

# Consumer Unit

## Design 30 High Integrity 100 (InA)

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

The Design range of consumer units with a 100A rated current ( $I_{nA}$ ) have been designed for any residential applications where the upstream overcurrent protective device such as a cut-out fuse is less than or equal to 100A.

Design 30 is the enhanced board for use in applications where the consumer unit is located in a living area of the dwelling and allows compliance with BS 7671:2018;

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.

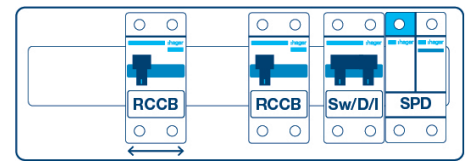
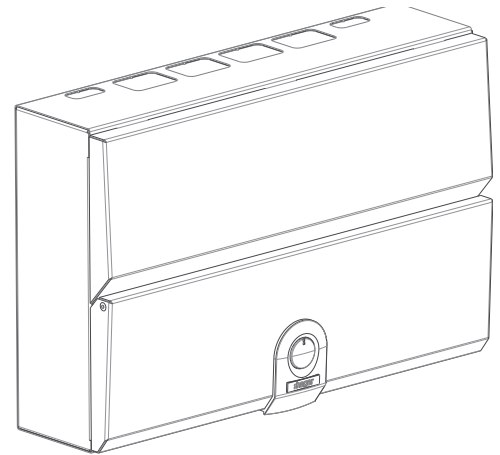
Regulation 531.3.2 Unwanted tripping (ii) in order to avoid unwanted tripping by protective conductor currents and/or earth leakage currents, the accumulation of such currents downstream of the RCD shall not be more than 30% of the rated residual operating current. High integrity boards allow circuits 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.



VM908CUSPD

Description	Size	Cat ref.	Cat ref. with Knockouts
8 Way HI Cf 100A Sw 2*100A 30mA Type A RCCB with SPD	5	VM908CUSPD	VM908CUKSPD
10 Way HI Cf 100A Sw 2*100A 30mA Type A RCCB with SPD	6	VM910CUSPD	VM910CUKSPD
14 Way HI Cf 100A Sw 2*100A 30mA Type A RCCB with SPD	7	VM914CUSPD	VM914CUKSPD
Dual Row HI Conf 6+10 Way 100A Sw 2*100A Type a RCCB with SPD	4(2)	VM90610CUSPD	VM90610CUKSPD
Dual Row HI Conf 10+14 Way 100A Sw 2*100A Type A RCCB with SPD	5(2)	VM91014CUSPD	VM91014CUKSPD
Dual Row HI Cf 16+20 Way 100A Sw 2*100A Type A RCCB with SPD	7(2)	VM91620CUSPD	VM91620CUKSPD

## Features & Benefits

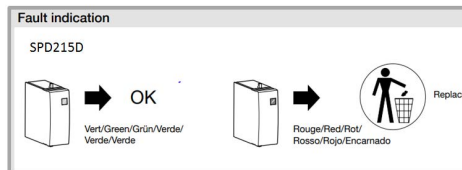
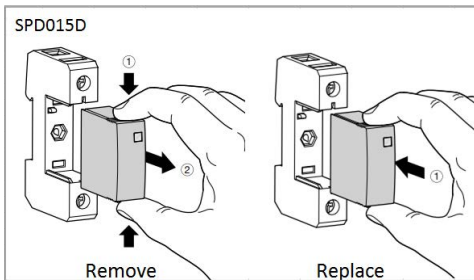
- 100A RCCBs allow the board to be installed with upstream overload protection offered by any rating of cut out fuse (60, 80, 100A) without the need to calculate the sum of the downstream devices to establish overload requirements.
- Type A RCCBs for general purpose circuits and circuits containing equipment incorporating electronic components.
- Cable clamp – Secures supply cables on entry to main incoming device preventing any movement being transmitted through metertails to device.
- High integrity layout allows RCBOs to be fitted separate to the RCCBs for reduction of nuisance tripping on essential circuits and dividing earth leakage across multiple RCDs.
- Square cable entry points top and bottom for use with cable trunking.
- Meter tail cable entry plate (VM04CE) provided
- Rear knockouts for ease of cable entry – Cable protector plate (VM02CE) provided
- Rigid top wall – Enhances rigidity to prevent distortion when removing knockouts.
- Front cover retained screws – Prevents loss during installation
- Locate and hold cover – allows use of both hands whilst fitting cover.
- Full metal din rail – Secure and stable attachment of devices.
- Quick release clip on MCB/RCBO – Allows fitting and removal of device with busbar in place.
- Optimised cabling space – Din rail positioned to provide maximum space at top of board.
- 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 – easily accessible to electrician during installation and maintenance.
- Factory fitted type 2 surge protection



**Surge protection devices**

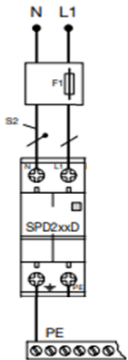
Consumer units with SPD in the part reference come with a Type 2 (T2) surge protection device. All connections to and from the surge protection device are made at the factory. The phase is protected by a Metal Oxide Varistor (MOV) and the neutral by a spark gap device. The Metal Oxide Varistor will degrade each time it deals with high voltage or electromagnetic disturbances, when it is end of life the flag will turn red and the cartridge will require to be changed. At this point the cartridge will fail open circuit and the device will no longer provide surge protection. Simply remove the cartridge and replace with a new cartridge (SPD015D). The rest of the installation will remain unaffected.

**To remove a cartridge when the flag is red**



**Position of SPD in installation**

TT/ TN-S/ TNC-S



Overcurrent protection (F1) is provided by the upstream over current protection device (OCPD) which for a consumer unit is generally the service cut-out fuse.

**SPD Characteristics**

	$I_n$ (8/20 $\mu$ s)	$I_{max}$ (8/20 $\mu$ s)	$U_p$	$U_c$	F1 max $\ominus$	$I_{pe}$	$I_{scrr}$	
SPD215D	5 kA	15 kA	$\leq 1$ kV	275 V (50/60 Hz)	125 A gG	$< 5 \mu$ A	10 kA <sub>rms</sub>	SPD015D