Catalogue

Residential Distribution

:hager

Residential Distribution solutions

BS 7671:2018 Amendment 2 was issued 28th March 2022.

The Wiring Regulations **(BS 7671)** regularly comes under review to ensure all standards are compliant with todays electrical needs.

These reviews may also happen when standards change at an International or European level, to ensure technical consistency with the UK.

The general structure of the Wiring Regulations remains unchanged, however there is now an additional part 8 on the topic of Functional requirements of Prosumer's Electrical Installations.

This edition may be implemented immediately however **BS 7671:2018+A1:2020** remains current until it is withdrawn on **27th September 2022.**

During this transition period a Designer or Installer can use either edition for compliance for his installation. They will, however, have to choose which edition they are working to, as it is not acceptable to mix clauses from the two amendments.

Contents

Introducing

18th Edition Amendment 2

Previously there was the term ‘installations designed after a certain date are to comply to the new edition’. This time Amendment 1 is withdrawn on 27th September 2022 to bring BS 7671 into line with other British Standards when they are reviewed. In practice what this means is that completion of an electrical installation designed to the withdrawn standard will need to be subject to a contractual agreement between all parties involved.

Existing installations that have been installed in accordance with earlier editions of the Regulations may not fully comply with Amendment 2 requirements. This does not necessarily mean that they are unsafe for continued use or require upgrading. New work however carried out on an existing installation will need to meet the requirements of Amendment 2 after 27th September 2022.

Arc Fault Detection (421.1.7)

“Regulation 421.1.7 now states AFDD conforming to BS EN 62606 shall be provided for single-phase AC final circuits supplying socket-outlets with a rated current not exceeding 32A in...”

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Surge Protection (443.4.1)

“Regulation 443.4.1 now requires protection against transient overvoltages to be provided where the consequence caused by the overvoltage could result in...”

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Overload Protection of RCCBs, Switches (536.4.3.2)

“RCCBs & switches do not provide protection against overload, therefore they shall be protected by an overcurrent protective device...”

(536.4.202)

“ ... overload protection shall not solely be based on the use of diversity factors of the downstream circuits. To achieve overload protection of RCCBs or switches, the rated current of the overcurrent protective device (OCPD) shall be selected according to the manufacturers instructions...”

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RCD Selection (531.3.3)

“Different types of RCD exist, depending on their behaviour in the presence of DC components and frequencies. The appropriate RCD shall be selected...”

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RCD protection of socket outlets (411.3.3)

“Regulation 411.3.3 referring to RCD protection of socket-outlets up to 32 A has been redrafted and now has three indents for the requirements of RCD protection not exceeding 30 mA...”

Page 11

Precautions where particular risk of fire exits (422.2)

“Regulation 422.2 requires that:
Cables or other electrical equipment shall not be installed in a protected escape route unless part of: (i) an essential fire safety or related safety system...”

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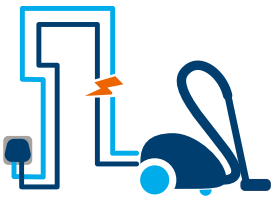
Arc Fault Detection Devices

Parallel Arc Fault



Series Arc Fault

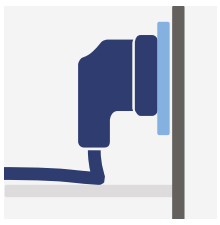
Arc fault detection devices (AFDD) use microprocessors to identify characteristic current flow and voltage curves that indicate an arc fault and automatically trip the affected circuit.

This significantly reduces the risk of fire due to faulty conductors and connections. The protective function of the AFDD has already proven its worth internationally and the use of arc fault detection devices conforming to BS EN 62606 is recommended as a means of providing additional protection in AC final circuits.

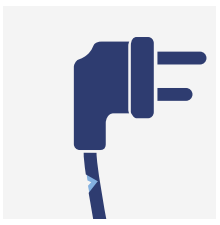
The 18th Edition of BS 7671, recommends the use of these to provide additional protection against fire.

Potential Causes

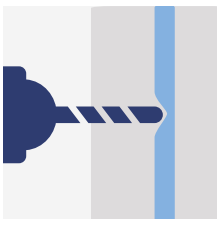
Arc faults can be caused by all types of line faults and worn contacts. An AFDD will trip the circuit when a potentially hazardous arc occurs, eliminating the resulting fire hazard.



Kink/break in the cable

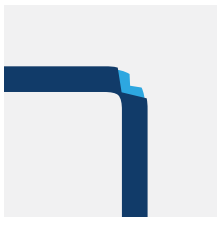


Cable wear due to frequent use

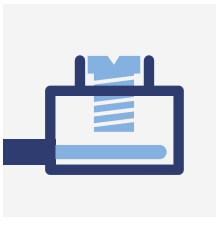


Line damage resulting from drilling or construction work

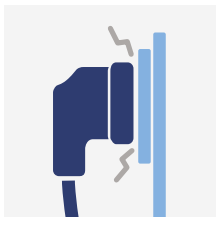
Incorrect wire stripping



Incorrect bending radii



Loose screwed connections



Defective plugs

Rodent bites

The biggest change to be aware of that has been made to Amendment 2, is that the use of Arc Fault Detection Devices (AFDD) have changed from being recommended to a mandatory use in certain types of installations.

With the increase of new technologies being introduced and being more widely used, these devices are becoming more vitally important to everyday life.

Regulation 421.1.7 now states AFDD conforming to BS EN 62606 shall be provided for single-phase AC final circuits supplying socket-outlets with a rated current not exceeding 32A in:

- Higher risk residential buildings (HRRB)
- Houses in multiple occupation (HMO)
- Purpose-built student accommodation (PBSA)
- Care homes

For all other premises, the use of AFDDs is recommended for single-phase AC final circuits supplying socket-outlets not exceeding 32A.

Higher risk residential buildings (HRRB)

Higher Risk Residential Buildings are assumed to be residential buildings over 18 m in height or in excess of six storeys, whichever is met first. Should this building incorporate a business premises on the ground floor for example then this too could fall under this requirement.

Houses in multiple occupation (HMO)

A house in multiple occupation is a property rented out by at least three people who are not from one “Household” but share facilities like a bathroom or kitchen.

Purpose-built Student accommodation

PBSA is housing built specifically for students to live in.

Care home

A care home is a place where personal care and accommodation are provided together.

Surge Protection

With everyday activities relying on electronic equipment, the whole nature of how electrical equipment is used in homes and at work has evolved.

Transient Overvoltages

Products such as computers, printers, flat screen televisions, alarms, microwaves and washing machines are common place. These can all be vulnerable to **transient overvoltages**, which can significantly reduce the equipment's lifespan through degradation and damage.

A transient overvoltage or surge is a short duration increase in voltage measured between two or more conductors. In short, this means anything from microseconds (millionths of a second) to a few milliseconds (thousandths of a second) in duration.

The requirements of Section 443 on protection against Transient Overvoltages has been completely rewritten with the risk assessment removed.

Regulation 443.4.1 now requires protection against transient overvoltages to be provided where the consequence caused by the overvoltage could result in:

(i) serious injury to, or loss of, human life
(ii) failure of a safety service, as defined in Part 2
(iii) significant financial or data loss.

For all other cases, protection against transient overvoltages shall be provided unless the owner of the installation declares it is not required due to any loss or damage being tolerable and they accept the risk of damage to equipment and any consequential loss.

Indent (ii) however requires the use of overvoltage protection devices to protect a Safety Service. This is defined in Part 2 as;

An electrical system for electrical equipment provided to protect or warn persons in the event of a hazard, or essential to their evacuation from a location.

A fire or smoke detection system would fall into this definition. If then this system is supplied from the electrical installation then an overvoltage could cause it to fail and as such requires protection.

The simplest way to provide this protection may be to supply it at the distribution board or consumer unit.

Surge Protection Devices

SPD's protect electrical and electronic equipment against transients, originating from lightning, switching of transformers, lighting and motors. These transients can cause premature aging of equipment, downtime, or complete destruction of electronic components and materials. SPDs are strongly recommended for installations that are exposed to transients, to protect sensitive and expensive electrical equipment such as TVs, washing machines, PCs, alarms etc.

Selection Criteria

Surge protection devices are classified according to their functions:

Type 1

SPD which can discharge partial lightning current with a typical waveform 10/350 µs. Usually employs spark gap technology.

Type 2

SPD which can prevent the spread of overvoltages in the electrical installations and protects equipment connected to it. It usually employs metal oxide varistor (MOV) technology and is characterised by an 8/20 µs current wave.

Type 3

These SPDs have a low discharge capacity. They must therefore only be installed as a supplement to Type 2 SPD and in the vicinity of sensitive loads. Type 3 SPD's are characterised by a combination of voltage waves (1.2/50 µs) and current waves (8/20 µs).

Terminology

I_{imp} – Impulse current of 10/350 µs waveform associated with Type 1 SPD's.

I_n – Surge current of 8/20 µs waveform associated with Type 2 SPD's.

U_p - The residual voltage that is measured across the terminal of the SPD when I_n is applied.

U_c - The maximum voltage which may be continuously applied to the SPD without it conducting.

Overload Protection

536.4.3.2

"RCCBs & switches do not provide protection against overload, therefore they shall be protected by an overcurrent protective device."

536.4.202

“ ... overload protection shall not solely be based on the use of diversity factors of the downstream circuits. To achieve overload protection of RCCBs or switches, the rated current of the overcurrent protective device (OCPD) shall be selected according to the manufacturers instructions”.

2 Pole **100A** 30mA RCCB

Devices such as switches, RCCBs etc. in distribution boards and consumer units may have historically had their rated current determined after having taken diversity into account but without having considered overload protection of the devices.

These devices do not provide protection against overload and the 18th Edition prescribes that overload protection of the switch or RCCB shall not solely be based on the use of diversity factors of the downstream circuits.

Overload protection of switches and RCCBs can be achieved by:

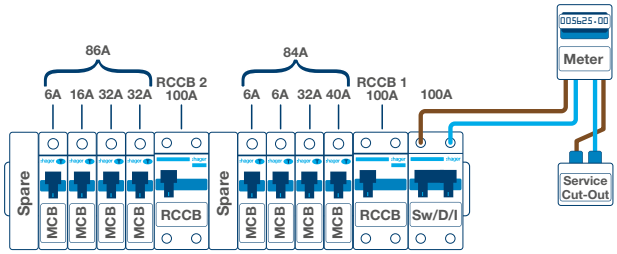
Method 1
Ensure the sum of the rated current of the downstream MCBs do not exceed the rated current of the switch or RCCB (I_{nc}). This method would however need to consider the consequences of any spare ways and later additions.

Method 2
Ensure that the rated current of a switch or RCCB (I_{nc}), stated by the assembly manufacturer, is not less than the rating of the upstream OCPD. For a domestic installation this could be a 100A cut-out fuse.

Method 3
Select a consumer unit or distribution assembly that only utilises RCBOs on outgoing circuits. Consideration will still need to be given as to the rated current of the main switch.

Example 1

Maximum demand based upon diversity = 92 A
(100% Largest load + 40% all other loads)
Consumer Unit I_{nA} = 100A



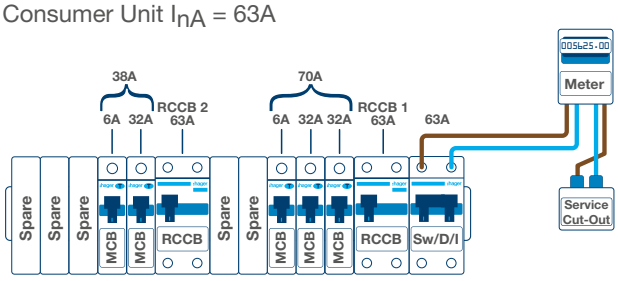
Method 1. Overload protection provided by: Sum of Rated current of downstream devices
RCCB1 ≥ Sum of rated current of downstream MCBs: 84 A ☑
RCCB2 ≥ Sum of rated current of downstream MCBs: 86 A ☑

Method 2. Overload protection provided by: Upstream cut-out fuse
RCCBs ≥ Rated current of upstream protection
RCCBs (100 A) - Cut-out fuse 100 A ☑
Cut-out fuse 80 A ☑
Cut-out fuse 60 A ☑

Summary
A consumer unit with a rated current of 100A (I_{nA}), with two RCCB 100A (I_{nc}) will allow the consumer unit to be installed in any single phase application up to 100A.

Example 2

Maximum demand based upon diversity = 62.4 A
(100% Largest load + 40% all other loads)
Consumer Unit I_{nA} = 63A



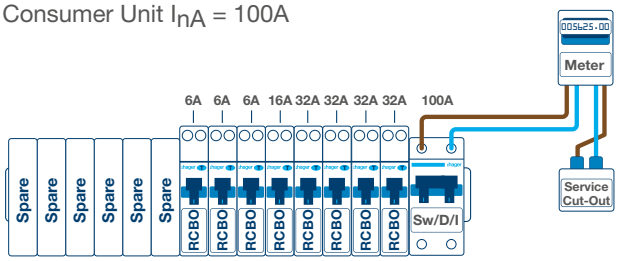
Method 1. Overload protection provided by: Sum of Rated current of downstream devices
RCCB1 ≥ Sum of rated current of downstream MCBs: 70 A ☒
RCCB2 ≥ Sum of rated current of downstream MCBs: 38 A ☑

Method 2. Overload protection provided by: Cut-out fuse
RCCBs ≥ Rated current of upstream protection
RCCBs (63 A) - Cut-out fuse 100 A ☒
Cut-out fuse 80 A ☒
Cut-out fuse 60 A ☑

Note: Potential future loads on spare ways should be considered.

Example 3

Maximum demand based upon diversity = 84 A
(100% Largest load + 40% all other loads)
Consumer Unit I_{nA} = 100A



Method 3. Overload protection provided by: Each RCBO

Method 2. Overload protection provided by: Upstream cut-out fuse
Switch ≥ Rated current of upstream protection
Switch (100 A) - Cut-out fuse 100 A ☑
Cut-out fuse 80 A ☑
Cut-out fuse 60 A ☑

RCD protection of socket outlets

Different types of RCDs were introduced when the 18th edition was first published in 2018 with Regulation 531.3.

Amendment 2 has gone further saying that Type AC RCDs shall only be used where it is known the load current contains no DC components.

This will only be in a purely resistive item of equipment such as a resistive heating element of filament lighting. It is likely then that Type A RCDs as a minimum will generally be used.

Unwanted tripping is still a consideration for the designer of the installation with Regulation 531.3.2.

To achieve this they should ideally ensure there is no more than 30% of the rated residual operating current due to protective conductor current and/or earth leakage currents (i.e. 9mA for a 30mA device).

There is a new indent (ii) to consider the use of RCBOs as opposed to split load arrangements for this purpose.

Type AC

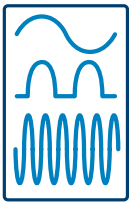
General purpose use

RCD can detect & respond to AC sinusoidal wave only.

Type A

Equipment incorporating electronic components

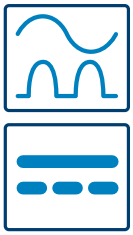
RCD can detect & respond the same as Type AC **+ pulsating DC components.**



Type F

Equipment with frequency controlled speed drives

RCD can detect & respond the same as Type A **+ high frequency residual current.**



Type B

Electric vehicle chargers, PV supplies

RCD can detect & respond the same as Type F **+ smooth DC residual current.**

Regulation 411.3.3 referring to RCD protection of socket-outlets up to 32A has been redrafted and now has three indents for the requirements of RCD protection not exceeding 30mA.

(i) Socket-outlets with a rated current not exceeding 32 A in locations where they are liable to be used by persons of capability BA1, BA3 or children (BA2, BA3),
(ii) Socket-outlets with a rated current not exceeding 32 A in other locations, and
(iii) Mobile equipment with a rated current not exceeding 32A for use outdoors.

An explanation of BA1,BA2 & BA3 can be found in Appendix 5 but are summarised as follows:

BA1

Ordinary Person as defined in Part 2 i.e. not skilled or instructed

BA2

Children

BA3

Disabled persons i.e. Persons not in command of all their physical and/or intellectual abilities (sick persons, old persons)

There is still an exception to omit RCD protection where a documented risk assessment is carried out.

However this can only be applied for indent (ii) and not for (i) or (iii).

Precautions where particular risk of fire exists

A new definition has been included in Amendment 2 of protected escape route.

This is defined as:

A route enclosed with specified fire-resisting construction designated for escape to a place of safety in the event of an emergency.

Regulation 422.2 requires that:

Cables or other electrical equipment shall not be installed in a protected escape route unless part of:

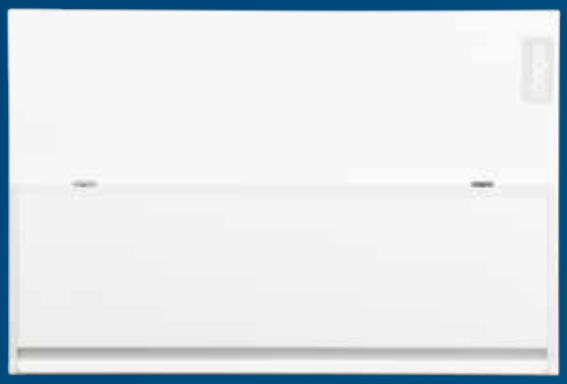
(i) an essential fire safety or related safety system

(ii) general needs lighting

(iii) socket-outlets provided for cleaning or maintenance

There are also requirements for the types of cables and cable management systems to be used in this specific area which are fire resistant or installed within non-flame propagating cable management systems.

Consumer Units



Design 10

Design 10 is our board for all applications. As with all models in the range, there is ample cable space available even when RCBOs are fitted. The top mounted terminal rail makes the wiring of the neutral and earth connections neat and simple. Multiple fixing points are available to ease installation and a full metal DIN rail ensure the devices sit square. Available in surface and flush.

Design 30

Design 30 is our enhanced consumer unit, created to be more aesthetically pleasing whilst including extra features to ease installation. Design 30 comes with a cable clamp installed and rear cable entry plate supplied, which allows for incoming meter tails to be safely secured, eliminating stresses within the switch terminal.

Design 50

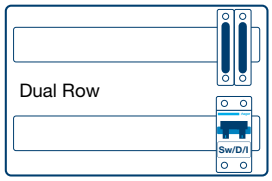
Design 50 focuses on clean aesthetics and a flush fit for seamless integration into any home. Design 50 comes with all the installation features you would expect from us, such as an incoming cable clamp and cable protector plate, as well as a series of colour options, finishes & sizes. There's a Design 50 for any home environment.

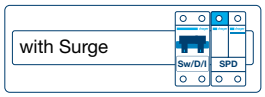
Residential Distribution

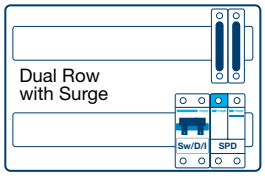
Functional, stylish, and innovative, our Design Range of consumer units provide an exceptional option for any home. In addition, we offer MCB's and RCBO's as well as new surge protection and arc fault detection solutions to provide optimal protection.

Contents

VML106





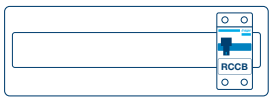


Switch Disconnector Incomer

Characteristics:
- All Design 10 consumer units contain top, bottom & rear knockouts and a meter tail cable entry plate (**VM04CE**) as standard- see page 33 for knockout sizes.
- Supplied with a full metal DIN rail, 100A switch disconnector incomer and a full complement of earth and neutral terminals along with marking labels, busbar and instructions.
- References ending in **SPD** come with a Type 2 SPD fitted.
- Recommended for use with TT systems when utilising RCBO on all outgoing circuits.
- We also recommend the use of cable clamp (**VA10MT**) for use on TT systems, available as an accessory.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- For accessories see page 28, for dimensions see page 33, refer to board sizes below.

Description	Size	Cat ref.	Cat ref. With Round Knockouts
2 Way 63A Switch Disconnector Incomer	2	**VML202**	**VML202RK**
6 Way 63A Switch Disconnector Incomer	3	**VML206**	**VML206RK**
6 Way 100A Switch Disconnector Incomer	3	**VML106**	**VML106RK**
10 Way 100A Switch Disconnector Incomer	4	**VML110**	**VML110RK**
14 Way 100A Switch Disconnector Incomer	5	**VML114**	**VML114RK**
20 Way 100A Switch Disconnector Incomer	7	**VML120**	**VML120RK**
8 Way 100A Switch Disconnector Incomer with Factory Fitted **Surge Protection**	4	**VML108SPD**	**VML108SPDRK**
12 Way 100A Switch Disconnector Incomer with Factory Fitted **Surge Protection**	5	**VML112SPD**	**VML112SPDRK**
18 Way 100A Switch Disconnector Incomer with Factory Fitted **Surge Protection**	7	**VML118SPD**	**VML118SPDRK**
6 + 6 Way Dual Row 100A Switch Disconnector Incomer	3 (2)	**VML10606**	-
10 + 10 Way Dual Row 100A Switch Disconnector Incomer	4 (2)	**VML11010**	-
14 + 14 Way Dual Row 100A Switch Disconnector Incomer	5 (2)	**VML11414**	-
20 + 20 Way Dual Row 100A Switch Disconnector Incomer	7 (2)	**VML12020**	-
8 + 10 Way Dual Row 100A Switch Disconnector Incomer with Factory Fitted **Surge Protection**	4(2)	**VML10810SPD**	-
12 + 14 Way Dual Row 100A Switch Disconnector Incomer with Factory Fitted **Surge Protection**	5(2)	**VML11214SPD**	-
18 + 20 Way Dual Row 100A Switch Disconnector Incomer with Factory Fitted **Surge Protection**	7(2)	**VML11820SPD**	-

VML310AH



RCCB Incomer

Characteristics:
- All Design 10 consumer units contain top, bottom & rear knockouts and a meter tail cable entry plate (**VM04CE**) as standard- see page 33 for knockout sizes.
- Supplied with a full metal DIN rail, 40A, 63A or 100A 30mA Type A RCCB incomer and a full complement of earth and neutral terminals along with marking labels, busbar and instructions.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- For accessories see page 28, for dimensions see page 33, refer to board sizes below.

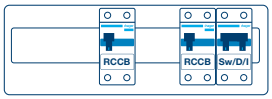
Description	Size	Cat ref.	Cat ref. With Round Knockouts
2 Way 63A 30mA Type A RCCB Incomer	2	**VML402AH**	-
6 Way 63A 30mA Type A RCCB Incomer	3	**VML406AH**	-
10 Way 63A 30mA Type A RCCB Incomer	4	**VML410AH**	-
6 Way 100A 30mA Type A RCCB Incomer	3	**VML306AH**	**VML306AHRK**
10 Way 100A 30mA Type A RCCB Incomer	4	**VML310AH**	**VML310AHRK**
14 Way 100A 30mA Type A RCCB Incomer	5	**VML314AH**	**VML314AHRK**

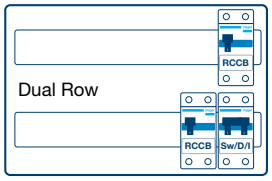
Split Load

VM966H

Characteristics:
- All Design 10 consumer units contain top, bottom & rear knockouts and a meter tail cable entry plate (**VM04CE**) as standard- see page 33 for knockout sizes.
- Supplied with 2 x Type A RCCBs, a full metal DIN rail, 100A switch disconnector incomer and a full complement of earth and neutral terminals along with marking labels, busbar and instructions.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- * 100A device in these boards are de-rated to 80A.
- For accessories see page 28, for dimensions see page 33.

Description	Size	Cat ref.	Cat ref. With Round Knockouts
6 Way 3+3 80A Switch 2x 80A 30mA RCCB*	4	**VML933H***	**VML933RK***
10 Way 5+5 100A Switch 2x 100A 30mA RCCB	5	**VML955H**	**VML955RK**
12 Way 6+6 100A Switch 2x 100A 30mA RCCB	6	**VML966H**	**VML966RK**
14 Way 6+6+2 100A Switch 3x 100A 30mA RCCB	7	**VML9662**	-
4 + 6 Way Dual Row 100A Switch 2x 100A 30mA RCCB	3(2)	**VML946H**	-
8 + 10 Way Dual Row 100A Switch 2x 100A 30mA RCCB	4(2)	**VML90810H**	-
12 + 14 Way Dual Row 100A Switch 2x 100A 30mA RCCB	5(2)	**VML91214H**	-
18 + 20 Way Dual Row 100A Switch 2x 100A 30mA RCCB	7(2)	**VML91820H**	-



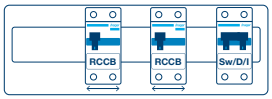


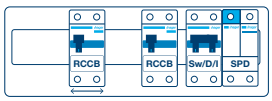
Configurable High Integrity

VML912C

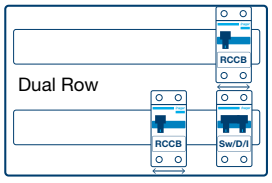
Characteristics:
- Metal split load and configurable consumer units with the ability to protect selected circuits with RCBOs/MCBs and the remainder of circuits split across two RCCBs.
- All Design 10 consumer units contain top, bottom & rear knockouts and a meter tail cable entry plate (**VM04CE**) as standard- see page 33 for knockout sizes.
- Supplied with 2 x Type A RCCBs, a full metal DIN rail, 100A switch disconnector incomer and a full complement of earth and neutral terminals along with marking labels, busbar and instructions.
- References ending in **SPD** come with a Type 2 SPD fitted.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- For accessories see page 28, for dimensions see page 33.

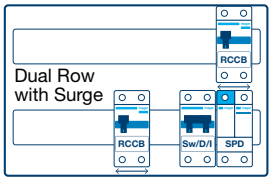
Description	Size	Cat ref.	Cat ref. With Round Knockouts
10 Way 100A Switch 2x 100A 30mA RCCB	5	**VML910C**	-
12 Way 100A Switch 2x 100A 30mA RCCB	6	**VML912C**	-
16 Way 100A Switch 2x 100A 30mA RCCB	7	**VML916C**	-
10 Way High Integrity 100A Switch 2x 100A 30mA RCCB	5	**VML910CU**	**VML910CURK**
12 Way High Integrity 100A Switch 2x 100A 30mA RCCB	6	**VML912CU**	-
16 Way High Integrity 100A Switch 2x 100A 30mA RCCB	7	**VML916CU**	**VML916CURK**
8 Way High Integrity 100A Switch 2x 100A 30mA RCCB with Factory Fitted **Surge Protection**	5	**VML908CUSPD**	**VML908CUSPDRK**
10 Way High Integrity 100A Switch 2x 100A 30mA with Factory Fitted **Surge Protection**	6	**VML910CUSPD**	**VML910CUSPDRK**
14 Way High Integrity 100A Switch 2x 100A 30mA RCCB with Factory Fitted **Surge Protection**	7	**VML914CUSPD**	**VML914CUSPDRK**
8+10 Way Dual Row High Integrity 100A Switch 2x 100A	4(2)	**VML90810CU**	-
12+14 Way Dual Row High Integrity 100A Switch 2x 100A	5(2)	**VML91214CU**	-
18+20 Way Dual Row High Integrity 100A Switch 2x 100A	7(2)	**VML91820CU**	-
6+10 Way Dual Row High Integrity 100A Switch 2x 100A 30mA RCCB with Factory Fitted **Surge Protection**	4(2)	**VML90610CUSPD**	-
10+14 Way Dual Row High Integrity 100A Switch 2x 100A 30mA Type RCCB with Factory Fitted **Surge Protection**	5(2)	**VML91014CUSPD**	-
16+20 Way Dual Row High Integrity 100A Switch 2x 100A 30mA RCCB with Factory Fitted **Surge Protection**	7(2)	**VML91620CUSPD**	-
12 Way Configurable, 100A Switch 1x 100A 30mA RCCB (Remaining Ways for RCBOs)	5	**VML512AC**	-
18 Way Configurable, 100A Switch 1x 100A 30mA RCCB (Remaining Ways for RCBOs)	7	**VML518AC**	-





with Surge





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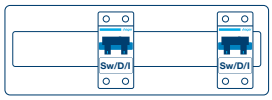
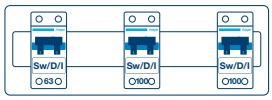
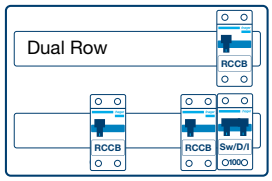




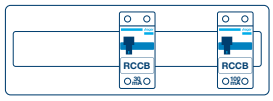


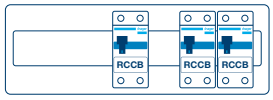
Multi Tariff

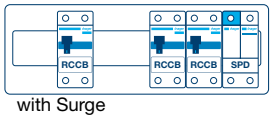
Characteristics:
- All Design 10 consumer units contain top, bottom & rear knockouts and a meter tail cable entry plate (**VM04CE**) as standard- see page 33 for knockout sizes.
- Supplied with Type A RCCBs, a full metal DIN rail, multiple switch disconnector incomers and a full complement of earth and neutral terminals along with marking labels, busbar and instructions.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- For accessories see page 28, for dimensions see page 33.

Description	Size	Cat ref.
18 Way Twin Tariff Configurable 2x 100A Switch	7	**VML918C**
12 Way Multi Tariff 6+5+1 2x100A 1x 63A Switch	6	**VML9651**
10 Way Split Load 5+5 100A Switch 2x 100A Type A RCCB 1x 100A Type A RCCB Incomer 14 Ways Dual Row	5 (2)	**VML955914H**

VML912TG







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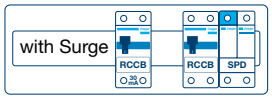
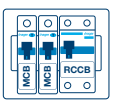


Time Delayed RCCB Incomer

Characteristics:
- All Design 10 consumer units contain top, bottom & rear knockouts and a meter tail cable entry plate (**VM04CE**) as standard- see page 33 for knockout sizes.
- Supplied with Type A RCCBs, a full metal DIN rail 100A 100mA time delayed incomer and a full complement of earth and neutral terminals along with marking labels, busbar, meter tail clamp and instructions.
- Recommended for use with TT systems (meter tail clamp secures meter tails to prevent accidental disconnection and contact with metal enclosure).
- References ending in **SPD** come with a Type 2 SPD fitted.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- For accessories see page 28, for dimensions see page 33, refer to board sizes below.

Description	Size	Cat ref.
12 Way Configurable 100A 100mA Time Delay Type A RCCB 100A 30mA Type A RCCB	5	**VML912TG**
12 Way 100A 100mA Time Delay Type A RCCB 2x 100A 30mA Type A RCCB	6	**VML966TG**
10 Way 100A 100mA Time Delayed + 2 x 100A RCCB with Factory Fitted **Surge Protection**	6	**VML955TGSPD**
10 Way Configurable 100A 100mA Time Delayed RCCB +100A 30mA with Factory Fitted **Surge Protection**	5	**VML910TGSPD**

VML24AH



Garage Boards

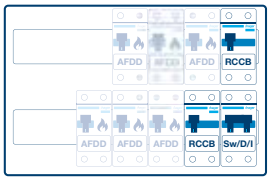
Characteristics:
- Consumer unit comes complete with Type A RCCB, 40A 30mA RCCB Incomer, 32A MCB and 6A MCB, earth & neutral connections, busbar, grommet strip, marking labels & Instructions.
- All Design 10 consumer units contain top, bottom & rear knockouts and a meter tail cable entry plate (**VM04CE**) as standard- see page 33 for knockout sizes.
- Cable protector plate for rear knockouts is available as an accessory. (**VM02CE**)
- Conforms to BS EN 61439-3
- For dimensions see page 33.

Description	Size	Cat ref.
2 Way 40A 30mA Type A RCCB with 1x 32A & 1x 6A MCB	2	**VML24AH**

Arc Fault Protection

VMLA90405H

Characteristics:
- Metal split load board with 100A incomer and 2 x 100A RCCBs.
- Supplied with Type A RCCBs
- Supplied with double pole busbar system.
- All Design 10 consumer units contain top, bottom & rear knockouts and a meter tail cable entry plate (**VM04CE**) as standard- see page 33 for knockout sizes.
- Supplied with Type A RCCBs, a full metal DIN rail, switch disconnector incomer and a full complement of earth and neutral terminals along with marking labels, busbar and instructions.
- Conforms to BS EN 61439-3, Annex ZB (16kA Rating)
- Suitable for use with Hager 2 pole Arc Fault Detection Devices **ARC*****
- For accessories see page 28, for dimensions see page 33, refer to board sizes below.



Description	Size	Cat ref.
5 + 4 Way Dual Row, 100A Switch Disconnector 2x 100A 30mA RCCB, 2 Pole Busbar, for Arc Fault Detection devices	4(2)	**VMLA90405H**
6 + 7 Way Dual Row, 100A Switch Disconnector 2x 100A 30mA RCCB, 2 Pole Busbar, for Arc Fault Detection devices	5(2)	**VMLA90607H**
9 + 10 Way Dual Row, 100A Switch Disconnector 2x 100A 30mA RCCB, 2 Pole Busbar, for Arc Fault Detection devices	7(2)	**VMLA90910H**
5 + 7 Way Dual Row, 100A Switch Disconnector 2x 100A 30mA RCCB, 2 Pole Busbar, + Surge Protection Devices, for Arc Fault Detection Devices	5(2)	**VMLA90507HSPD**
8 + 10 Way Dual Row, 100A Switch Disconnector 2x 100A 30mA RCCB, 2 Pole Busbar, + Surge Protection Devices, for Arc Fault Detection Devices	7(2)	**VMLA90810HSPD**

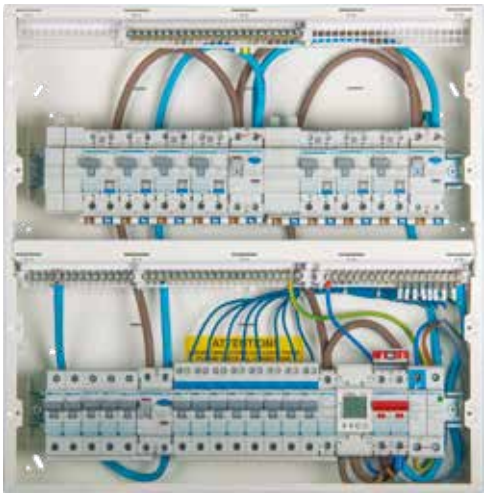
Arc Fault Detection Devices

ARC906U

Characteristics:
- Protection device which combines an MCB with an Arc Fault Detection Device.
- Complies with BS EN 62606
- Current rating 6A - 40A 6kA
- Available in B & C curve
- Connection capacity - Rigid=25mm², Flexible = 16mm²

Description	Width (1 Mod =17.5mm)	Cat ref. B Curve	Cat ref. C Curve
6A	2 Mod	**ARC906U**	**ARC956U**
10A	2 Mod	**ARC910U**	**ARC960U**
16A	2 Mod	**ARC916U**	**ARC966U**
20A	2 Mod	**ARC920U**	**ARC970U**
25A	2 Mod	**ARC925U**	**ARC975U**
32A	2 Mod	**ARC932U**	**ARC982U**
40A	2 Mod	**ARC940U**	**ARC990U**

Tailored Solutions
We can provide the right solution that meets your specification. If your enquiry falls out of the standard offer, for example if you require AFDD in combination with MCBs, RCCBs or RCBOs, Tailored Solutions can meet your requirements.



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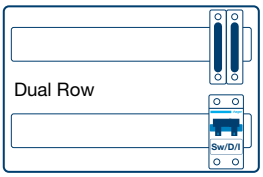
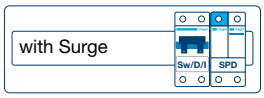
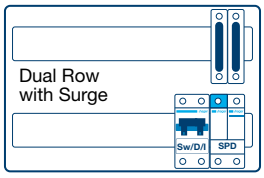
Online form: **go.hager.com/tailored**

VM106







Switch Disconnector Incomer

Characteristics:
- All consumer units contain rear cable entry. Boards with knockouts have top & bottom knockouts. A meter tail cable entry plate (**VM04CE**) is provided as standard - see page 33 for knockout sizes.
- Supplied with a full metal DIN rail, 100A switch disconnector incomer and a full complement of earth and neutral terminals along with marking labels, busbar, instructions, rear cable protector plate and meter tail clamp.
- References ending in **SPD** come with a Type 2 SPD fitted.
- Recommended for use with TT systems when utilising RCBOs on outgoing circuits.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- For accessories see page 28, for dimensions see page 33, refer to board sizes below.

Description	Size	Cat ref.	Cat ref. With Knockouts
2 Way 63A Switch Disconnector Incomer	2	**VM202**	**VM202K**
6 Way 63A Switch Disconnector Incomer	3	**VM206**	**VM206K**
6 Way 100A Switch Disconnector Incomer	3	**VM106**	**VM106K**
10 Way 100A Switch Disconnector Incomer	4	**VM110**	**VM110K**
14 Way 100A Switch Disconnector Incomer	5	**VM114**	**VM114K**
20 Way 100A Switch Disconnector Incomer	7	**VM120**	**VM120K**
8 Way 100A Switch Disconnector Incomer with Factory Fitted **Surge Protection**	4	**VM108SPD**	**VM108KSPD**
12 Way 100A Switch Disconnector Incomer with Factory Fitted **Surge Protection**	5	**VM112SPD**	**VM112KSPD**
18 Way 100A Switch Disconnector Incomer with Factory Fitted **Surge Protection**	7	**VM118SPD**	**VM118KSPD**
6+6 Way Dual Row 100A Switch Disconnector Incomer	3 (2)	**VM10606**	**VM10606K**
10+10 Way Dual Row 100A Switch Disconnector Incomer	4 (2)	**VM11010**	**VM11010K**
14+14 Way Dual Row 100A Switch Disconnector Incomer	5 (2)	**VM11414**	**VM11414K**
20+20 Way Dual Row 100A Switch Disconnector Incomer	7 (2)	**VM12020**	**VM12020K**
8 + 10 Way Dual Row 100A Switch Disconnector Incomer with Factory Fitted **Surge Protection**	4(2)	**VM10810SPD**	**VM10810KSPD**
12 + 14 Way Dual Row 100A Switch Disconnector Incomer with Factory Fitted **Surge Protection**	5(2)	**VM11214SPD**	**VM11214KSPD**
18 + 20 Way Dual Row 100A Switch Disconnector Incomer with Factory Fitted **Surge Protection**	7(2)	**VM11820SPD**	**VM11820KSPD**

VM410AH

RCCB Incomer

Characteristics:
- All consumer units contain rear cable entry. Boards with knockouts have top & bottom knockouts. A meter tail cable entry plate (**VM04CE**) is provided as standard - see page 33 for knockout sizes.
- Supplied with a full metal DIN rail, 40A, 63A or 100A 30mA Type A RCCB incomer and a full complement of earth and neutral terminals along with marking labels, busbar, instructions, rear cable protector plate and meter tail clamp.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- For accessories see page 28, for dimensions see page 33, refer to board sizes below.

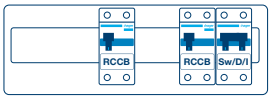
Description	Size	Cat ref.	Cat ref. With Knockouts
6 Way 100A 30mA Type A RCCB Incomer	3	**VM306AH**	**VM306AHK**
10 Way 100A 30mA Type A RCCB Incomer	4	**VM310AH**	**VM310AHK**
14 Way 100A 30mA Type A RCCB Incomer	5	**VM314AH**	**VM314AHK**
2 Way 40A 30mA Type A RCCB Incomer	2	**VM402AH**	**VM402AHK**
6 Way 63A 30mA Type A RCCB Incomer	3	**VM406AH**	**VM406AHK**
10 Way 63A 30mA Type A RCCB Incomer	4	**VM410AH**	**VM410AHK**

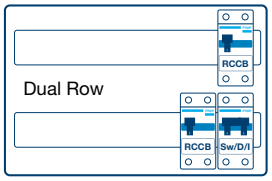
Split Load

VM955H

Characteristics:
- All consumer units contain rear cable entry. Boards with knockouts have top & bottom knockouts. A meter tail cable entry plate (**VM04CE**) is provided as standard - see page 33 for knockout sizes.
- Supplied with Type A RCCBs, a full metal DIN rail, 100A switch disconnector incomer, 2 100A RCCBs and a full complement of earth and neutral terminals along with marking labels, busbar, instructions, rear cable protector plate and meter tail clamp.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- For accessories see page 28, for dimensions see page 33, refer to board sizes below.

Description	Size	Cat ref.	Cat ref. With Knockouts
10 Way Split Load 5+5 100A Switch 2x 100A 30mA RCCB	5	**VM955H**	**VM955HK**
12 Way Split Load 6+6 100A Switch 2x 100A 30mA RCCB	6	**VM966H**	**VM966HK**
4+6 Way Dual Row 100A Switch 2x 100A 30mA RCCB	3 (2)	**VM946H**	**VM946HK**
8+10 Way Dual Row 100A Switch 2x 100A 30mA RCCB	4 (2)	**VM90810H**	**VM90810HK**
12+14 Way Dual Row 100A Switch 2x 100A 30mA RCCB	5 (2)	**VM91214H**	**VM91214HK**
18+20 Way Dual Row 100A Switch 2x 100A 30mA RCCB	7 (2)	**VM91820H**	**VM91820HK**



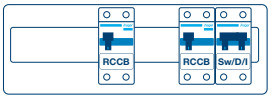


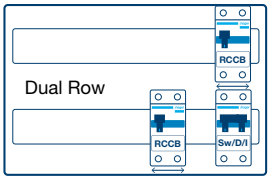
Configurable High Integrity

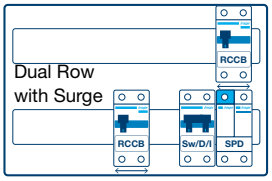
VM916CU

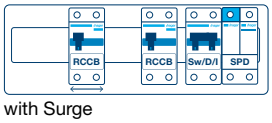
Characteristics:
- Metal split load and configurable consumer units with ability to protect selected circuits with RCBOs/MCBs and the remainder of circuits split across two RCCBs.
- All consumer units contain rear cable entry. Boards with knockouts have top & bottom knockouts. A meter tail cable entry plate (**VM04CE**) is provided as standard - see page 33 for knockout sizes.
- Supplied with Type A RCCBs, a full metal DIN rail, 100A switch disconnector incomer, 2 100A RCCBs and a full complement of earth and neutral terminals along with marking labels, busbar, instructions, rear cable protector plate and meter tail clamp.
- References ending in **SPD** come with a Type 2 SPD fitted.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- For accessories see page 28, for dimensions see page 33, refer to board sizes below.

Description	Size	Cat ref.	Cat ref. With Knockouts
10 Way High Integrity 100A Switch 2x 100A 30mA RCCB	5	**VM910CU**	**VM910CUK**
12 Way High Integrity 100A Switch 2x 100A 30mA RCCB	6	**VM912CU**	**VM912CUK**
16 Way High Integrity 100A Switch 2x 100A 30mA RCCB	7	**VM916CU**	**VM916CUK**
8 Way High Integrity 100A Switch 2x 100A 30mA RCCB with Factory Fitted **Surge Protection**	5	**VM908CUSPD**	**VM908CUKSPD**
10 Way High Integrity 100A Switch 2x 100A 30mA RCCB with Factory Fitted **Surge Protection**	6	**VM910CUSPD**	**VM910CUKSPD**
14 Way High Integrity 100A Switch 2x 100A 30mA RCCB with Factory Fitted **Surge Protection**	7	**VM914CUSPD**	**VM914CUKSPD**
8+10 Way Dual Row High Integrity 100A Switch 2x 100A	4(2)	**VM90810CU**	**VM90810CUK**
12+14 Way Dual Row High Integrity 100A Switch 2x 100A	5(2)	**VM91214CU**	**VM91214CUK**
18+20 Way Dual Row High Integrity 100A Switch 2x 100A	7(2)	**VM91820CU**	**VM91820CUK**
6+10 Way Dual Row High Integrity 100A Switch 2x 100A 30mA RCCB with Factory Fitted **Surge Protection**	4(2)	**VM90610CUSPD**	**VM90610CUKSPD**
10+14 Way Dual Row High Integrity 100A Switch 2x 100A 30mA RCCB with Factory Fitted **Surge Protection**	5(2)	**VM91014CUSPD**	**VM91014CUKSPD**
16+20 Way Dual Row High Integrity 100A Switch 2x 100A 30mA RCCB with Factory Fitted **Surge Protection**	7(2)	**VM91620CUSPD**	**VM91620CUKSPD**
12 Way Configurable, 100A Switch 1x 100A 30mA RCCB (Remaining Ways for RCBOs)	5	**VM512AC**	**VM512ACK**
18 Way Configurable, 100A Switch 1x 100A 30mA RCCB (Remaining Ways for RCBOs)	7	**VM518AC**	**VM518ACK**



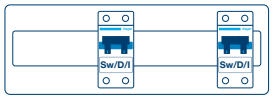


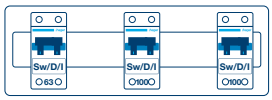


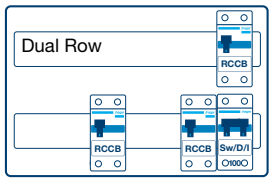


with Surge

VM918C





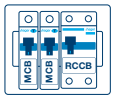


Multi Tariff

Characteristics:
- All consumer units contain rear cable entry. Boards with knockouts have top & bottom knockouts. A meter tail cable entry plate (**VM04CE**) is provided as standard - see page 33 for knockout sizes.
- Supplied with Type A RCCBs, a full metal DIN rail, multiple switch disconnector incomers and a full complement of earth and neutral terminals along with marking labels, busbar, instructions, rear cable protector plate and meter tail clamp.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- For accessories see page 28, for dimensions see page 33, refer to board sizes below.

Description	Size	Cat ref.	Cat ref. With Knockouts
12 Way Multi Tariff 6+5+1 2x 100A 1x 63A	6	**VM9651**	**VM9651K**
18 Way Twin Tariff Configurable 2x 100A Switch	7	**VM918C**	**VM918CK**
10 Way Dual Row Split Load 5+5 100A Switch 2x 100A RCCB 1x 100A RCCB Incomer 14 Ways	5 (2)	**VM955914H**	**VM955914HK**

VM24AH



Garage Board

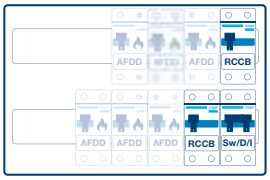
Characteristics:
- Consumer unit comes complete with Type A RCCBs, 40A 30mA RCCB Incomer, 32A MCB and 6A MCB, earth & neutral connections, busbar, cable protector plate, grommet strip, meter tail clamp, marking labels & instructions.
- All consumer units contain rear cable entry. Boards with knockouts have top & bottom knockouts. A meter tail cable entry plate (**VM04CE**) is provided as standard - see page 33 for knockout sizes.
- For dimensions see page 33, refer to board sizes below.

Description	Size	Cat ref.	Cat ref. With Knockouts
2 Way 40A 30mA Type A RCCB with 1x 32A & 1x 6A MCB	2	**VM24AH**	**VM24AHK**

Arc Fault Detection

VMA933H

Characteristics:
- Metal split load board with 100A incomer and 2 x 100A RCCBs.
- Supplied with Type A RCCBs
- Supplied with double pole busbar system.
- All consumer units contain rear cable entry. Boards with knockouts have top & bottom knockouts. A meter tail cable entry plate (**VM04CE**) is provided as standard - see page 33 for knockout sizes.
- Supplied with Type A RCCBs, a full metal DIN rail, switch disconnector incomer and a full complement of earth and neutral terminals along with marking labels, busbar, instructions, rear cable protector plate and meter tail clamp.
- Conforms to BS EN 61439-3 including Annexe ZB
- Suitable for use with Hager AFDD ARC***
- For accessories see page 28, for dimensions see page 33, refer to board sizes below.



Description	Size	Cat ref.	Cat ref. With Knockouts
4+5 Way, Dual Row, 100A Switch Disconnector 2x 100A 30mA RCCB, 2 Pole Busbar, for Arc Fault Detection Devices	4(2)	VMA90405H ★	VMA90405HK ★
6+7 Way, Dual Row, 100A Switch Disconnector 2x 100A 30mA RCCB, 2 Pole Busbar, for Arc Fault Detection Devices	5(2)	VMA90607H ★	VMA90607HK ★
9+10 Way, Dual Row, 100A Switch Disconnector 2x 100A 30mA RCCB, 2 Pole Busbar, for Arc Fault Detection Devices	7(2)	VMA90910H ★	VMA90910HK ★
5 + 7 Way, Dual Row, 100A Switch Disconnector 2x 100A 30mA RCCB, 2 Pole Busbar + Surge Protection Devices, for Arc Fault Detection Devices	5(2)	VMA90507HSPD ★	VMA90507HKSPD ★
8 + 10 Way, Dual Row, 100A Switch Disconnector 2x 100A 30mA RCCB, 2 Pole Busbar + Surge Protection Devices, for Arc Fault Detection Devices	7(2)	VMA90810HSPD ★	VMA90810HKSPD ★

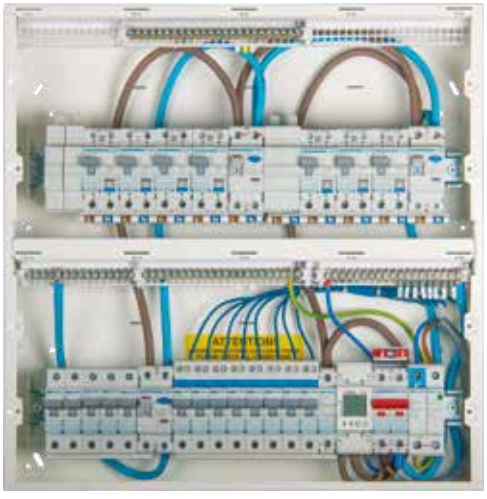
Arc Fault Detection Devices

ARC906U

Characteristics:
- Protection device which combines an MCB with an Arc Fault Detection Device.
- Complies with BS EN 62606
- Current rating 6A - 40A 6kA
- Available in B & C curve
- Connection capacity - Rigid=25mm², Flexible = 16mm²

Description	Width (1 Mod =17.5mm)	Cat ref. B Curve	Cat ref. C Curve
6A	2 Mod	**ARC906U**	**ARC956U**
10A	2 Mod	**ARC910U**	**ARC960U**
16A	2 Mod	**ARC916U**	**ARC966U**
20A	2 Mod	**ARC920U**	**ARC970U**
25A	2 Mod	**ARC925U**	**ARC975U**
32A	2 Mod	**ARC932U**	**ARC982U**
40A	2 Mod	**ARC940U**	**ARC990U**

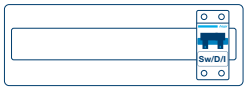
Tailored Solutions
We can provide the right solution that meets your specification. If your enquiry falls out of the standard offer, for example if you require AFDD in combination with MCBs, RCCBs or RCBOs, Tailored Solutions can meet your requirements.



Interested in Tailored Solutions?

Telephone: **01952 675 689**
Online form: **go.hager.com/tailored**

VMLF110

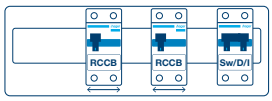


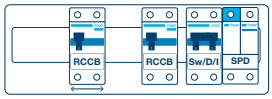
Switch Disconnector Incomer

Characteristics:
- All consumer units contain rear cable entry, along with top & bottom knockouts.
- Supplied with a full metal DIN rail, 100A switch disconnector incomer and a full complement of earth and neutral terminals along with marking labels, busbar, instructions, rear cable protector plate and meter tail clamp.
- Recommended for use with TT systems when utilising RCBO on outgoing circuits.
- Conforms to BS EN 61439-3 including Annex ZB (16kA rating).
- Adjustable depth in wall 72mm-92mm.
- For dimensions see page 33.

Description	Size	Cat ref.
10 Way Flush 100A Switch Disconnector Incomer	4	**VMLF110**
14 Way Flush 100A Switch Disconnector Incomer	5	**VMLF114**
20 Way Flush 100A Switch Disconnector Incomer	7	**VMLF120**
12 Way Flush 100A Switch Disconnector Incomer with Factory Fitted **Surge Protection**	5	**VMLF112SPD**
18 Way Flush 100A Switch Disconnector Incomer with Factory Fitted **Surge Protection**	7	**VMLF118SPD**

VMLF910CU





with Surge

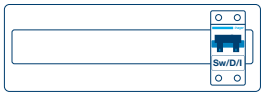
Configurable High Integrity

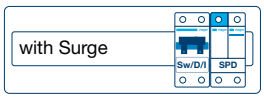
Characteristics:
- Metal split load and configurable consumer units with ability to protect selected circuits with RCBOs and the remainder of circuits split across two RCCBs.
- All consumer units contain rear cable entry, along with top & bottom knockouts.
- Supplied with a full metal DIN rail, 100A switch disconnector incomer and 2 Type A RCCBs and a full complement of earth and neutral terminals along with marking labels, busbar, instructions, rear cable protector plate and meter tail clamp.
- References ending in **SPD** come with a Type 2 SPD fitted.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- Adjustable depth in wall 72mm-92mm.
- For dimensions see page 33.

Description	Max Unprotected Ways	Size	Cat ref.
10 Way Flush High Integrity 100A Switch 2x 100A 30mA Type A RCCB	3	5	**VMLF910CU**
12 Way Flush High Integrity 100A Switch 2x 100A 30mA Type A RCCB	3	6	**VMLF912CU**
16 Way Flush High Integrity 100A Switch 2x 100A 30mA Type A RCCB	6	7	**VMLF916CU**
8 Way High Integrity 100A Switch 2x 100A 30mA RCCB Type A with Factory Fitted **Surge Protection**		5	**VMLF908CUSPD**
10 Way High Integrity 100A Switch 2x 100A 30mA RCCB Type A with Factory Fitted **Surge Protection**		6	**VMLF910CUSPD**
14 Way High Integrity 100A Switch 2x 100A 30mA RCCB Type A with Factory Fitted **Surge Protection**		7	**VMLF914CUSPD**

Switch Disconnector Incomer

VSR114



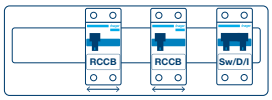


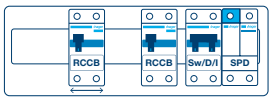
Characteristics:
- All consumer units contain rear cable entry, along with top & bottom knockouts.
- Supplied with a full metal DIN rail, 100A switch disconnector incomer and a full complement of earth and neutral terminals along with marking labels, busbar, instructions, rear cable protector plate and meter tail clamp.
- Recommended for use with TT systems when utilising RCBO on outgoing circuits.
- References ending in **SPD** come with a Type 2 SPD fitted.
- Conforms to BS EN 61439-3 including Annex ZB (16kA rating).
- Adjustable depth in wall 72mm-92mm.
- For dimensions see page 33.

Description	Size	Cat ref.
10 Way 100A Switch Disconnector Incomer	4	**VSR110**
14 Way 100A Switch Disconnector Incomer	5	**VSR114**
20 Way 100A Switch Disconnector Incomer	7	**VSR120**
12 Way 100A Switch Disconnector Incomer with Factory Fitted **Surge Protection**	5	**VSR112SPD**
18 way 100A Switch Disconnector Incomer with Factory Fitted **Surge Protection**	7	**VSR118SPD**

Configurable High Integrity

VSR910C





with Surge

Characteristics:
- Metal split load and configurable consumer units with the ability to protect selected circuits with RCBOs/MCBs and the remainder of circuits split across two RCCBs.
- All consumer units contain rear cable entry, along with top & bottom knockouts.
- Supplied with a full metal DIN rail, 100A switch disconnector incomer and 2 Type A RCCBs and a full complement of earth and neutral terminals along with marking labels, busbar, instructions, rear cable protector plate and meter tail clamp.
- References ending in **SPD** come with a Type 2 SPD fitted.
- Conforms to BS EN 61439-3 Including Annex ZB (16kA rating).
- Adjustable depth in wall 72mm-92mm.
- For dimensions see page 33.

Description	Max Unprotected Ways	Size	Cat ref.
10 Way High Integrity Split Load 100A Switch 2x 100A 30mA RCCB	3	5	**VSR910CU**
12 Way High Integrity Split Load 100A Switch 2x 100A 30mA RCCB	3	6	**VSR912CU**
16 Way High Integrity Split Load 100A Switch 2x 100A 30mA RCCB	6	7	**VSR916CU**
8 Way High Integrity 100A Switch 2x 100A 30mA RCCB with Factory Fitted **Surge Protection**	3	5	**VSR908CUSPD**
10 Way High Integrity 100A Switch 2x 100A 30mA RCCB with Factory Fitted **Surge Protection**	3	6	**VSR910CUSPD**
14 Way High Integrity 100A Switch 2x 100A 30mA RCCB with Factory Fitted **Surge Protection**	6	7	**VSR914CUSPD**

IP55 Weather Proof
100A

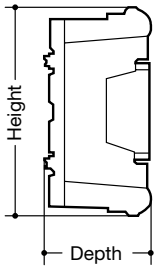
100 A InA Consumer unit enabling conformity with 18th Edition wiring regulations for overload protection of RCCBs and switches, in any single phase residential application regardless of the current rating of the supply authority fuse.

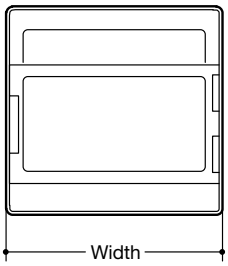
IP55 Weather Proof

Characteristics:

- Rated at IP55 protection against low pressure water splashing from all directions
- Conforms to BS EN 61439-3 including Annex ZB (16kA rating).

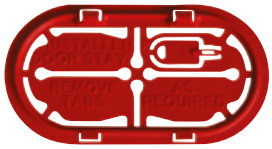
Description	Cat ref.
10 Way 100A Switch Disconnector Incomer IP55	**VW110G**
10 Way 100A 30mA RCCB Incomer Type A	**VW310G**





IP55 Weather Proof

	Dimensions (mm)		
	Width	**Height**	**Depth**
VW110G	**310**	**302**	**151**
VW310G	**310**	**302**	**151**



VM02CE

VM03CB

VM03CE

VM04CB

VM04CE

Cable Protector Plate

Characteristics:
- Provides protection against sharp edges for cables entering a consumer unit.
- **VM01CE**: Simply insert protector plate and bend over tabs inside board.
- **VM02CE**: Designed to fit into the aperture left by the removal of a rear knockout on the Design 10, Design 30 & Design 50 Consumer Unit. (Included as standard with Design 30 & 50 consumer units). Break away sections as required and simply push into place.
- **VM03/04**: Simply clip into place to allow cable entry or blanking of removed knockouts.

Description	Quantity	Cat ref.
Cable Protector Plate (Metal)	1	**VM01CE**
Cable Protector Plate (Insulated)	5	**VM02CE**
Top Wall Cable Protector Plate (30mm x 40mm)	10	**VM03CE**
Top Wall Cable Protector Plate (30mm x 40mm) Closed	10	**VM03CB**
Meter Tail Entry Cable Protector Plate (25mm x 30mm)	10	**VM04CE**
Meter Tail Entry Cable Protector Plate (25mm x 30mm) Closed	10	**VM04CB**

VA10MT

Cable Clamp

Characteristics:
- Secures supply cables on entry to main incoming device, eliminating any movement of the cables being transmitted to the terminals.
- Simply insert supply cables through clamp into incoming device & secure with fixing provided.
- (Included as standard with Design 30 & 50 consumer units)

Description	Cat ref.
Cable Clamp for Meter Tails	**VA10MT**

VMLOCK

Locks

Characteristics:
- **VMLOCK** allows door to be lockable. Simply remove the centre of the lock surround and the knockout behind, and fit lock.
- Provides the ability to lock the consumer unit during the installation process.
- Can only be used with Design 30 consumer units.

Description	Cat ref.
Design 30 Door Locking Kit	**VMLOCK**
Health & Safety Padlock Bracket	**VMHBL**
Padlock	**JK25A**
Design 50 Safety Lock (Pack of 6, Supplied without Padlock)	**VSRHBL**
Padlock (Accessory for Design 50 Safety Lock, Sold Individually)	**JK25A**
Design 50 Door Locking Device	**VSRLOCK**

VMGROM

Grommets & Grommet Strip

Characteristics:
- Grommet for protecting against sharp edges on knockouts.

Description	Quantity	Cat ref.
Grommet strip 5 metres	1 Strip	**VM05GS**
38mm open grommet for use with VMLF* back boxes	10	**VMGROM**

VM01SP

Stand-off Plate

Characteristics:
- The rear stand off plate provides 12mm of clearance at the rear of the consumer unit to allow surface mounted cables to enter the board from the rear avoiding any potential IP issues with the top of the board. Supplied with two cable protector plates as standard.

Description	Cat ref.
Rear stand off plates VM & VML VM01SP	**VM01SP**

Other Accessories

Description	Cat ref.
1 Module Busbar Blank	**JK01B**
Neutral Link	**VAN00**
Dual Tariff Link Kit	**VAK0D**
Split Load Link Kit	**VAK0S**
Triple Tariff Link Kit	**VAK0T**
8 Module Busbar	**VAB08**
12 Module Busbar	**VAB12**
16 Module Busbar	**VAB16**
21 Module Busbar	**VAB21**
Spare Terminal Bar Support Clips (Quantity - 5)	**VAT00**
Terminal Bar 2 Way with Two Support Clips	**VAT02**
Terminal Bar 3 Way with Two Support Clips	**VAT03**
Terminal Bar 4 Way with Two Support Clips	**VAT04**
Terminal Bar 5 Way with Two Support Clips	**VAT05**
Terminal Bar 6 Way with Two Support Clips	**VAT06**
Terminal Bar 7 Way with Two Support Clips	**VAT07**
Terminal Bar 8 Way with Two Support Clips	**VAT08**
Terminal Bar 9 Way with Two Support Clips	**VAT09**
Terminal Bar 10 Way with Two Support Clips	**VAT10**
Terminal Bar 11 Way with Two Support Clips	**VAT11**
Terminal Bar 12 Way with Two Support Clips	**VAT12**
Terminal Bar 13 Way with Two Support Clips	**VAT13**
Terminal Bar 14 Way with Two Support Clips	**VAT14**
Terminal Bar 15 Way with Two Support Clips	**VAT15**
Terminal Bar 16 Way with Two Support Clips	**VAT16**
Terminal Bar 17 Way with Two Support Clips	**VAT17**
Terminal Bar 18 Way with Two Support Clips	**VAT18**
Terminal Bar 19 Way with Two Support Clips	**VAT19**
Terminal Bar 20 Way with Two Support Clips	**VAT20**
Terminal Bar 21 Way with Two Support Clips	**VAT21**
Terminal Bar 22 Way with Two Support Clips	**VAT22**
Terminal Bar 23 Way with Two Support Clips	**VAT23**
Terminal Bar 24 Way with Two Support Clips	**VAT24**
Label Pack	**VAP00**

JK01B

VAB08

VAN00

Locking Kit

Characteristics:
- Allows MCBs, RCCBs and RCBOs to be locked in the off position.
- Will accept two padlocks with hasps of 4.75mm diameter max (supplied without padlock).

Description	Cat ref.
Padlockable Locking Kit for MCB, RCCB & RCBO (Padlock not Included)	**MZN175**
Padlock with 2 keys 3/4”	**JK25A**

MZN175

MTN106

MCBs - Single Pole, B Curve, 6kA

Characteristics:
- Protection and control of circuits against overloads and short circuits for use in domestic installations.
- Complies with BS EN 60898.
- Voltage rating: 230V
- Current rating: 6 - 63A
- Connection capacity: Rigid = 25mm², Flexible = 16mm²
- Calibration temperature: 30°C

Description	Width (1 Mod =17.5mm)	Cat ref.
6A	1 Mod	**MTN106**
10A	1 Mod	**MTN110**
16A	1 Mod	**MTN116**
20A	1 Mod	**MTN120**
25A	1 Mod	**MTN125**
32A	1 Mod	**MTN132**
40A	1 Mod	**MTN140**
50A	1 Mod	**MTN150**
63A	1 Mod	**MTN163**

MCN132

MCBs - Single Pole, C Curve, 6kA

Characteristics:
- Protection and control of circuits against overloads and short circuits for use in domestic installations.
- Complies with BS EN 60898.
- Voltage rating: 230V
- Current rating: 2 - 63A
- Connection capacity: Rigid = 25mm2, Flexible = 16mm²
- Calibration temperature: 30°C

Description	Size	Cat ref.
2A	1 Mod	**MCN102**
3A	1 Mod	**MCN103**
6A	1 Mod	**MCN106**
10A	1 Mod	**MCN110**
16A	1 Mod	**MCN116**
20A	1 Mod	**MCN120**
25A	1 Mod	**MCN125**
32A	1 Mod	**MCN132**
40A	1 Mod	**MCN140**

ARR932U

1 mod Arc Fault Detection Devices

Characteristics:
- Protection device which combines an RCBO with an Arc Fault Detection device.
- Complies with BS EN 62606.
- Currentrating 6A - 32A 6kA
- Available in B curve
- Connection Capacity - Rigid 25mm2, Flexible 16mm2

Description	Size	Cat ref.
6A	1 Mod	**ARR906U**
10A	1 Mod	**ARR910U**
16A	1 Mod	**ARR916U**
20A	1 Mod	**ARR920U**
25A	1 Mod	**ARR925U**
32A	1 Mod	**ARR932U**

CDC225U

CDF525U

CDB525E

2 Pole RCCBs

Characteristics
- To open a circuit automatically in the event an earth fault between line and earth, and/or neutral and earth.

Technical Data
- Conforms to BS EN 61008, IEC1008
- Terminal capacities: 16-63A Rigid 25mm², Flexible 16mm² / 80 & 100A Rigid 50mm², Flexible 35mm²

Features
- Positive contact indication is provided by the rectangular flag indicator
- Red = Closed
- Green = Open
- Indication of trip is provided by the oval flag indicator
- Yellow = Tripped
- All RCCBs have trip free mechanisms and can be padlocked either on or off with the use of a **MZN175**.

Operating Voltage
- 2P 127- 230V a.c.

Sensitivity type A	2 Pole Type A Cat ref.	2 Pole Type F Cat ref.	2 Pole Type B Cat ref.
RCCBs Sensitivity 30mA			
RCCB 25A 30mA	**CDA225U**	**CDF525U** ★	**CDB525E** ★
RCCB 40A 30mA	**CDA240U**	**CDF540U** ★	**CDB540E** ★
RCCB 63A 30mA	**CDA263U**	**CDF563U** ★	-
RCCB 80A 30mA	**CD283U**	-	-
RCCB 100A 30mA	**CD285U**	-	-
RCCBs Sensitivity 100mA			
RCCB 25A 100mA	**CEA225U**	-	-
RCCB 40A 100mA	**CEA240U**	-	-
RCCB 63A 100mA	**CEA263U**	-	-
RCCB 80A 100mA	**CEA580U** ★	-	-
RCCB 100A 100mA	**CEA584U** ★	-	-
RCCBs Sensitivity 300mA			
RCCB 25A 300mA	**CFA225U**	-	-
RCCB 40A 300mA	**CFA240U**	-	-
RCCB 63A 300mA	**CFA263U**	-	-
RCCB 100A 300mA	**CF285U**	-	-
RCCBs Time Delayed			
RCCB 100A 100mA	**CNA584U** ★	-	-
RCCB 100A 300mA	**CPA584U** ★	-	-

ARC906U

2 mod Arc Fault Detection Devices

Characteristics:
- Protection device which combines an MCB with an Arc Fault Detection Device.
- Complies with BS EN 62606
- Current rating 6A - 40A 6kA
- Available in B & C curve
- Connection capacity - Rigid=25mm², Flexible = 16mm²

Description	Width (1 Mod =17.5mm)	Cat ref. B Curve	Cat ref. C Curve
6A	2 Mod	**ARC906U**	**ARC956U**
10A	2 Mod	**ARC910U**	**ARC960U**
16A	2 Mod	**ARC916U**	**ARC966U**
20A	2 Mod	**ARC920U**	**ARC970U**
25A	2 Mod	**ARC925U**	**ARC975U**
32A	2 Mod	**ARC932U**	**ARC982U**
40A	2 Mod	**ARC940U**	**ARC990U**

RCBOs - Single Pole, B Curve, 6kA, 30mA, Type A

Characteristics
- Protection devices which combine the overcurrent functions of an MCB with the earth fault functions of an RCCB.
- Complies with BS EN 61009-1, BS IEC 1009-2-2
- Sensitivity: 30mA
- Connection capacity: Rigid = 16mm², Flexible = 10mm²
- Flying neutral lead: 300mm
- Single pole & solid neutral
- Type A (Pulsating DC Sensitive)
- Operational Voltage: 127-230V AC

ADA332G

Description	Width (1 Mod = 17.5mm)	Height	Cat ref.
6A	1 Mod	Reduced	**ADA306G**
10A	1 Mod	Reduced	**ADA310G**
16A	1 Mod	Reduced	**ADA316G**
20A	1 Mod	Reduced	**ADA320G**
25A	1 Mod	Reduced	**ADA325G**
32A	1 Mod	Reduced	**ADA332G**
40A	1 Mod	Full	**ADA140G**
45A	1 Mod	Full	**ADA145G**

RCBOs - Single Pole & Switched Neutral - 6kA B & C Curve Type A

Characteristics
- The device switches both the line and neutral conductors. All ratings have 30mA earth fault protection. The units feature indicators which show whether tripping is due to an overcurrent or earth fault.
- Conforms to EN 61009-1.
- Operating Voltage: 230V A.C. +10%/-15% 50Hz.
- Mechanical life: 20,000 operations.
- Connection Capacity: Rigid conductor 25mm², Flexible conductor 16mm²
- Neutral connection flying lead - 700mm.

ADA990U

Current rating	Width (1 Mod = 17.5mm)	B Curve Cat ref.	C Curve Cat ref.
6A RCBO SPSN 6kA	2 Mod	**ADA906U**	**ADA956U**
10A RCBO SPSN 6kA	2 Mod	**ADA910U**	**ADA960U**
16A RCBO SPSN 6kA	2 Mod	**ADA916U**	**ADA966U**
20A RCBO SPSN 6kA	2 Mod	**ADA920U**	**ADA970U**
25A RCBO SPSN 6kA	2 Mod	**ADA925U**	**ADA975U**
32A RCBO SPSN 6kA	2 Mod	**ADA932U**	**ADA982U**
40A RCBO SPSN 6kA	2 Mod	**ADA940U**	**ADA990U**

Consumer Unit Type 2 Surge Protection Kit

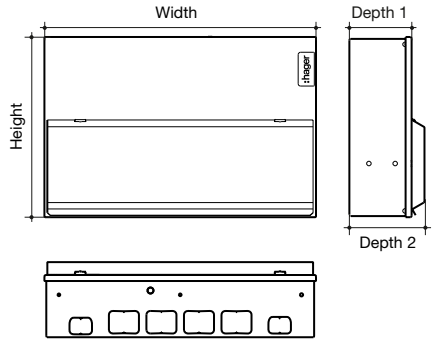
- Consists of: 6mm² neutral, line & earth cables, 1x double pole surge protection device with lifetime indicator.

VME02SPD

Poles	I_n kA L-N	I_n kA N-PE	U_p kV	Width (mm)	Cat ref.
2	5	15	≤ 1.2	35	**VME02SPD**

Replacement Cartridges

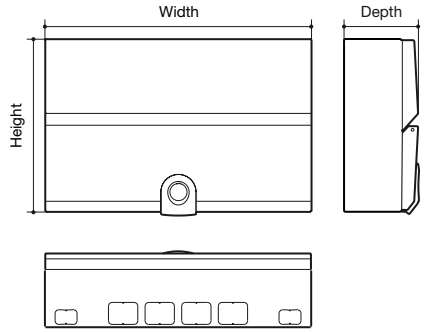
Description	Cat ref.
Line replacement for **VM02SPD**	**SPB015**
Neutral replacement for **VM02SPD**	**SPB040N**



Design 10 Dimensions (mm)

	Enclosure Size					
	2	**3**	**4**	**5**	**6**	**7**
Height	246	246	246	246	246	246
Width	155	227	299	370	406	478
Depth 1	83	83	83	83	83	83
Depth 2	100	100	100	100	100	100

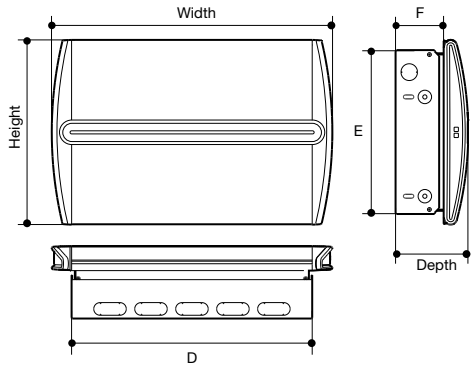
	Boards with Square Knockouts	**Number of Knockouts**					
	Top Face 30 x 25 (mm)	2	2	2	2	2	2
	Top Face 40 x 30 (mm)	0	2	4	4	6	6
	Back 100 x 50 (mm)	1	1	1	3	3	3
	Bottom Face 30 x 25 (mm)	2	3	4	4	5	5



Design 30 Dimensions (mm)

	Enclosure Size					
	2	**3**	**4**	**5**	**6**	**7**
Height	240	240	240	240	240	240
Width	149	221	293	364	400	472
Depth	102.5	102.5	102.5	102.5	102.5	102.5

		Number of Knockouts					
	Top Face 30 x 25 (mm)	2	2	2	2	2	2
	Top Face 40 x 30 (mm)	0	2	4	4	6	6
	Back 100 x 50 (mm)	1	1	1	3	3	3
	Bottom Face 30 x 25 (mm)	2	3	4	4	5	5

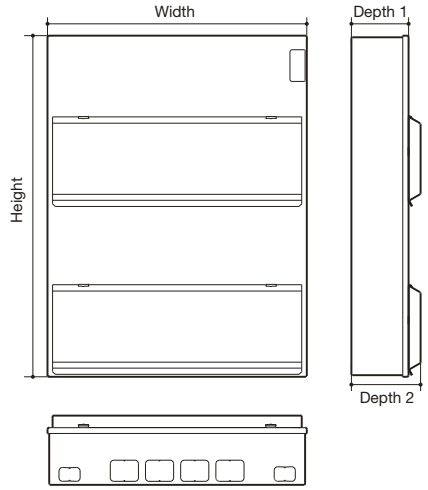


Design 50 Dimensions (mm)

	Enclosure Size			
	4	**5**	**6**	**7**
Height	284	284	284	284
Width	359	431	467	539
Depth	105	105	105	105
D	298	370	406	478
E	252	252	252	252
F	72	72	72	72

		Number of Knockouts			
	Top Face 50 x 20 (mm)	4	5	6	7
	Bottom Face 50 x 20 (mm)	4	5	6	7
	Back 100 x 50 (mm)	2	2	2	3
	Left Face 20.8 (mm)	1	1	1	1

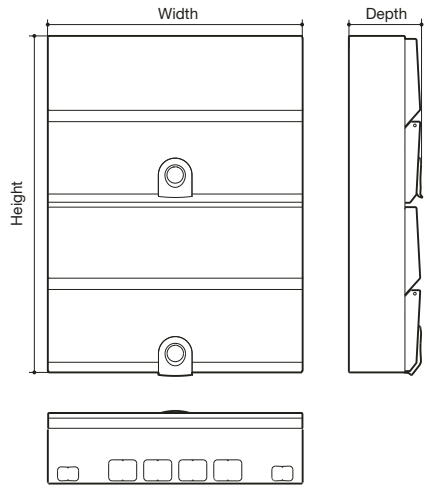
Adjustable Depth Base
The base assembly is adjustable from 72mm to 92mm. At 72mm this allows for a 60mm studwork and 12mm of plasterboard.



Dual Row Design 10 Dimensions (mm)

	Enclosure Size				
	3 (2)	**4 (2)**	**5 (2)**	**6 (2)**	**7 (2)**
Height	486	486	486	486	486
Width	227	299	370	406	478
Depth 1	83	83	83	83	83
Depth 2	100	100	100	100	100

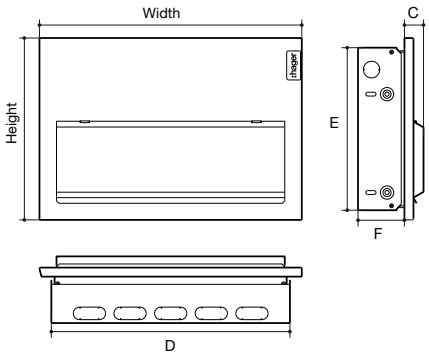
	Number of Knockouts				
Top Face 30 x 25 (mm)	2	2	2	2	2
Top Face 40 x 30 (mm)	2	4	4	6	6
Back 100 x 50 (mm)	2	2	6	6	6
Bottom Face 30 x 25 (mm)	3	4	4	5	5



Dual Row Design 30 Dimensions (mm)

	Enclosure Size				
	3 (2)	**4 (2)**	**5 (2)**	**6 (2)**	**7 (2)**
Height	480	480	480	480	480
Width	221	293	364	400	472
Depth	102.5	102.5	102.5	102.5	102.5

	Number of Knockouts				
Top Face 30 x 25 (mm)	2	2	2	2	2
Top Face 40 x 30 (mm)	2	4	4	6	6
Back 100 x 50 (mm)	2	2	6	6	6
Bottom Face 30 x 25 (mm)	3	4	4	5	5



Flush Design 10 Dimensions (mm)

	Enclosure Size			
	4	**5**	**6**	**7**
Height	282	282	282	282
Width	335	407	443	515
C	32	32	32	32
D	298	370	406	478
E	252	252	252	252
F	72	72	72	72

	Number of Knockouts			
Top Face 50 x 20 (mm)	4	5	6	7
Bottom Face 50 x 20 (mm)	4	5	6	7
Back 100 x 50 (mm)	2	2	2	3
Left Face 20.8 (mm)	1	1	1	1

Consumer Unit
Maximum Unprotected Ways

	Enclosure Size					
	5	**6**	**7**	**4(2)**	**5(2)**	**7(2)**
Max Unprotected Ways	3	3	6	3	7	11

Torque Settings

	 Pz No.	 (mm)	Cables >1.5mm² Tightening torque (N.m) Single Cable	Cables >1.5mm² Tightening torque (N.m) Multi Cables	Cables ≤1.5mm² Tightening torque (N.m) Single Cable	Cables ≤1.5mm² Tightening torque (N.m) Multi Cable	Cable Stripping (mm)
Consumer unit terminals							
Earth and neutral terminal bars	2	6.5	2	2	1.5	1.5	10
Isolation							
Switch Disconnectors / Surge	2	6.5	3.6	3.6	3.6	3.6	15
Circuit protection							
MCB	2	6.5	2.8	2.8	2.8	2.8	13
RCBO	2	5.5	2.1	2.1	2.1	2.1	13
RCCB	2	5.5	2.8	2.8	2.8	2.8	13
AFDD	2	2	2.1	2.1	2.1	2.1	13

MTN Electrical Characteristics.

Poles	Rated Operational Voltage U_e (V)	Nominal Current	Breaking Capacity (I_{cn}) to BS EN 60898	Breaking Capacity (I_{cs}) to BS EN 60898	Rated Insulation Voltage UI (V)	Rated Impulse Voltage Uimp (kV)	Electrical Endurace	Connection of Auxiliaries
Single Pole	230	6 - 63A	6kA	6kA	500V	4kV	10,000 cycles	No

Power Loss
The power loss of MCB's is closely controlled by the standards and is calculated on the basis of the voltage drop across the main terminals measured at rated current. The power loss of hager circuit breakers is very much lower than that required by the British Standard, so in consequences run cooler and are less affected when mounted together.

The table below gives the watts loss per pole at rated current.

MCB Rated current (A)	6	10	16	20	25	32	40	50	63
Watts loss per pole	1.3	1.8	2.4	2.7	3.0	4.4	4.8	5.2	7.4

Connection
The circuit breaker can have the line\load connected to either the top or bottom terminals

Temperature Derating
MCBs are designed and calibrated to carry their rated current and to operate within their designated thermal time/current zone at 30ºC. Testing is carried out with the breaker mounted singly in a vertical plane in a controlled environment. Therefore if the circuit breaker is required to operate in conditions which differ from the reference conditions, certain factors have to be applied to the standard data.

I_n (A)	-25ºC	-20ºC	-15ºC	-10ºC	-5ºC	0ºC	5ºC	10ºC	15ºC	20ºC	25ºC	30ºC	35ºC	40ºC	45ºC	50ºC	55ºC	60ºC
6	8.64	8.4	8.16	7.92	7.68	7.44	7.2	6.96	6.72	6.48	6.24	6	5.76	5.52	5.28	5.04	4.8	4.56
10	14.4	14	13.6	13.2	12.8	12.4	12	11.6	11.2	10.8	10.4	10	9.6	9.2	8.8	8.4	8	7.6
16	23	22.4	21.8	21.1	20.5	19.8	19.2	18.6	17.9	17.3	16.6	16	15.4	14.7	14.1	13.4	12.8	12.2
20	28.8	28	27.2	26.4	25.6	24.8	24	23.2	22.4	21.6	20.8	20	19.2	18.4	17.6	16.8	16	15.2
25	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19
32	46.1	44.8	43.5	42.2	41	39.7	38.4	37.1	35.8	34.6	33.3	32	30.7	29.4	28.2	26.9	25.6	24.3
40	57.6	56	54.4	52.8	51.2	49.6	48	46.4	44.8	43.2	41.6	40	38.4	36.8	35.2	33.6	32	30.4
50	-	-	-	-	-	62	60	58	56	54	52	50	48	46	44	42	40	38
63	-	-	-	-	-	-	-	-	-	-	-	63	60.5	58	55.4	52.9	50.4	47.9

Hager Ltd.
Hortonwood 50
Telford
Shropshire
TF1 7FT

Customer Contact Centre: 01952 675612
Technical Helpline: 01952 675689

hager.com/uk
sales@hager.co.uk
technical@hager.co.uk