

Consumer Unit Design 50 Flush 100A Configurable with SPD

For the distribution of power in a residential application, conforming to BS EN 61439-3 including Annex ZB (16kA rating).

Design 50 has been created to fulfil the requirements in the market for an aesthetically pleasing consumer unit which meets the requirements of the wiring regulations (BS 7671) and allows the consumer unit to be installed flush at the height stated in the building regulations (Part M), with minimum impact on the area.

Regulation 421.1.201 within domestic (household) applications consumer units and similar assemblies shall comply with BS EN 61439-3 and shall have their enclosure manufactured from a non-combustible material.

Regulation 411.3.3 additional protection by means of a 30mA RCD

Regulation 314.1&2 segregation of circuits to avoid danger and minimise any inconvenience in the event of a fault.

Regulation 531.3.2 Unwanted tripping (ii) in order to avoid unwanted tripping by protective conductor currents and/or earth leakage currents, the accumulation of such currents downstream of the RCD shall not be more than 30% of the rated residual operating current. High integrity boards allow circuits with high earth leakage currents to be individually protected by RCBOs, whilst the rest of the circuits are separated across the two RCCBs.

Regulation 522.6.202 protection of wiring concealed in walls or partitions with RCD 30mA.

Regulation 531.3.3 Selection of appropriate RCD. Type A RCCBs can detect and respond to both AC and pulsating DC components.

Regulation 536.4.3.2 & 536.4.202 overload protection of switches and RCCBs. For installations where the upstream overload protection is less than or equal to 100A.

Regulation 443.4 Protection against transient over voltages, provided by factory fitted

type 2 SPD.

The curved lines remove the harsh appearance of a surface mounted enclosure on the wall. The ability to provide bespoke colour and pattern finishes allows the board to become part of the interior design by either blending in or making a statement.

Description

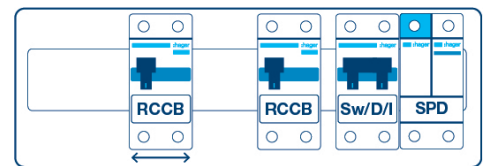
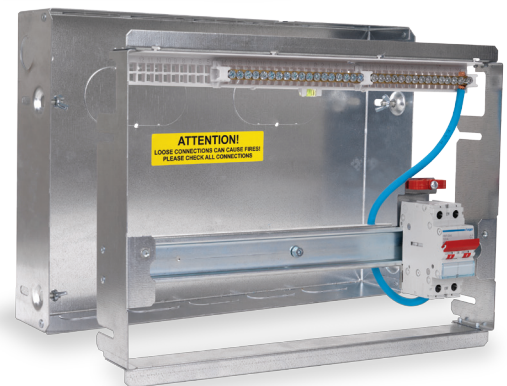
	Size	Cat Ref.
8 Way High Integrity 100A Switch 2 X 100A 30mA RCCB Type A with Factory Fitted SPD	5	VSR908CUSPD
10 Way High Integrity 100A Switch 2 X 100A 30mA RCCB Type A with Factory Fitted SPD	6	VSR910CUSPD
14 Way High Integrity 100A Switch 2 X 100A 30mA RCCB Type A with Factory Fitted SPD	7	VSR914CUSPD

Devices

MCB 6kA 6A to 63A B Curve	MTN***
Single Pole, Single Mod RCBO 6kA, 40A - 45A	ADA1**G
Single Pole, Single Mod Reduced Height RCBO 6kA, 6A - 32A	ADA3**G

Features & Benefits

- Cable clamp - Secures supply cables on entry to main incoming device preventing any movement being transmitted through metertails to device
- - Rear Knockouts for ease of cable entry – Cable protector plate (VM02CE) provided
- - 2 piece base allows for first fix, second fix option
- - Adjustable Depth Base - Base assembly is adjustable from 72mm to 92mm, at 72mm allows for 60mm studwork and 12mm plasterboard
- - Full metal DIN rail – Secure and stable attachment of devices
- - Quick release clip on MCB/RCBO – Allows removal of MCB/RCBO with busbar still in place
- - Optimised cabling space – DIN rail position allows maximum cabling space
- - Top mounted terminal rail makes the wiring of the neutral and earth connections neat and simple.
- - Health and Safety lock allows the door to be secured with circuits isolated during construction (via accessory, see overleaf).
- - Torque settings displayed inside front cover so they're easily accessible by the electrician.
- - Lockable front door via an accessory (see overleaf).
- - Available in a full range of colours, anodised finishes and vinyl wrap options, please contact the Estimation Team on 01952 675600.
- Factory Fitted Type 2 Surge Protection.



VSR 910CUSPD

Technical Characteristics

Standards	BS EN 61439-3
Classification	Consumer Unit
Rated & Operational Voltage (U_N/U_E)	230V a.c 50 Hz
Rated Insulation Voltage (U_i)	320V a.c. 50Hz
Rated Frequency (fn)	50 Hz
Rated impulse withstand voltage (U_{imp})	4kV
Rated Current of the Assembly (I_{na})	100A
Rated Current of an Outgoing Circuit I_{nC}	MCB 6A - 63A (Marked Rated Current on Device) RCBO 6kA Reduced Height 6A - 32A Type A ADA3**G (Marked Rated Current on Device) RCBO 6kA Type A 40 A- 45A ADA1**G (Marked Rated Current on Device)
Rated Conditional Short Circuit of the Assembly (I_{cC})	Annex ZB: 16kA rms at 250V, power factor 0.6 with equipment and arrangements specified in Hager's technical documentation/catalogue
Rated Current of outgoing unit (I_{nC})	RCCB 63A - 80A (marked rated current on device)
Protection against electric shock	Consumer Unit shall be installed in an electrical system conforming to IEC 60364 / BS 7671
Rated Diversity Factor (RDF) / Values of assumed loading	6 way - 9 way = 0.6 10 way and above - 0.5

Note: RDF only applies to continuously and simultaneously loaded circuits. In principle, this means adjacent circuit breakers having a load on time exceeding 30 minutes or where a load not exceeding 30 minutes has an 'off' time less than the 'on' time will need to have the rated diversity factor applied as indicated.

Pollution Degree	2
Types of System Earthing for which the assembly is designed	TNC-S and TN-S when installed in an electrical system conforming to BS 7671
Intended locations	Indoor use only
Stationary assembly	
Degree of protection	IP2XC with door open / closed and full compliment of devices / blanks fitted. Note: Where cables are installed through the top wall of the enclosure, gaps of IP4X to be maintained.
Intended use	Intended for use in domestic (residential) or similar premises
Electromagnetic compatibility (EMC) classification	EMC environment B
External design	Wall mounted, flush type, enclosed assembly.
Mechanical impact protection	IK05
Type of construction	Fixed parts
Incoming Line/Neutral terminal	50mm ²
Incoming Earth Terminal	16mm ²

Warranty - Hager undertakes to replace or repair at its discretion products should they become inoperable within the time periods as stated - 2 Years.

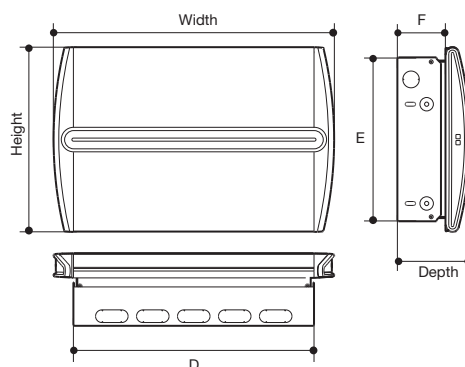
Accessories

Design 50 Locking bracket	Provides the ability to lock the consumer unit during the installation process	VSRHBL
Design 50 Padlock	Used with VSRHBL	JK25A
Design 50 Door Lock	Allows door to be lockable	VSRLOCK
38mm Open Grommet	Allows protection of cables entering top or bottom of the enclosure	VMGROM
Grommet strip	For protecting cables against damage when entering the board	VM05GS

Design 50 Dimensions (mm)

	Enclosure Size		
	5	6	7
Height	284	284	284
Width	431	467	539
Depth	105	105	105
D	370	406	478
E	252	252	252
F	72	72	72

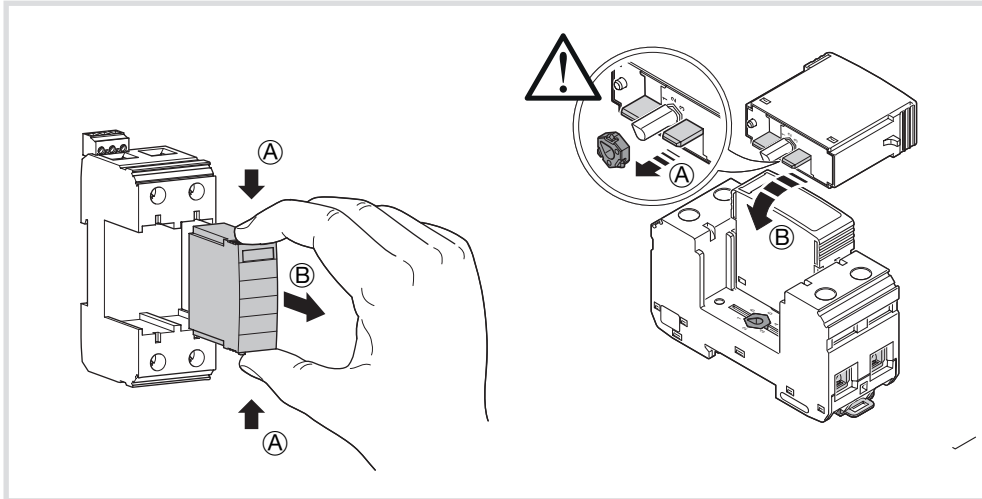
Number of Knockouts			
<input type="radio"/> Top Face 50 x 20 (mm)	5	6	7
<input type="radio"/> Bottom Face 50 x 20 (mm)	5	6	7
<input type="radio"/> Back 100 x 50 (mm)	2	2	3
<input type="radio"/> Left Face 20.8 (mm)	1	1	1



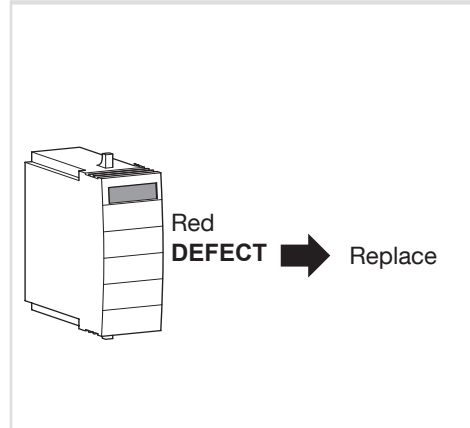
Adjustable Depth Base

The base assembly is adjustable from 72mm to 92mm. At 72mm this allows for a 60mm studwork and 12mm of plasterboard.

SPB015, SPB015N



Fault indication



Key Specifications

- Power Supply System -TN / TT
- Requirement class -SPD class II acc. to IEC 61643-11; SPD Type 2 acc. to EN 61643-11
- Max. continuous operating voltage U_c -L-N: 275 V a.c. / N-PE: 260 V a.c.
- Nominal voltage U_n -230/400 V AC 50/60 Hz
- Nominal discharge current I_n (8/20) microseconds 20 kA
- Max. discharge current I_{max} (8/20) microseconds 40 kA
- Combination of high capacity voltage limiting varistors and N-PE spark gap
- Suitable for CT2 connection as per 534.4.3.2 BS7671 18th Edition
- Optical status indication for each cartridge
Clear = Healthy, Red/DEFECT = Replace
- Pluggable surge protection modules for ease of replacement
- Each cartridge incorporates its own thermal disconnect mechanism
- Cartridges are mechanically coded to prevent mis-connection
- Cartridges can be routinely checked and changed if required without interrupting supply to loads
- No secondary back-up protection required.

General Data

Standards/regulations	IEC 61643-11 2011 EN 61643-11 2012
IEC test classification	T2
EN type	T2
Mode of protection	L-N L-PE N-PE
Mounting type	DIN rail: 35 mm
Degree of pollution	2
Overvoltage category	III
Degree of protection	IP20
Ambient temperature (operation)	-40 °C ... 80 °C
Ambient temperature (storage/transport) Permissible humidity (operation)	-40 °C ... 80 °C

Electrical Data

Nominal voltage U_n	230 / 400 V AC (TN / TT)
Nominal frequency f_n	50 Hz (60 Hz)
Maximum continuous operating voltage U_c (L-N)	275 V AC
Maximum continuous operating voltage U_c (N-PE)	260 V AC
Residual current I_{pE}	$\leq 5 \mu A$
Standby power consumption P_c	$\leq 360 \text{ mVA}$
Nominal discharge current I_n (8/20) μs	20 kA
Maximum discharge current I_{max} (8/20) μs	40 kA
Follow current interrupt rating I_{fl} (N-PE)	100A
Short-circuit current rating I_{scR}	50kA
Voltage protection level U_p (L-N)	$\leq 1.5 \text{ kV}$
Voltage protection level U_p (L-PE)	$\leq 1.5 \text{ kV}$
Max. backup fuse	125 A (gG)