

Consumer Unit

Design 10 High Integrity 100A (I_{nA}) (Round Knockouts) with SPD

For the distribution of power in a residential application, conforming to BS EN 61439-3

The range of consumer units with a 100A rated current (I_{nA}) have been designed for installations where the upstream overcurrent protection device (OCPD) is rated at 100A or below.

Design 10 consumer unit is an entry level board designed for all applications and allows compliance with BS 7671:2018;

Regulation 421.1.201 within domestics (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 inconvenience in the event of a fault.

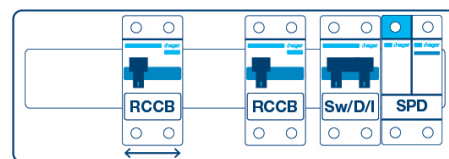
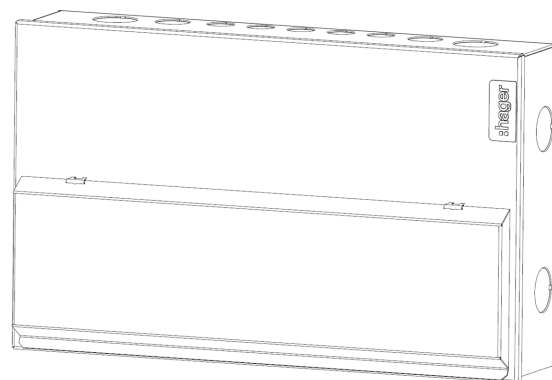
Regulation 522.6.202 protection of wiring concealed in walls or partitions.

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 overcurrent protection is less than or equal to 100 A

Regulation 443.4 Protection against transient over voltages, provided by factory fitted type 2 SPD.

A split load board allows circuits to be arranged in a configuration to minimise inconvenience to the householder in case of an earth leakage fault.



VML910CUSPDRK

| Description | Size | Cat ref. |
|--|--------|---------------|
| 8 Way High Integrity 100A Main Switch 2*100A 30mA Type A RCCB with Factory Fitted SPD | Size 5 | VML908CUSPDRK |
| 10 Way High Integrity 100A Main Switch 2*100A 30mA Type A RCCB With Factory Fitted SPD | Size 6 | VML910CUSPDRK |
| 14 Way High Integrity 100A Main Switch 2*100A 30mA Type A RCCB With Factory Fitted SPD | Size 7 | VML914CUSPDRK |

Features & Benefits

- Type A RCCBs for general purpose circuits and circuits containing equipment incorporating electronic components.
- Square cable entry points top and bottom for use with cable trunking
 - Meter tail cable entry plate (VM04CE) provided
- -- Rigid top wall – Enhances rigidity to prevent distortion when removing knockouts
- -- Rear Knockouts for ease of cable entry – Cable protector plate (VM02CE) available as accessory
- Front cover retained screws – Prevents loss during installation
- Full metal DIN rail – Secure and stable attachment of devices
- Quick release clip on MCB – Allows removal of MCB with busbar still in place
- Optimised cabling space – DIN rail position allows maximum cabling space.
- Top mounted terminal rail for each row makes the wiring of the neutral and earth connections neat and simple.
- Torque settings displayed inside front cover – easily accessible to electrician during installation and maintenance.
- Factory Fitted Type 2 Surge Protection Device

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) |
| 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 Assembly Circuit (I_{nc}) | RCCB 100A (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, surface 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.

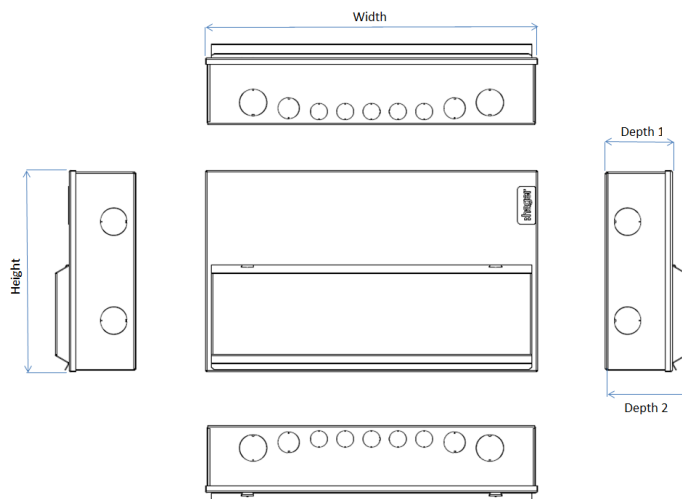
Accessories

| | | |
|-----------------------------|---|----------------|
| Cable clamp | Secures supply cables on entry to main incoming device | VA10MT |
| Top wall cable entry plates | Provide more options for cable entry, when used with 50x50mm trunking IP ratings can be achieved. | V M03CE |
| Blind cable entry plates | A blank plate for drilling which allows the installation of cable glands etc. | VM04CB, VM03CB |
| Grommet strip | For protecting cables against damage when entering board | VM05GS |
| Rear stand off plates | To stand consumer unit off wall allowing surface mounted cables to enter through rear of unit. | VM01SP |

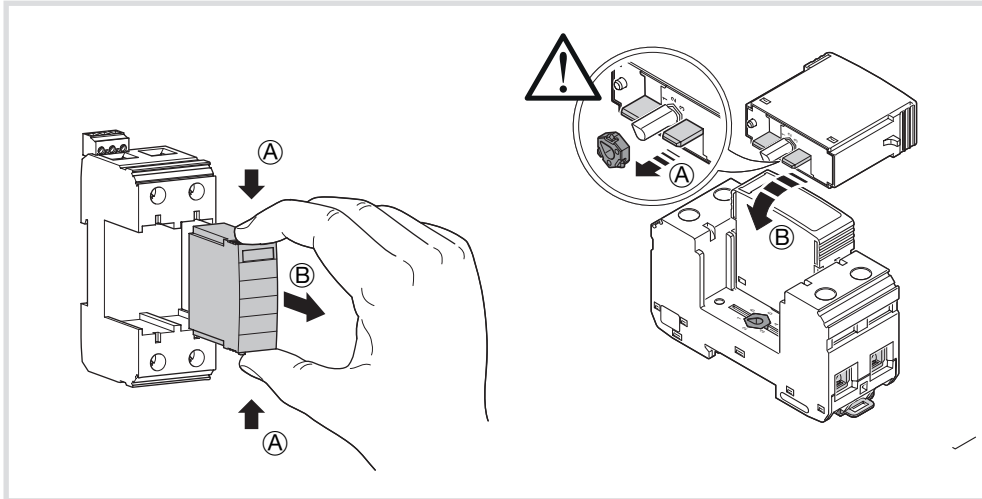
Design 10 Dimensions (mm)

| | Enclosure Size | | |
|---------|----------------|-----|-----|
| | 5 | 6 | 7 |
| Height | 246 | 246 | 246 |
| Width | 370 | 406 | 478 |
| Depth 1 | 83 | 83 | 83 |
| Depth 2 | 100 | 100 | |

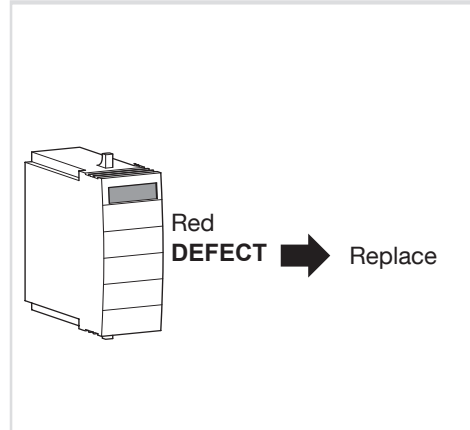
| | Number of Knockouts | | |
|--------------------------|---------------------|--------|--------|
| | 4 (8) | 5 (10) | 8 (16) |
| Top / Bottom Face 20mm Ø | 4 (8) | 5 (10) | 8 (16) |
| Top / Bottom Face 25mm Ø | 2 (4) | 2 (4) | 1 (2) |
| Top / Bottom Face 32mm Ø | 2 (4) | 2 (4) | 3 (6) |
| Side Face 32mm Ø | 2 (4) | 2 (4) | 2 (4) |



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

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|--|------------------------------------|
| 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

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|--|--------------------------|
| 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) |