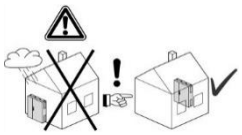
Safety

Warranty and responsibility
- This specification sheet does not extend Hager's conditions of sale and delivery. No new warranty or guarantee claims can be derived on the basis of this manual that go beyond the conditions of sale and delivery.

Liability notice
- Hager reserves the right to change or supplement the product or the documentation at any time without prior notice. Hager accepts no liability for printing errors and any resulting damage.

Requirements for the authorized persons
- A qualified electrician can evaluate the work assigned to him and recognize possible hazards on the basis of his technical training, knowledge and experience of the relevant regulations.
- An electrically instructed person must be suitably informed and supervised by a qualified electrician. The instructed person must therefore be capable of recognizing risks and avoiding hazards, including those caused by electricity.
- Anyone who is neither a qualified electrician nor an electrically instructed person must always be regarded as an electrotechnical layperson. Electrical laypersons may never carry out work within electrical systems independently and on their own responsibility. Electrical laypersons may only operate short-circuit devices that are intended for operation by laypersons in accordance with IEC/EN 61439-3.

- Only qualified electricians are allowed to assemble, install, commission, expand, troubleshoot, maintain, disassemble and dispose of switchgear assemblies.
- The qualified electricians must be experienced in testing during initial testing and subsequent commissioning, troubleshooting and maintenance.
- The product is for indoor use only



Designated use of GOLF product line
- Hager offers with the product line GOLF a range for flush-, hollow wall and surface-mounted installations IP30 without door (IP40 with door), for residential and functional buildings for devices up to 63 A with 70 mm installation depth according to EN TR50473:2007. The use of the product is limited to indoor using in a temperature range between -5/+40°C in a relative humidity of 50%. The maximum degree of pollution (defined in IEC 61439-1) = 3. The tested GOLF distribution board series from Hager is used to realize switchgear combinations according to IEC/EN 61439-3 (distribution boards for operation by ordinary persons /DBO), AS/NZS 61439-3 & NBNCo conform “VF318PZD & VF418PZD”.
- VF-Range, suitable for flush mounted distribution boards: Base/Slider 650°C and for hollow wall mounted distribution boards: Base/Slider/Hollow wall anker 850°C.
- **Structurally the VF-Range existing in 2 versions:**
  - **Hollow Wall:** Delivered with hollow wall anchor and already opened hollow wall anchor fixation areas on the base
  - **Flush:** Delivered with closed hollow wall anchor fixation areas
- VS-Range, surface - suitable for surface mounting

Intended use also includes:
- Reading and observing these instructions, the installation instructions
- The observance of the requirements for authorized personnel only

Misuse
- Any other use or use beyond this as well as changes and modifications to the enclosure are considered misuse.
- Hager is not liable for any damage resulting from misuse.

Restriction of operating areas
- GOLF product line could not be used in all areas to avoid danger or damage to the enclosure.

The enclosure is not suitable for:
- for areas requiring a higher degree of protection,
- for areas where the ATEX directives must be complied with,
- for operating areas subject to fire hazards,
- for corrosive environments. In particular, environments containing chlorine, sulfur, acid or salt can damage the cabinet and interior components

Technical Descriptions

Usage
- Stationary
- Indoor installation
- Suitable for Flush or hollow wall application (VF*), Surface installation (VS*)
- Protection against mechanical impact
- If the switchgear combination is constructed in accordance with IEC/EN 61439-3, operation by ordinary persons is possible.(DBO =Distribution Boards intended to be operated by ordinary persons). Devices that cannot be operated by ordinary persons must be marked by the installer insurance with the standard or must require the use of a key or tool. Additional requirements according to IEC/EN 61439-3 standard must be followed.

Norm & Standards
- IEC/EN 61439-3
- AS/NZS 61439-3
- NBNCo Standard for Australia for VF318PZD&VF418PZD
- IP40/IP30 - DIN EN 60529
- Protection IP3X without and open door
- Clearance and creepage distances according IEC/EN 61439-3
- Rated insulation voltage: AC 400 V
- Overvoltage category III
- Pollution degree 3
- (VF) suitable for flush or hollow wall installations
- (VS) suitable for surface installations

Energy enclosures certified by:

AENOR
PRODUCTO CERTIFICADO

Note - Responsibility for design, assembly and final documentation according to IEC/EN 61439-3 must be performed by qualified electricians.

Guideline for project planning according to IEC/EN 61439-3:

Step 1: Collecting all project data
- 1.1 Connection to the public power supply system
- 1.2 Electrical circuits and consumers
- 1.3 Installation and ambient conditions
- 1.4 Operation and maintenance

Step2: Design of the assembly and design verification
- From now on, all values are taken into account in the products needed by the electrician for the rating of a switchgear assembly according to IEC/EN 61439-3.
- Rated current of a circuit
- Number of circuits
- Rated short-time withstand current

Software provided by HagerGroup can used (HagerCAD) also for power loss calculation an verification.

Step 3: Construction / manufacture of the enclosure
- 3.1 Assembly of individual parts / assemblies in enclosures
- 3.2 Assembly of devices
- 3.3 Wiring
- 3.4 Inlet / outlet terminals for conductors inserted from the outside
- 3.5 Assembly of doors, covers and linings
- 3.6 Inscriptions / Documentation

Note - 3.6 Sticker provided by Hagergroup “VZ123CE” are suitable to be conform to IEC/EN 61439-3

Step:4: Perform proof of unit
- Safety
- mechanical function
- isolation test

Step 5: Conformity assessment procedure
- To establish the declaration of conformity E.g.:

Europe	England	Russia	Morocco
CE	UK CA	EAC	

- all previous steps required to be fulfilled by qualified electricians.

Rated voltage
- U_n 230 / 400 V~
- U_i 400 V~
- U_{imp} 4 kV

Rated frequency
- f_n 50 Hz

Rated current
- I_{nA} max. 63A

- I_{nA} max. 80A
  - Equipped terminal according AS/NZS 5112:2015
  - 51KMXXXXXTN
  - 51KMXXXXXT

Working temperature
-5° to +40°C

Storage temperature
-5°to +55°C (IEC/EN 61439-1 §7.3)

Short-circuit strength I_{cc}
- I_{cc} <10 kA

Protection Class
- Class II, exept. multimedia

- IP40 with door (Marking “IP40” on the door handle area)
- IP30 without door (Marking “IP30” on the front cover)
- IP2XC Multimedia

Note - When using multimedia panels, devices and wirings must be insulated or double insulated. Metal parts must be earthed before finish the board assembly for class I.

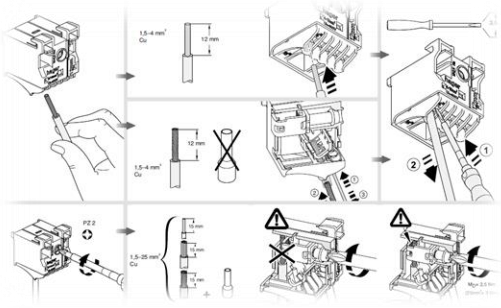
Devices
- Suitable for modular devices size 2, with a rated current up to 63 A with dimensions according to DIN 43880

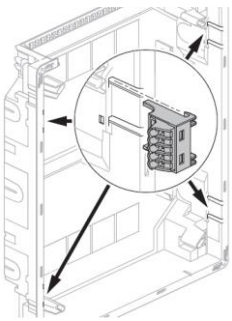
Note - Suitable for modular devices for Australia size 2, with a rated current up to 80 A with dimensions according to DIN 43880
- Compatible with selected accessories from GOLF product line (VZ) „restricted to sizes“

Color
- Frame & Cover RAL 9010
- Door RAL 9010 & Transparent

Clamps

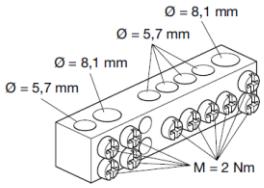
Quick connect
- In the case of versions with Quick Connect terminal, the standard Quick Connect terminal modules and information on how to operate them is provided in the user’s instructions or specification instructions.





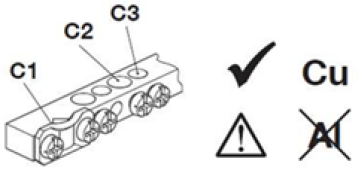
- The small Quick Connect terminals (connection area 5 x 1.5 – 4 mm²) can either be inserted on the Quick Connect terminal support or in the connection space beneath the corners (except VF104.., VF108..).
- The terminals are available as accessories (VZ455N in blue for N and VZ455P in brown for phase applications).

Brass terminal according AS/NZS 5112:2015
- 51KMXXXXXTN
- 51KMXXXXXT



Tunnel Terminal	Solid Conductors	Stranded Conductors		Flexible Conductors
Ø = 5,7 mm	1,5 to 16 mm²	1,5 to 2,5 mm² Copper strands must be twisted (note1)	4 to 16 mm²	1,5 to 10 mm² with bootlace ferrules
Ø = 8,1 mm	4 to 35 mm²	4 to 6 mm² Copper strands must be twisted (note1)	10 to 35 mm²	4 to 16 mm² with bootlace ferrules
Note1 : Copper strands must be firmly twisted together using a tool i.e. plyers				

Brass terminal not suitable for aluminum cables
- 1RCxxxx
- 51KM_M-Rxxxx
- 2KMxxxxxx



		Nm		Solid	Stranded	Flexible
C1	2x M4	1,7Nm	10-mm	10-16mm²	10-25mm²	
C2	M5	2,3Nm		1,5-16mm²		
C3	M4	1,7Nm		1,5-10mm²		

Resistance against mechanical impact
- The enclosure are tested for their mechanical resistance by means of an impact test according to IEC/EN 61439-3.
- This corresponds to an IK code of: **IK07**

Material

Wall box / Front cover
- Plastic material; resistance to abnormal heat and fire according to IEC/EN 61439-3

DIN rail
- VF104.. + VF108.. = PC
- VS104.. + VS108.. = PC
- VF112.. – 412 + VF118.. – 418 + VF122.. = Sheet steel, galvanized
- VS112.. – 412 + VS118.. – 418 + VS122.. = Sheet steel, galvanized

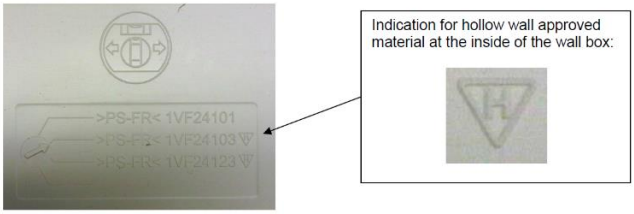
Door
- Transparent door = PC
- White door = PS

PVC content
- All plastic materials used for New Golf enclosures (VF…) series are 100% free of PVC. Except Transparent Protector for labelling, it’s made of PVC)

Halogen content
- The polystyrene types have a very low halogen content of < 1%.
- All products conform to the ROHS and WEEE directives.

Glow wire test
- For parts necessary to retain current-carrying parts position 960°C
- For all other parts, including parts necessary to retain the protective conductor and enclosure parts intended to be embedded in and mounted on walls which are combustion resistance 650°C

- For enclosures to be installed in hollow walls 850°C
- Special Version France - VS…PR / TR: 750°C (Établissements recevant du public (ERP)



Admissible power dissipation loss for surface enclosure VS*

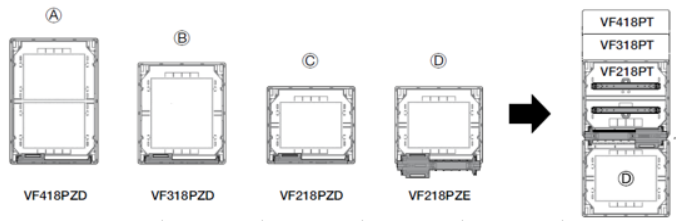
Reference	Admissible power dissipation loss for wall mounted distribution boards at temperature rise ΔT				
	10K W	15 K W	20 K W	25 K W	30 K W
VS104..	2,4	4,0	5,8	7,6	9,5
VS108..	3,1	5,1	7,3	9,6	12,0
VS112..	4,7	7,9	11,2	14,8	18,6
VS212..	6,1	10,1	14,5	19,1	24,0
VS312..	7,5	12,5	17,8	23,5	29,5
VS412..	9,2	15,2	21,8	28,8	36,1
VS118..	6,4	10,5	15,1	19,9	24,9
VS218..	8,1	13,4	19,1	25,3	31,7
VS318..	9,8	16,2	23,2	30,6	38,4
VS418..	11,8	19,5	27,9	36,9	45,3
VS122..	7,4	12,3	17,6	23,2	29,1

Admissible power dissipation loss for flush and hollow wall enclosure VF*

Reference	Admissible power dissipation loss for flush or hollow wall mounted distribution boards at temperature rise ΔT				
	10K W	15 K W	20 K W	25 K W	30 K W
VF104..	2,5	4,1	5,9	7,7	9,7
VF108..	2,8	4,6	6,5	8,6	10,8
VF112..	4,4	7,2	10,4	13,7	17,2
VF212..	5,7	9,5	13,5	17,9	22,4
VF312..	7,1	11,7	16,8	22,1	27,8
VF412..	8,7	14,7	20,5	27,1	34,0
VF118..	5,8	9,7	13,8	18,2	22,8
VF218..	7,6	12,6	17,9	23,7	29,7
VF318..	9,2	15,3	21,9	28,9	36,2
VF418..	11,2	18,5	26,5	35,0	43,9
VF122..	6,8	11,2	16,0	21,1	26,5

Admissible power dissipation for Hybrid version of distribution boards and multimedia enclosures

Reference	Admissible power dissipation for the Multimedia panel at temperature rise ΔT				
	10K W	15 K W	20 K W	25 K W	30 K W
VF…PZE VF…PZD	10	20	30	30	30



- *) ΔT is the temperature difference between the upper limiting temperature (at the height of 75% of the enclosure) of the installed equipment and the ambient air temperature of the distribution board.

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

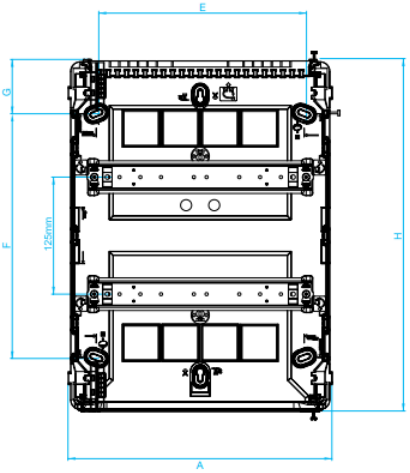
- **(Applicable in the European Union and other European countries with separate collection systems).**
- This marking shown on the product or its literature indicates that it should not be disposed with other household waste at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources. Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this device for environmentally safe recycling. Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes of disposal.

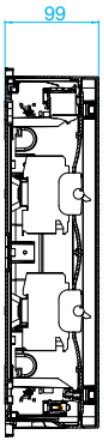
Decommissioning
Decommissioning only by qualified electricians!
- Switch off the system
- Observe residual energies, residual voltages and residual heat
- Disconnect all poles and all sides of the system and supply lines.
- Secure before switching on again
- Check that no voltage is present
- Disconnect supply line / feeder
- Securely close the system
- Attach information sign for decommissioning

Disassembly and disposal
Disassembly only by qualified electricians
- Check disconnection and absence of voltage
- Dismantle the system in reverse order of the assembly and installation procedure

Surface VS*

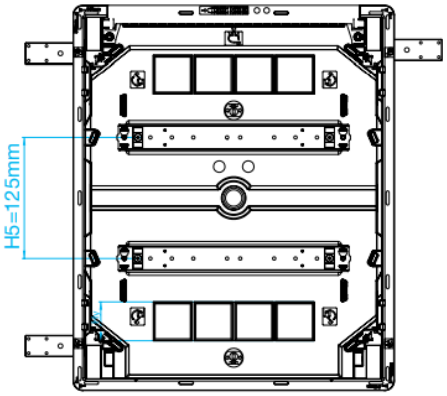
Cable entries top/bottom - One side of the surface enclosure is designed for use of trunking and knock outs. The other side of the enclosure has dimples located for the various sizes of conduit entries, 20mm, 25mm, 32mm and 40mm. The enclosure is symmetrical through 180º. - For flush enclosures, Precut with diameters 20, 25, 32 and 40mm, the wall box is 180º rotatable, to provide slider position on top or bottom

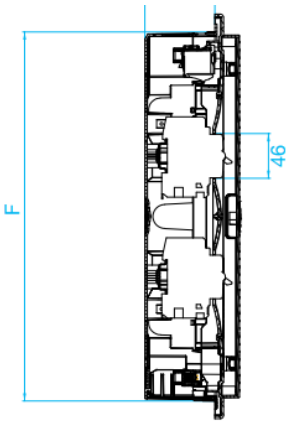


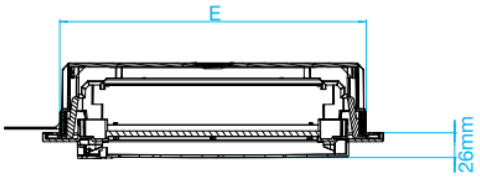


Surface Ref		Dimension		Wall fixation		
		A	H	E	F	G
VS104...	1 row 4 ▮	138	184	101	68	58
VS108...	1 row 8 ▮	210	184	174	68	58
VS112...	1 row 12 ▮	282	252	222	136	58
VS212...	2 row 12 ▮	282	377	222	261	58
VS312...	3 row 12 ▮	282	500	222	386	58
VS412...	4 row 12 ▮	282	647	222	491	78
VS118...	1 row 18 ▮	390	252	330	136	58
VS218...	2 row 18 ▮	390	377	330	261	58
VS318...	3 row 18 ▮	390	500	330	386	58
VS418...	4 row 18 ▮	390	647	330	491	78
VS122...	1 row 22 ▮	462	252	402	136	58

Flush or hollow wall VF*





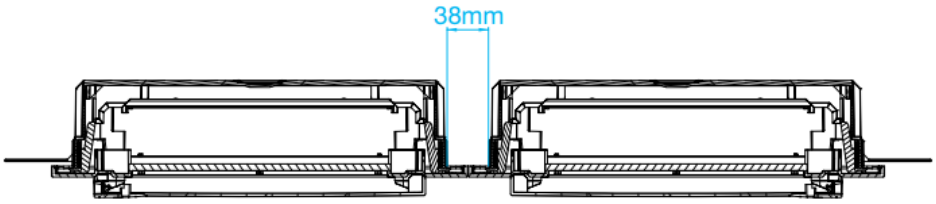


Flush Ref		Dimension		Wall Cut Out	
		A	H	E	F
VF104...	1 row 4 ▮	204	225	170	189
VF108...	1 row 8 ▮	275	225	242	189
VF112...	1 row 12 ▮	352	293	318	257
VF212...	2 row 12 ▮	352	418	318	382
VF412...	4 row 12 ▮	352	688	318	652
VF118...	1 row 18 ▮	460	293	426	257
VF218...	2 row 18 ▮	460	418	426	382
VF318...	3 row 18 ▮	460	543	426	507
VF418...	4 row 18 ▮	460	688	426	652
VF122...	1 row 22 ▮	532	293	498	257

For the wall cut out, these dimensions are minimal.
Depth must always be 72mm min.

Cutout for combined boards utilizing double slider (Flush enclosures only) When connecting 2 x VFx18 enclosures with a double slider, an additional 38mm must be added to the total cutout height of the boards. e.g. VF118PT joining with a VF218PZD = 257mm + 382mm + 38mm. Total height for the cutout = 677mm. Width of the cutout remains consistent at 426mm.

Note: Joining double slider for use with 18 module wide flush enclosures only.



Quick Connect:
All Quick Connect terminals are mountable.

Reference for terminal support	Enclosure size	Dimension / Section
VZ705N	4 M. Enclosure	75mm = 2,5 Sections
VZ706N	8 M. Enclosure	135mm = 4,5 Section
VZ707N	12 M. Enclosure	195mm = 6,5 Section
VZ708N	18/22 M. Enclosure	300mm = 10 Sections

Reference for QC clamp	Dimension / Section
KN06..	30mm = 1 Section
KN10..	45mm = 1,5 Section
KN14..	60mm = 2 Section
KN18..	75mm = 2,5 Section
KN22..	90mm = 3 Section
KN26..	105mm = 3,5 Section

It is possible to mix the quick connect terminals on the support
Example to fully equip VZ708N:
KN22..+KN22..+KN14..+KN06..+KN06.. = 3S + 3S + 2S + 1S + 1S = 10Sections

Side by side installation
The development was to have the handle in the middle and pull it, to open it, from top or bottom. Nevertheless, if the customer do it with the other possibility's it will be still work with a little collision of the doors.