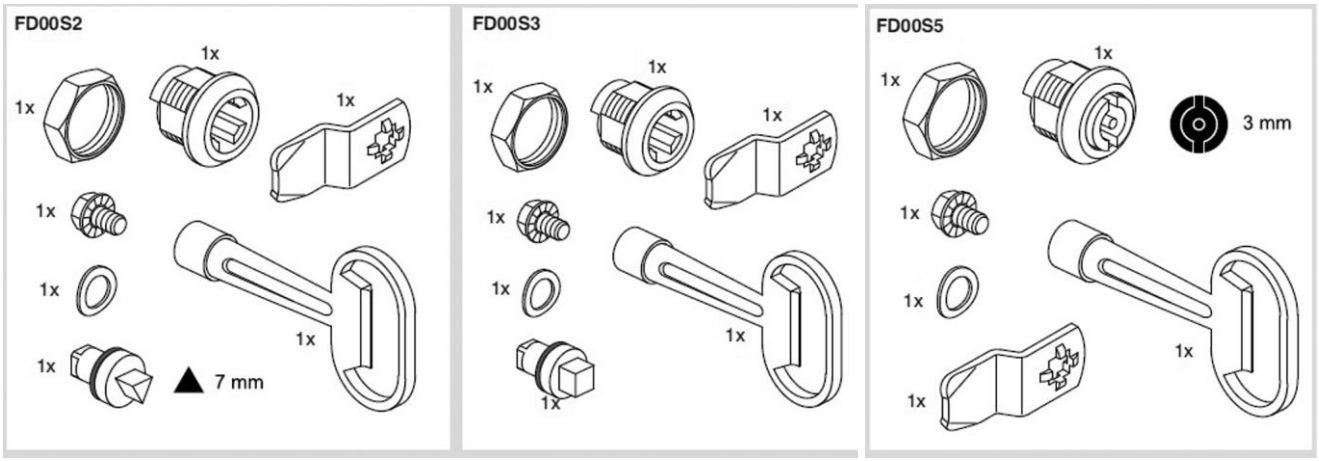


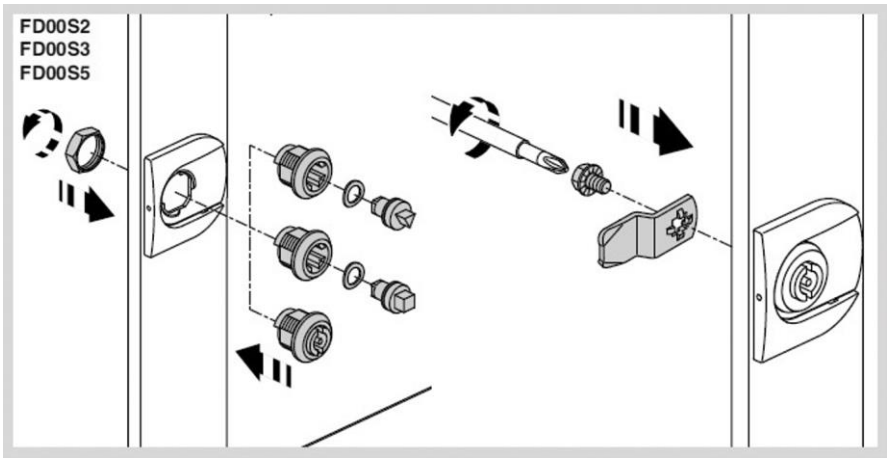


Mounting schema

FD00S2 / FD00S3 / FD00S5: special closing system triangle 7 mm / square 7 mm / two-way 3 mm

- All references are delivered with tool





Mounting schema

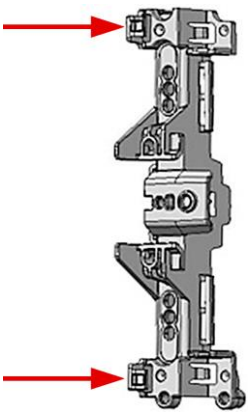
6.2.9 BA7A… = vertical trunkings sideways

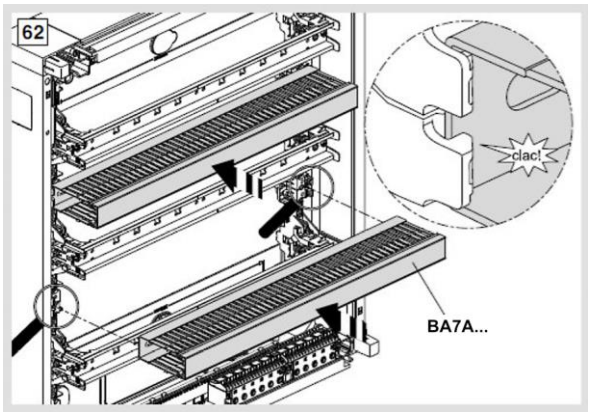
Standard BA7A profile with 12,5 mm interslot distance are compatible with VegaD fixing, but have to be cut from 2 m profile to 438 mm length by the installer.

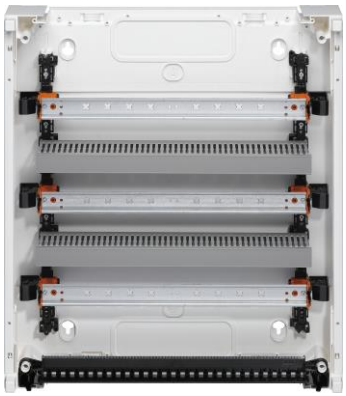
BA7A trunking references shown in table below can be mounted vertically (with brackets FD00B1) and horizontally in VegaD surface enclosures. Thus, it is possible to combine horizontal and vertical trunkings to get a clean installation picture.

Horizontal and vertical trunking installation into surface enclosure

Trunkings can be quickly fixed horizontally between 2 rows without tool, simply by clipping them on black base element FD00H1 (see red arrows).







In flush-mounted enclosures it is also possible to clip-on smaller BA7A profiles cut to 438 mm like 40x30 mm or 60x30 mm. See compatibility below:

BA7A range (PCV) RAL 7030 dark grey, length 2 m		
BA7A40030	40x30 mm	For all VegaD surface and flush
BA7A60030	60x30 mm	
BA7A80030	80x30 mm	Only for VegaD surface FD*
BA7A100030	100x30 mm	

6.2.10 UZ…V. = Univers N cable brackets

UZ01V1: 20x adapter for cable bracket Univers N

- The adapter can be mounted on standard Univers DIN rail in each hole with flower shape
- The adapter can receive small bracket UZ25V2 (surface, flush high-depth and flush low-depth versions) or big bracket UZ25V1 (surface and flush high-depth versions only)

UZ25V2: 20x small bracket for cables Univers N

- Part to snap-in on adapter UZ01V1
- Single cover UT50C from cable tray Univers can be snapped on its top to hide cables below
- Part can be also mounted 180° without adapter under standard Univers DIN rail in each hole with flower shape (surface and flush high-depth versions only)

UZ01V1 UZ25V2

Mounting example in flush high-depth

6.2.11 ZZ42BS Door frame fixing plastic screws

ZZ42BS: Plastic Screws for frame mounting of Vega D

ZZ42BS

Plastic screws (for surface and flush) can be ordered as spare part under ZZ42BS ref (BS stands for "Blind frame Screws")

7 Packaging and dimensions of enclosures

Chapter index

7.1 Pictures of packaging

Enclosures:

2-pieces Hager brand card-board packaging with 2 white Hager labels 175x90 mm

Equipment units and covers:

1 piece Hager brand card-board packaging with 2 white Hager labels 85x60 mm

Single parts:

plastic bag packaging with 1 white Hager label 85x60 mm or pre-printed

Single doors:

1-piece Hager brand card-board packaging with 2 white Hager labels 100x73 mm

7.2 Packaging use at the workshop or at the construction site

As both surface & flush protective cardboards are made of 2 pieces, VegaD enclosure packagings are very easy to open. At the workshop or at the construction site, it is also recommended to use the first half for protecting frame or frame with door and the other half to for protecting back panel, chassis or door.

Surface enclosure packaging:

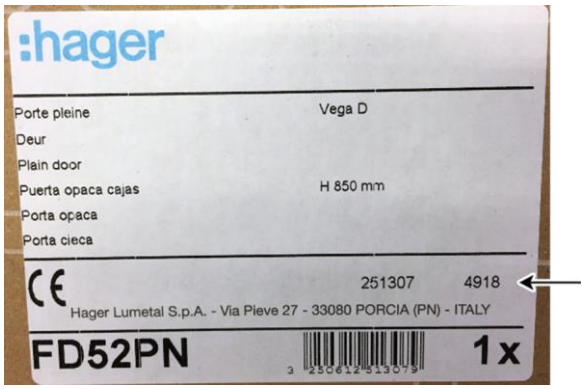
Flush low- and high-depth enclosure packaging:

7.3 Labels

7.3.1 Labels on cardboard packaging

Traceability code:
Enclosures
30481218 =
Year 23, Day 048,
Hour 12, Minute 18

Traceability code:
Equipment units
30530846 =
Year 23, Day 053,
Hour 08, Minute 46



Traceability code:
Doors
4918 = Week 49,
Year 18 (2018)

7.3.2 Enclosure type labels

Traceability code:
Enclosures
190291551 =
Year 19, Day 029,
Hour 15, Minute 51

7.4 Dimensions and weights of enclosures

7.4.1 Surface enclosures without door (FD..DN)

Surface enclosures VegaD	Height	Width	Depth	N° per palette	Weight (un-packed)	Weight (packed)	Height (packed)	Width (packed)	Depth (packed)
	mm	mm	mm	pcs.	kg	kg	mm	mm	mm
FD42DN	750	550	193	8	12	13,2	780	560	200
FD52DN	900	550	193	8	14	15,4	930	560	200
FD62DN	1050	550	193	8	16,2	17,8	1080	560	200
FD72DN	1200	550	193	4	18,4	20,2	1230	560	200

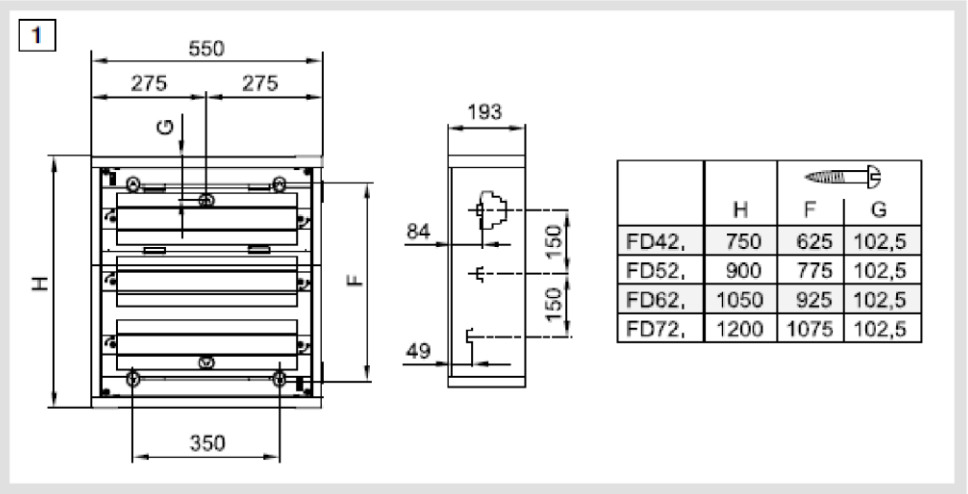
7.4.2 Flush enclosures without door (FU..DN)

Flush enclosures VegaD	Height	Width	Depth	N° per palette	Weight (un-packed)	Weight (packed)	Height (packed)	Width (packed)	Depth (packed)
	mm	mm	mm	pcs.	kg	kg	mm	mm	mm
FU42DN	837	600	150	10	12,8	14,2	875	645	160
FU52DN	987	600	150	10	15,4	16,8	1025	645	160
FU62DN	1137	600	150	5	19,8	19,6	1175	645	160
FU72DN	1287	600	150	5	20,2	22,2	1325	645	160

8 Wall fixation

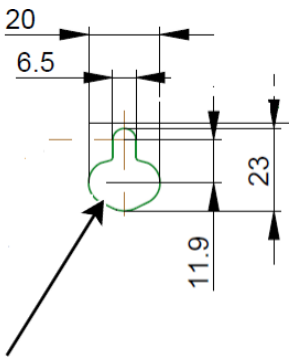
Chapter index

8.1 Wall-mounting for surface enclosures



	H	F	G
FD42,	750	625	102,5
FD52,	900	775	102,5
FD62,	1050	925	102,5
FD72,	1200	1075	102,5

There are 4 fixation holes (already perforated) at the edges and 2 in the middle (to cut/punch out) to use as pre-fixation.

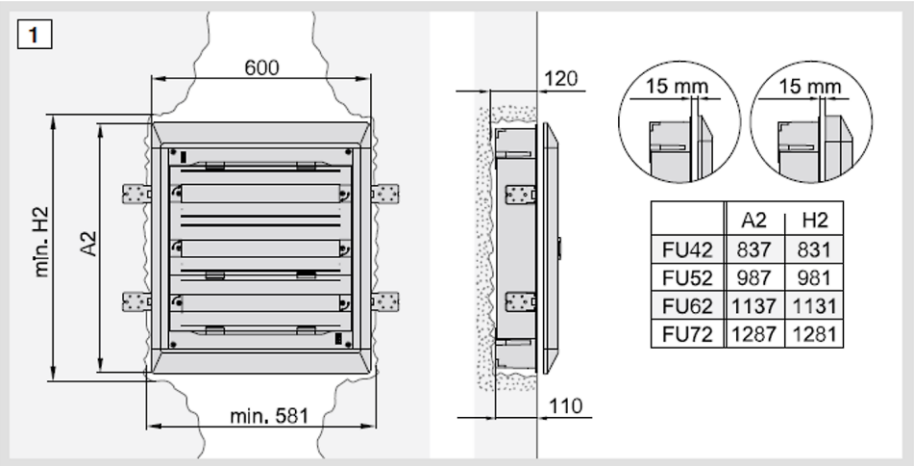


4 fixation holes at the edge have been enlarged to ease introduction of screw head and its grommet

All FD enclosures are delivered with 5 plastic caps for covering fixation holes.

There are also 4 external fixation plates with key holes that can be used for wall-mounting. They are available with accessory FD00F2.

8.2 Flush-mounting for flush enclosures



	A2	H2
FU42	837	831
FU52	987	981
FU62	1137	1131
FU72	1287	1281

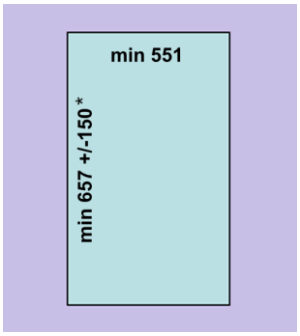
Flush holes dimensions are given by dims H2 and 581 mm in mounting instruction.

To ensure IP30 protection without door, a depth adjustment of the frame of 15 mm max. is recommended. Frame can be depth-adjusted until 23 mm above back panel by flush high-depth and more than 35 mm by flush low-depth.

For hollow-wall fixation, the kit VZ405N can be used. Minimal hole dimensions for hollow-wall mounting should be 551 mm width x total height – 30 mm (example: 1257 x 551 mm by FU72DN). See needed dimensions for flush hole below.

Flush fixation with hollow-wall kit VZ405N

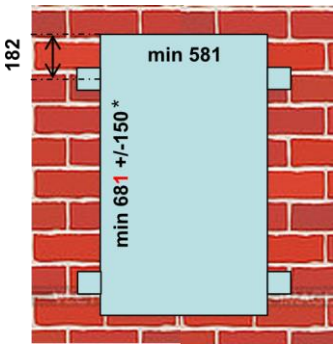
Hollow-wall opening dimensions:

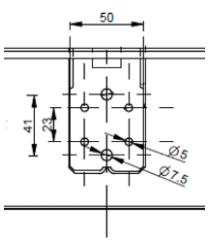


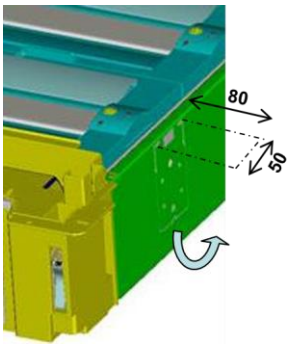
* = 3 rows

Flush fixation with side plates

Wall opening dimensions:



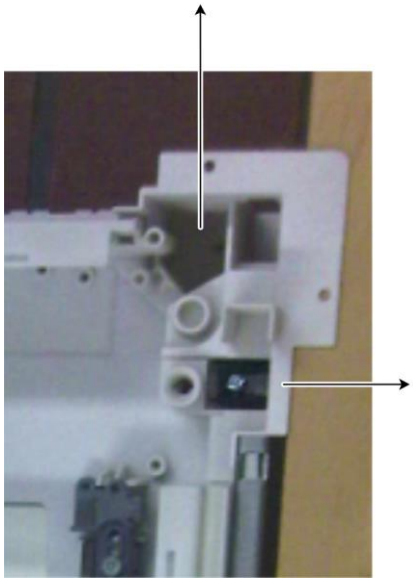




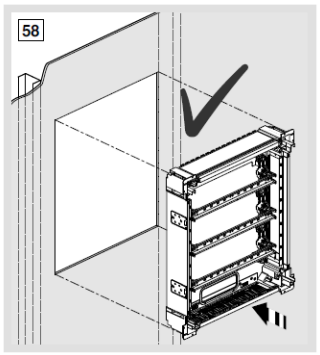
Side plates to bend out with screwdriver

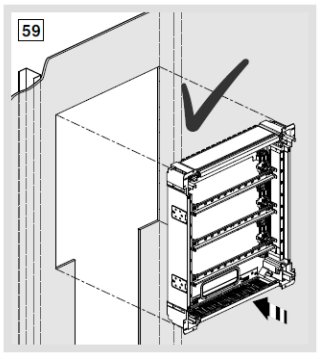
* = 3 rows

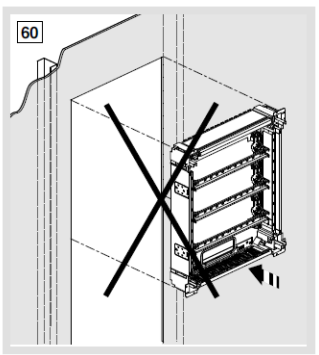
Kit VZ405N can be mounted horizontally or vertically until 30 mm wall thickness:

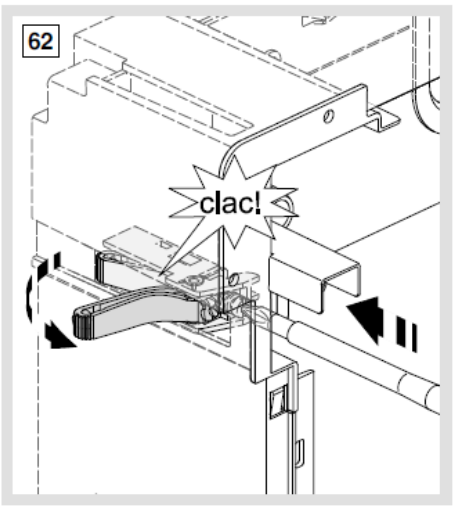


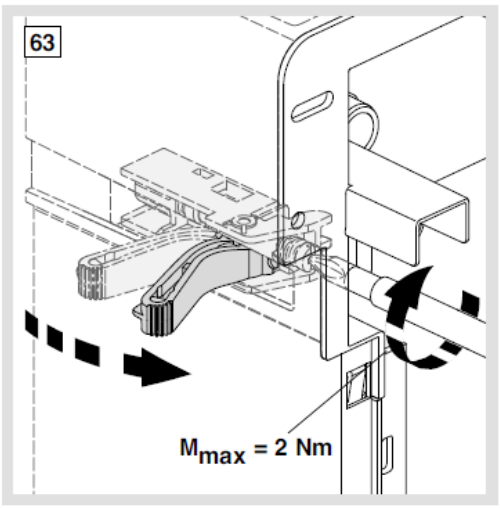
For hollow-wall installation it is recommended to support the lower edge of the enclosure by an accordingly designed opening, see following pictures. This ensures a good fixation over the years.





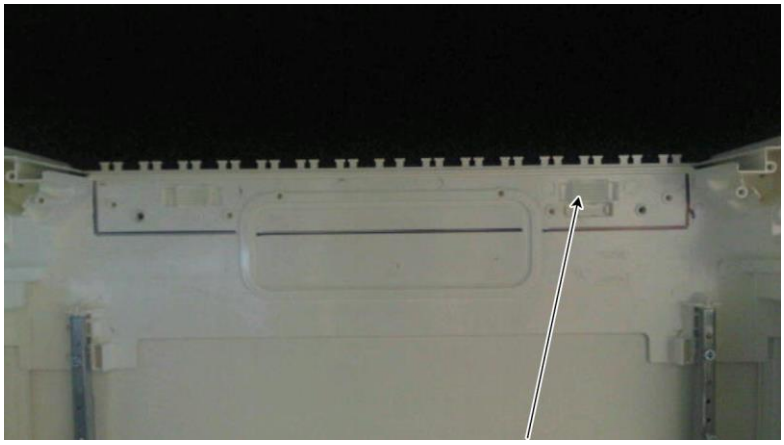




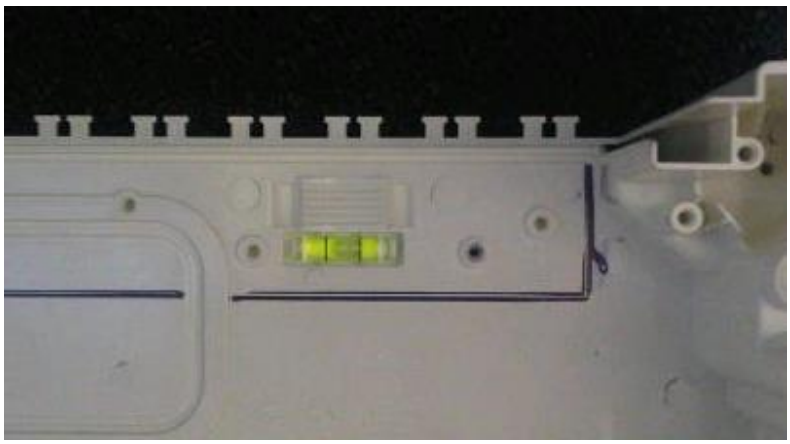


It is recommended to screw-in kit VZ405N with max. 2 Nm torque.

Another new feature in VegaD flush enclosures is the possibility to cut out the plastic top/bottom part for inserting back panel in a hollow-wall with cable arrivals both sides top/bottom. It is only possible with an added opening in back panel. For this, a line has been designed on the plastic part (black line on the picture), so that the installer can follow it with a cutter and needs only to cut out plastic.

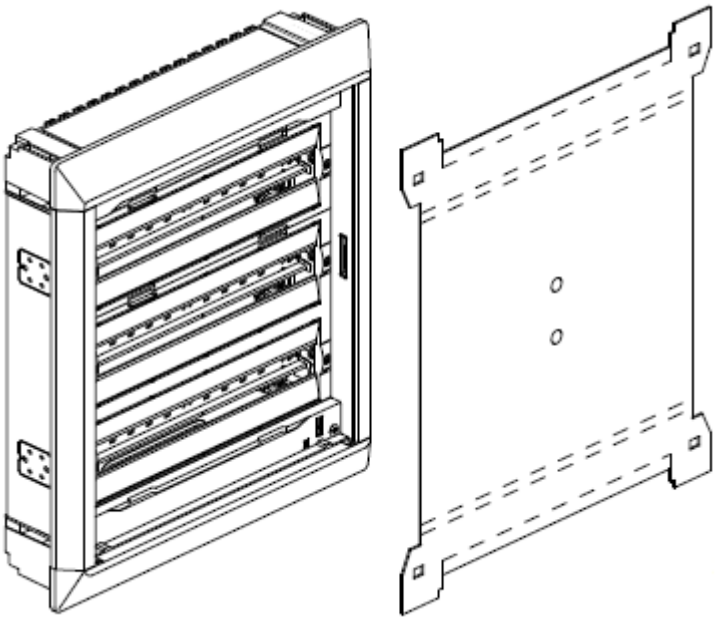


As for surface enclosures, a mounting hole has been created in top/bottom plastic part from back panel for inserting a special water level. This level can be removed with a flat screwdriver.

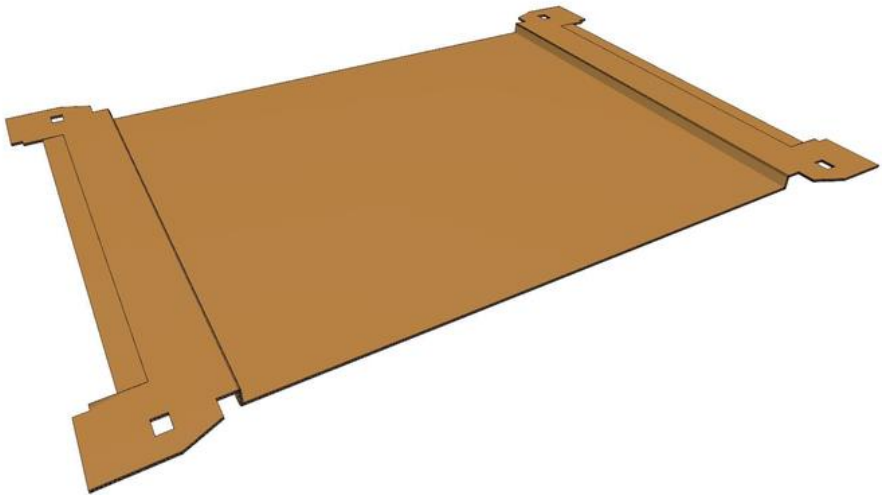


8.3 Plaster protection in flush enclosures

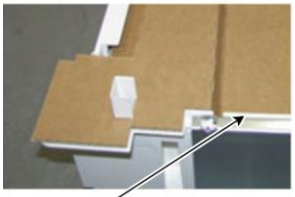
Each flush enclosure is delivered with a plaster protection cardboard to fix on back panel.



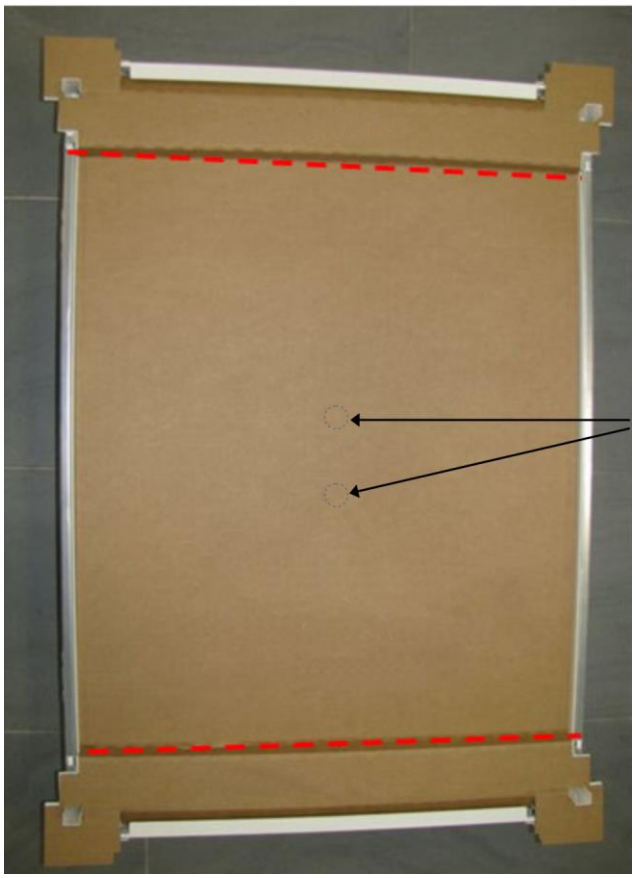
Cardboard protection is the same for flush low-depth and flush high-depth, but has to be bent and may have to be turned 180° depending on flush depth to protect.



Flush high depth:
bending to exterior side



Flush low depth:
bending to interior side



red = bending line

2 x pre-perforated holes
for finger taking

red = bending line

Example of flush low-depth enclosure protection against plastering

9 Technical data & certifications

Chapter index

9.1 Technical data

Product fulfils the reqirements of:

- DIN EN 61439-1:2012-06, EN 61439-1, IEC 61439-1:2011, VDE 0660-600-1:2012-06
- DIN EN 61439-3:2013-02, EN 61439-3, IEC 61439-3:2012, VDE 0660-600-3:2013-02

Rated operational voltage and frequency:	400 / 230 V AC, 50 Hz
Rated current:	up to 160 A
Protection class:	Class II
Protection degree (of surface enclosures):	IP30 without door IP41 with door
Protection degree (of flush enclosures):	IP30 without door IP40 with door
Indoor and/or outdoor installation	for indoor installation

Data for air / leakage distance (clearance and creepage distances)

Overvoltage category:	III
Pollution degree:	3
Rated insulation voltage (U_i):	AC 400 V
IK Codes:	IK08 with door IK07 without door

Glow wire test according DIN EN 60695:

- 960 °C for active parts
- 850 °C for flush plastic parts mounted behind wall-surface
- 750 °C for other parts (European minimum requirement is 650 °C, but French prescription for public buildings requires 750 °C)

PVC content:

All plastic parts from enclosure are halogen-free, excepted paper strip holders (PVC).

All FD accessories are halogen free except cable trunking FD00T1. Halogen free trunking exist under reference number FD00T2.

9.2 Power loss

9.2.1 Power loss for standard surface enclosures

Enclosure				Permissible power loss P_{perm} for standard surface enclosure					
Type	Height H	Width B	Depth T	Surface mounted with temperature rise **Δ**t					% Enclosure height
				10 K	15 K	20 K	25 K	30 K	
	mm	mm	mm	W	W	W	W	W	
FD42...	750	500	193 (Depth installation room 135 mm)	20,6	34,1	48,8	64,4	80,7	75
				26,5	43,8	62,7	82,7	103,8	50
FD52...	900			23,5	38,9	55,6	73,4	92,1	75
				30,6	50,7	72,6	95,8	120,1	50
FD62...	1050			26,4	43,7	62,5	82,5	103,5	75
				34,7	57,5	82,3	108,6	136,2	50
FD72...	1200			28,5	47,1	67,4	89,0	111,6	75
				39,3	65,0	93,0	122,7	154,0	50

9.2.2 Power loss for flush low-depth enclosures

Enclosure				Permissible power loss P_{perm} for flush low-depth enclosures					
Type	Height H	Width B	Depth T	Flush mounted with temperature rise **Δ**t					% Enclosure height
				10 K	15 K	20 K	25 K	30 K	
	mm	mm	mm	W	W	W	W	W	
FU42...	836 (750)	586 (500)	150 (Depth installation room 105 mm)	15,6	25,8	36,9	48,7	65,7	75
				20,2	33,5	47,9	63,2	79,3	50
FU52...	986 (900)			18,0	29,8	42,6	56,3	70,6	75
				23,6	39,1	55,9	73,8	92,6	50
FU62...	1136 (1050)			20,4	33,8	48,4	63,8	80,1	75
				27,0	44,7	63,9	84,3	105,8	50
FU72...	1286 (1200)			22,8	37,8	54,1	71,4	89,5	75
				30,3	50,2	71,7	94,7	118,8	50

9.3 Certifications

9.3.1 VDE certification for standard DIN/EN 61439-1/-3

VDE Prüf- und Zertifizierungsinstitut

ZEICHENGENEHMIGUNG
MARKS APPROVAL

Hager Electro GmbH & Co. KG
Zum Gunterstal 6
66440 Blieskastel

ist berechtigt, für ihr Produkt /
is authorized to use for their product

Niederspannungs-Schaltgerätekombination
Low-voltage switchgear and controlgear assembly
Serie Vega D

die hier abgebildeten markenrechtlich geschützten Zeichen
für die ab Blatt 2 aufgeführten Typen zu benutzen /
the legally protected Marks as shown below for the types referred to on page 2 ff.

Geprüft und zertifiziert nach /
Tested and certified according to

DIN EN 61439-1 (VDE 0660-600-1):2012-06; EN 61439-1:2011
DIN EN 61439-3 (VDE 0660-600-3):2013-02; EN 61439-3:2012
EN 61439-1:2011
EN 61439-3:2012

Aktenzeichen: 1996500-1494-0004 / 195161
File ref.:

VDE Prüf- und Zertifizierungsinstitut GmbH
VDE Testing and Certification Institute
Zertifizierungsstelle / *Certification*

Ausweis-Nr. 40040057 Blatt 1
Certificate No. *Page*

Weitere Bedingungen siehe Rückseite und Folgeblätter /
further conditions see overleaf and following pages

Offenbach, 2014-06-10

VDE Zertifikate sind nur gültig bei Veröffentlichung unter:
VDE certificates are valid only when published on:
http://www.vde.com/zertifikat
http://www.vde.com/certificate

VDE

9.3.2 VDE CB certification for standard IEC 61439-1/-3

Test Report issued under the responsibility of:

VDE

TEST REPORT IEC 61439-3

Low-voltage switchgear and controlgear assemblies - Part 3: Distribution boards intended to be operated by ordinary persons (DBO)

Report reference No. .....:	**195161-CC3-1**
Date of issue.....:	**2014-06-03 Total**
number of pages .....:	68
Applicant's name .....:	**Hager Electro GmbH & Co. KG**
Address.....:	**Zum Gunterstal 6; 66440 Blieskastel; Germany**
Test specification:	
Standard.....:	IEC 61439-3:2012 (First Edition) for use in conjunction with IEC 61439-1:2011 (Second Edition)
Test procedure .....:	CB Scheme
Non-standard test method .....:	N/A
Test Report Form No. .....:	IEC61439_3A **Test**
Report Form(s) Originator ....:	VDE
Master TRF .....:	Dated 2013-05

Copyright © 2013 Worldwide System for Conformity Testing and Certification of Electrotechnical Equipment and Components (IECEE), Geneva, Switzerland. All rights reserved.

This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

Test item description.....:	**Low-voltage switchgear and controlgear assembly**
Trade Mark.....:	:hager
Manufacturer .....:	**Hager Electro GmbH & Co. KG Germany**
Model/Type reference.....:	Vega D Serie
Ratings.....:	AC 400 V, 160 A, IP 30, IP 40, IP 41, IK 05, T 40…-5°C

VDE File No 1996500-1494-0004/195161
Testreport-195161-CC3-1.DOCX

9.3.3 LCIE certification for NF standard EN 61439-1/-3

Accréditation N°5-0014 Portée disponible sur www.cofrac.fr

LICENCE

LCIE N°: 662584

Délivrée à : *Delivered to:*	**HAGER ELECTRO GMBH & CO. KG** Zum Gunterstal 6 - 66440 Blieskastel - ALLEMAGNE
Site de fabrication : *Factory:*	**HAGER ELECTRO GMBH & CO. KG** (1637MO) Zum Gunterstal 6 - 66440 Blieskastel - ALLEMAGNE
Produit : *Product:*	Tableau de distribution *Distribution boards*
Marque commerciale (s'il y a lieu) : *Trade mark (if any):*	**HAGER**
Modèle, type, référence : *Model, type, reference:*	Gamme / *series* Vega D Références voir annexe / *references see annex*
Caractéristiques nominales et principales : *Rating and principal characteristics*:	Voir annexe / *see annex*
Informations complémentaires : *Additional information*:	Voir annexe / *see annex*
Le produit est conforme à : *The product is in conformity with*:	EN 61439-1:2011 EN 61439-3:2012
Documents pris en compte : *Relevant documents*:	Certificat d'essai OC / CB test certificate n°DE1- 54083 / TR n° 4195161-CC3-1
Annule et remplace (s'il y a lieu) : *Cancels and replaces (if necessary)*:	/

En vertu de la présente décision notifiée par le LCIE France organisme mandaté, AFNOR Certification accorde le droit d'usage de la Marque NF à la société qui en est titulaire pour les produits visés ci-dessus, dans les conditions définies par les règles générales de la Marque NF et par les règles de certification NF, pour autant que les contrôles réguliers de la fabrication et les vérifications par tierce partie soient satisfaisants.

On the strength of the present decision notified by LCIE France mandated certification body, AFNOR Certification grants the right to use the NF Mark to the licence holder for the above mentioned products, within the frame of the general rules of the NF Mark and of the NF certification rules, as far as the regular checking and third party verifications of the production are satisfactory.

Fontenay-aux-Roses, 2014-12-09

Date de fin de validité - *Limit expired date*:

Rémi HANOT
Responsable de Certification
Certification Officer

La validité de la présente licence cesse dès l'annulation de l'une des normes sur lesquelles elle est fondée.
The present license is valid until the cancellation of one of the standards on which it is based.

LCIE
Laboratoire Central des Industries Electriques
Une société de Bureau Veritas

33, av du Général Leclerc
BP 8
92266 Fontenay-aux-Roses cedex
France

Tél : +33 1 40 95 60 60
Fax : +33 1 40 95 86 56
contact@lcie.fr
www.lcie.fr

Société par Actions Simplifiée
au capital de 15 745 984 €
RCS Nanterre B 408 363 174

9.3.4 VDE certification for standard DIN/EN/IEC 62208 for empty enclosures

VDE Prüf- und Zertifizierungsinstitut

ZEICHENGENEHMIGUNG
MARKS APPROVAL

Hager Electro GmbH & Co. KG
Zum Gunterstal 6
66440 Blieskastel

ist berechtigt, für ihr Produkt /
is authorized to use for their product

"Leergehäuse für Niederspannungs-Schaltgerätekombinationen
Empty enclosures for low-voltage switchgear and controlgear assemblies

die hier abgebildeten markenrechtlich geschützten Zeichen
für die ab Blatt 2 aufgeführten Typen zu benutzen /
the legally protected Marks as shown below for the types referred to on page 2 ff.

Geprüft und zertifiziert nach /
Tested and certified according to

DIN EN 62208 (VDE 0660-511):2012-06
EN 62208:2011
IEC 62208(ed.1)

Aktenzeichen: 1996500-9011-0002 / 206818
File ref.:

VDE Prüf- und Zertifizierungsinstitut GmbH
VDE Testing and Certification Institute
Zertifizierungsstelle / *Certification*

Ausweis-Nr. 40042225 Blatt 1
Certificate No. *Page*

Weitere Bedingungen siehe Rückseite und Folgeblätter /
further conditions see overleaf and following pages

Offenbach, 2015-05-18

G. Heine

VDE Zertifikate sind nur gültig bei Veröffentlichung unter:
VDE certificates are valid only when published on:

http://www.vde.com/zertifikat
http://www.vde.com/certificate

VDE

Hager Australia
Hager Electro Pty Ltd
Unit 17/2-8 South Street
Rydalmere NSW 2116
Sydney
Australia

Phone: 1300 850 253
E-Mail: customerservice@hagerelectro.com.au

www.hagerelectro.com.au

Hager New Zealand
Hager Limited
Phone: 027 844 2437
E-Mail: customerservice.nz@hager.com

www.hager.com/NZ