

V1



VERS0[®]
domestic circuit protection

#MyInstall

18TH EDITION

The key points you need to know

The Premspec Group is committed to the safety of electrical installers and end users by ensuring that our Verso Circuit Protection (VCP) has been designed in compliance with the new 18th Edition IET wiring regulations BS 7671:2018, which came into effect from January 2019. We have broken the regulations down into bite sized parts that have the biggest impact on the design and installation specifically around consumer units.

RCD Selection (536.3.3)

"Different types of RCD exist, depending on their behaviour in the presence of DC components and frequencies. The appropriate RCD shall be selected" RCCBs and RCBOs are available in a variety of types, each design to support different current behaviours in the presence of DC component or different frequencies. When designing the installation one must select the correct device type for specific applications.

RCD CLASS	Classification	Examples
AC	General Purpose on pure AC 50/60Hz only. Not suitable where Pulsating DC exists	Resistive capacitive such as Immersion heater, Oven, Hob etc.
A	Suitable for use on pure AC AND where pulsating DC exists up to 6mA	Equipment that features electronic components. Type A devices are suitable for all AC Applications
F	AC + A + High frequency 10Hz < 1Khz	Frequency controlled equipment and appliances: White goods with synchronous motors
B	AC + A + smooth DC + High Frequency 10Hz < 1Khz	Three phase electronic equipment: Industrial machines Cranes, EV charging when DC fault current < 6mA

All Verso consumer units with RCD requirement come with 100A 30mA Type A RCCBs. This covers 92% of all current domestic installations.

Strain Relief of Meter Tails (536.4.203)

Every cable or conductor shall be supported in such a way that it is not exposed to undue mechanical strain and so that there is no appreciable mechanical strain on the terminations of the conductors. Consumer unit meter tails are included in the requirements within the legislation.

Verso Consumer Units all have a meter tails clamp (MTC) installed as standard which ensures compliance with this requirement on every installation.



Surge Protection (443.4)

Protection against over-voltages shall be provided where the consequence caused by over-voltage could:

- (i) Result in serious injury to, or loss of human life, or
- (ii) Result in the interruption of public services and/or damage to cultural heritage or,
- (iii) Result in interruption of commercial or industrial activity, or
- (iv) Affect a large number of co-located individuals.

Surge Protection

The key points you need to know

Types of SPDs (three types)

Surge devices are categorised into three specific product types, all grouped around their strengths;

TYPE 1: T1 devices are designed to offer protection against partial lightning current with a typical waveform 10/350 us. Usual employs spark gap technology. They must be able to withstand large amounts of charge and energy. T1 devices must be installed where the buildings include a lightning protection system.

TYPE 2: T2 devices are designed for use within sub-distribution boards (consumer units). T2 SPDs can prevent the spread of over-voltages in the electrical installations and protects equipment which is connected to it. T2 devices cannot protect against direct lightning surges.

TYPE 3: T3 devices are physically the smallest SPDs available. They have a low discharge capacity. They must therefore only be installed as a supplement to TYPE 2 and in the vicinity of sensitive loads. T3 SPDs cannot be installed at the origin of an installation.

Can one SPD fit all domestic installations?

Most SPDs available to protect AC power circuits are built with a *metal oxide varistor (MOV)*. The critical aspect of the MOV is the kA rating of the device which is related to the MOVs cross sectional area and its material composition. The larger the cross sectional area of the MOV dictates the kA rating. With only one or 20kA single MOV in an SPD, it's usually only compatible for TN-C-S earth arrangements. Devices suitable for TN-S earth systems feature 2 MOVs or a 40 kA MOV, these are suitable TN-C-S systems as well.



Selection

Support

- **Use our selection support sections to help you make the right product choice for your installation**

VERSO® T2 SPD's

We've got you covered

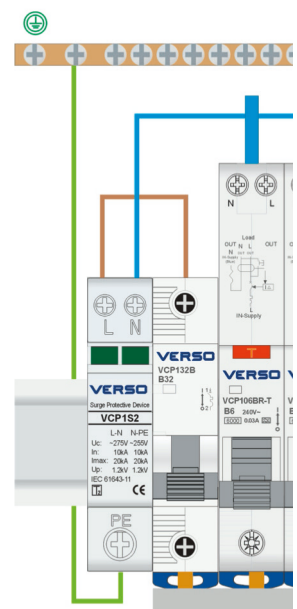
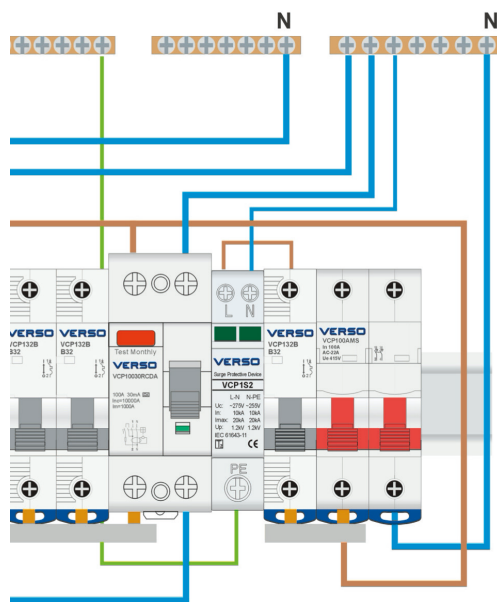


Key Features

- Compact design with MOV and GDT in one Module
 - Pluggable module for easy replacement
 - Din Rail mounted
 - Optional remote signal for convenient checks
 - Coloured indicator for operation status
 - Protective structure to avoid wrong module replacements
 - 40kA rated MOV and GDT
 - Comes with 32A OCP on all pre-wired Consumer Units
- Units

Factory fitted Options

Split Load & Mainswitch versions



Residential Power Distribution

Product Overview

Protection Devices



All Verso[®] RCDs have type A protection and are designed to provide the perfect level of support for any installation on an MCB circuit. Available in various sizes, 100A 30mA factory fitted in all HI boards.

Surge Protection



Verso[®] Surge protection devices have been uniquely built to contain both MOVs and GDTs to enable you to install the correct type of SPD across any* domestic installation

Type A RCBO Devices



With the growth in RCBO installations, we offer a range of type A and A/C tall RCBOS with an entire range of Mini Type A RCBOs coming in the spring of 2021.

VCP Design1.0

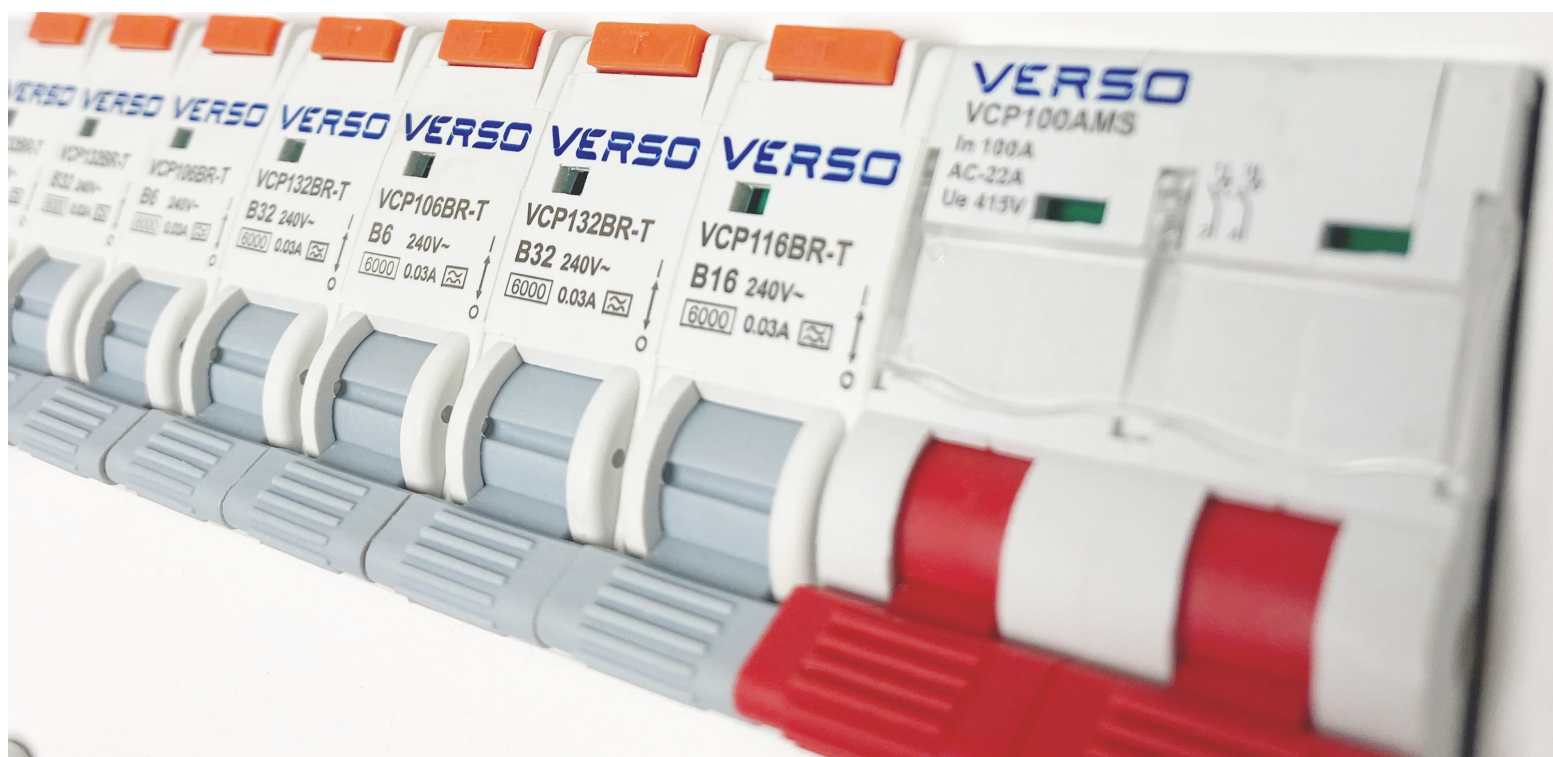


All Verso[®] consumer units have been designed and built with a huge host of installation features. Available from 2 to 22 ways, all with lockable lids as standard.

VCP Design1.0

Verso® Domestic Consumer Unit

The Verso® Design 1.0 range of consumer units is the latest addition to our Verso® product collection. Focused on being aesthetically pleasing, functionally perfect and installer friendly, whilst not only complying with the 18Th Edition but including any recommendations as standard. Our VCPD1.0 comes with features such as incoming cable clamp and cable protector plate, grommet strip, lockable lid and more. VCPD1.0 is available in a series of sizes and ideal for any installation.



Factory fitted SPDs 01

The VCP152 is our type 2 surge protection devices in conformity with IEC/EN61643-11. Its single module size has both an MOV & GDT, making it compliant for all installations within a domestic installation and is rated to an incredible 40kA across both.





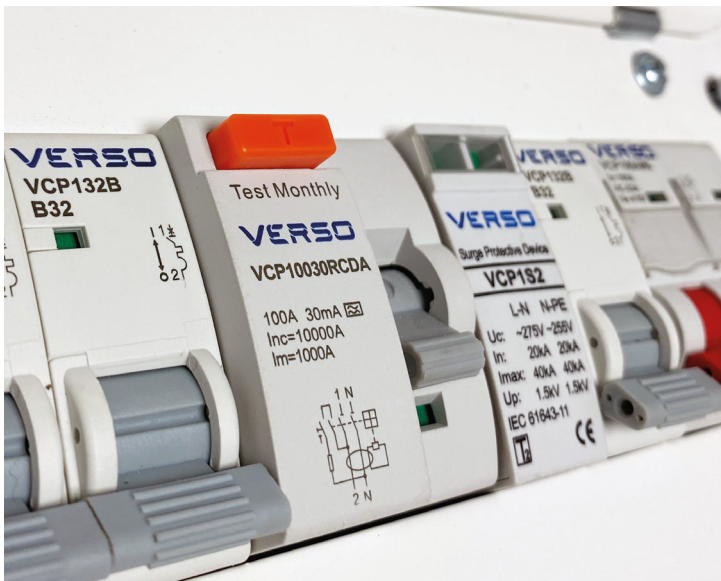
Lockable 02

Our optional lock is an elegant solution to enable temporary locking. Our cleverly engineered lock pilot comes with the board and our VCPK-L slots into the lid with ease.



Cable Clamp 03

Incoming meter tails can be safely secured with a single screw, thereby preventing stresses caused from the installation on the mains switch. This feature comes as standard with every consumer unit.



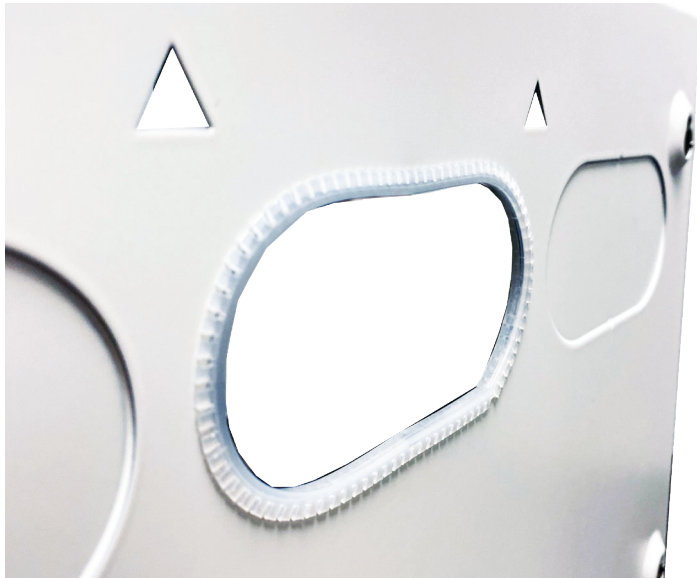
Type A RCDS 04

All of our RCCBs are Type A as standard and our split load boards are all high integrity. We have also upgraded them all to 100A 30mA ratings as standard.



Added Height 05

The VCPD1.0 range has an increased height to the standard UK size. Now standing 260mm tall, it allows for far greater installation space.



Knockout system 06

Large oval knockouts spaced perfectly across the rear of the consumer units to provide great access for cabling.



Overcurrent Protection 07

All factory fitted SPD consumer units come complete with dedicated pre-wired 32A MCBs as overcurrent protection as recommended.



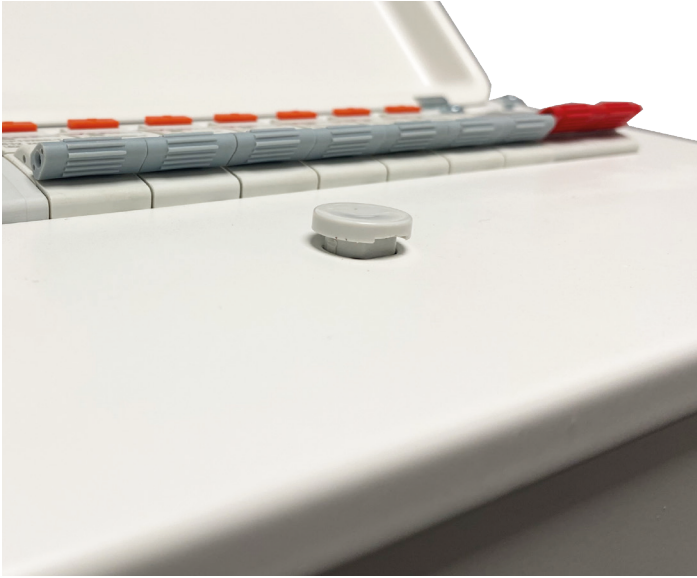
Ferruled connections 08

All pre-wiring has been completed with ferruled terminals to ensure the quality of connection and ensure no fraying is possible.



Detachable Din Rail 09

All of the din rails are detachable for those installation where you want to create more space for yourself.



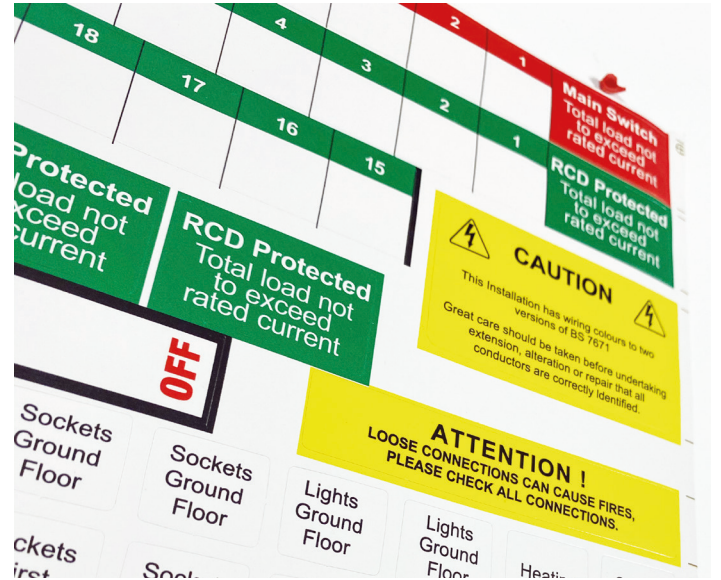
Locking Grommet 10

Each consumer unit has our locking grommet factory fitted as standard and can be pushed flat when not required.



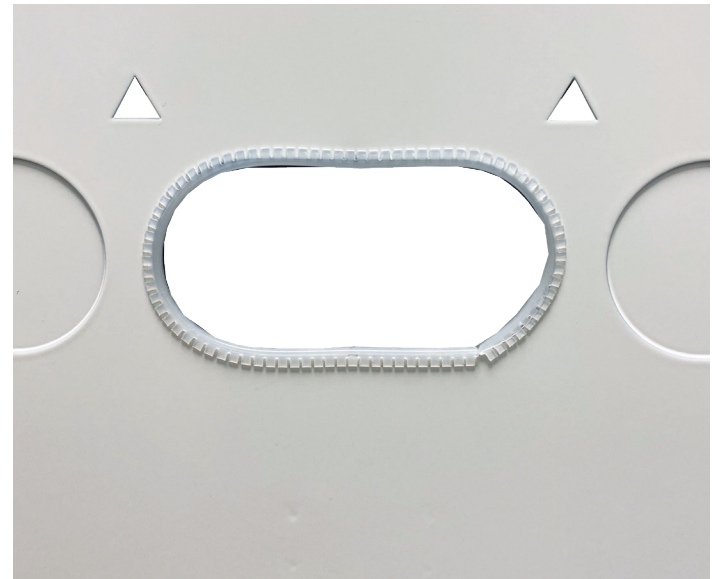
Top & Bottom entry 12

Good number of 20mm, 25mm and 32mm knockouts on the top and the bottom of each consumer unit



Sticker pack 11

An all inclusive, easy to use and professional sticker pack to cover you for all of your labelling needs



Grommet strip & plate 13

FREE grommet strip is provided with each consumer unit to ensure each of your installations can be completed to the safest standards.

Design 1.0 Consumer Units

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100A RCCB rated	1.2
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Residential

Consumer Units

Made to exceed the 18th Edition requirements to support you on every installation and project.

Every VERSO[®] Consumer unit has been designed to make the installation simpler and safer for both the contractor and the homeowner.

Available from 2-22 ways with a variety of factory fitted and empty options.



Metal Consumer Units

100A Incomer Rated VCP Design1.0



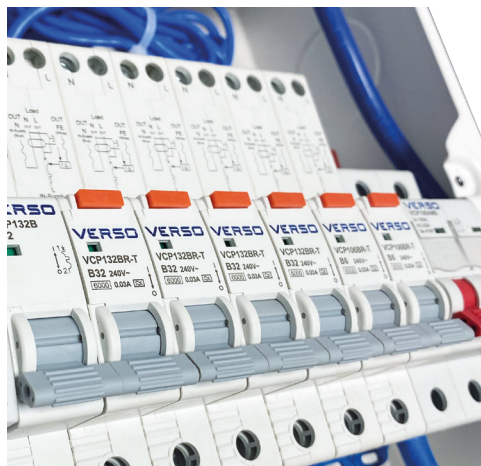
All Design 1.0 VCP consumer units come with top, bottom & rear entry knockouts that are accompanied by grommet strip and a cable entry gland. All items in this range come with 100A Incomer , din rails, terminals and neutral cable, busbars and sticker packs.

Factory fitted SPD options are also available in each size. Please see the details below.

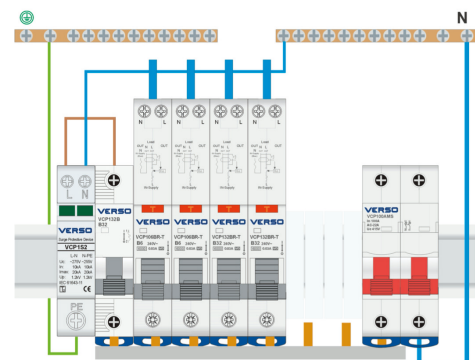
Switch Disconnecter Incomer

Features:

- Conforms to BE EN 61439-3
- References ending with **X** indicate they are factory fitted with Type 2 SPD.
- 32A MCB Factory fitted for OCP for all SPD consumer units
- Recommended for TT systems when utilising RCBO on all outgoing circuits
- Cable clamps are factory fitted as standard as they are recommended on TT systems
- Supplied with Din Rail that is dis-mountable
- Lockable as standard and locks are available as an accessory (**VCPK-L**)
- Additional height (260mm) to improve RCBO installation speed and safety
- Blanks included



Description	Usable Ways	Part Number
10 Way 100A Switch Disconnecter Incomer	8	VCP8M
14 Way 100A Switch Disconnecter Incomer	12	VCP12M
18 Way 100A Switch Disconnecter Incomer	16	VCP16M
22 Way 100A Switch Disconnecter Incomer	20	VCP20M



Description	Usable Ways	Part Number
10 Way 100A Switch Disconnecter Incomer with SPD & OCP	6	VCP8MX
14 Way 100A Switch Disconnecter Incomer with SPD & OCP	10	VCP12MX
18 Way 100A Switch Disconnecter Incomer with SPD & OCP	14	VCP16MX
22 Way 100A Switch Disconnecter Incomer with SPD & OCP	18	VCP20MX

All Design 1.0 VCP consumer units come with top, bottom & rear entry knockouts that are accompanied by grommet strip and a cable entry gland. All items in this range come with 100A Incomer, 100A Type A RCCBs, din rails, terminals and neutral cable, busbars and sticker packs.

Factory fitted SPD options are also available in each size. Please see the details below.

RCCB Split Load

Features:

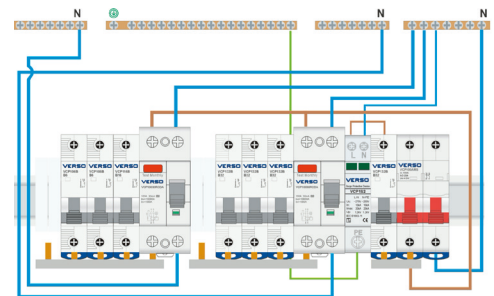
- Conforms to BE EN 61439-3 Including Annex ZB (16kA rating)
- References ending with **X** indicate they are factory fitted with Type 2 SPD.
- 32A MCB Factory fitted for OCP for all SPD consumer units
- Cable clamps are factory fitted as standard as they are recommended on TT systems
- Supplied with Din Rail that is dis-mountable
- Lockable as standard and locks are available as an accessory (**VCPK-L**)
- Additional height (260mm) to improve RCBO installation speed and safety
- Blanks included
- Part populated with MCBs (see size for details)



Description	Usable Ways	Part Number
16 Way High Integrity split (4+4+2) with 2x 100A 30mA Type A RCCBs, 2x 6A, 1x 16A, 3x 32A MCBs	10	VCP10HI
18 Way High Integrity split (5+5+2) with 2x 100A 30mA Type A RCCBs, 2x 6A, 1x 16A, 3x 32A, 1x 40A MCBs	12	VCP12HI
22 Way High Integrity split (7+7+2) with 2x 100A 30mA Type A RCCBs, 3x 6A, 1x 16A, 5x 32A, 1x 40A MCBs	16	VCP16HI
30 Way High Integrity split (11+11+2) with 2x 100A 30mA Type A RCCBs	24	VCP24HI



Description	Usable Ways	Part Number
16 Way High Integrity split (4+4+2) with 2x 100A 30mA Type A RCCBs, SPD & OCP, 2x 6A, 1x 16A, 3x 32A MCBs	8	VCP10HIX
18 Way High Integrity split (5+5+2) with 2x 100A 30mA Type A RCCBs, SPD & OCP, 2x 6A, 1x 16A, 3x 32A, 1x 40A MCBs	10	VCP12HIX
22 Way High Integrity split (7+7+2) with 2x 100A 30mA Type A RCCBs, SPD & OCP, 3x 6A, 1x 16A, 5x 32A, 1x 40A MCBs	14	VCP16HIX
30 Way High Integrity split (11+11+2) with 2x 100A 30mA Type A RCCBs, SPD & OCP	22	VCP24HIX

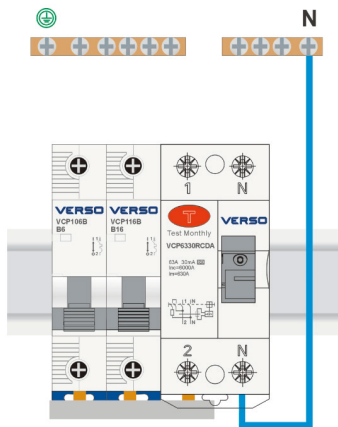


Metal Consumer Units

Garage Units & Enclosures VCP Design1.0



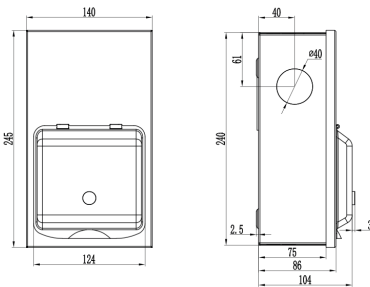
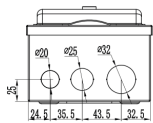
The Verso[®] Design 1.0 4 module enclosures are available with two configurations to best suit your needs. Version one as a populated Garage unit and version 2 as an empty enclosure for your flexible requirements. Each has a detachable din rail, busbars and terminals included, along with round entry knockouts top and bottom and a large oval rear entry knockout.



RCCB Garage unit & Enclosure

Features:

- Conforms to BE EN 61439-3
- Supplied with Din Rail that is dis-mountable
- Lockable as standard and locks are available as an accessory (**VCPK-L**)
- Standard height (245mm)
- Type A 63A RCCB factory fitted on Garage Units
- Busbars and sticker pack



Description

Usable
Ways

Part Number

4 Way 63A 30mA Type A RCCB with 1x6A 1x16A MCB

2

VCPGU

4 Way empty enclosure

4

VCP4

Residential

Protection Devices

All Verso[®] Protection devices have been carefully designed to exceed market standards and provide the installer with a range of devices to suit any residential project.



Protection Devices

Type A Residual Current Devices (RCCBs)



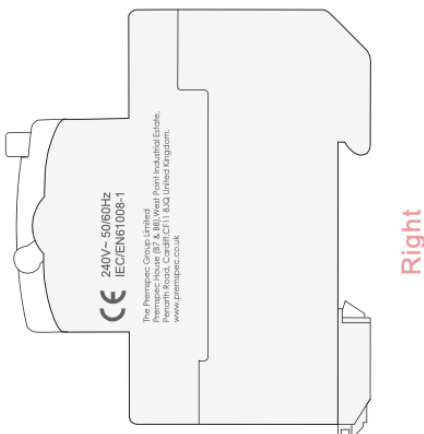
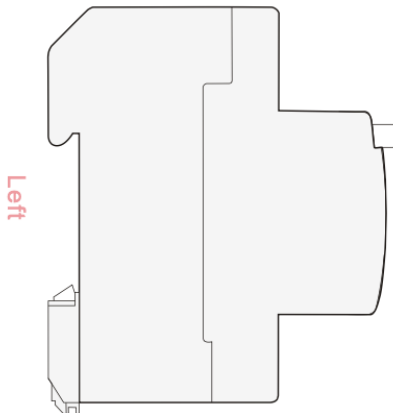
All Verso[®] RCCBs ranging from 16A 30mA to 100A 30mA are type A standard. This makes them future proof in the event that DC current may appear on a circuit you have installed. Future installations such as EV chargers will cause nuisance tripping on A/C RCCB protected circuits.



Type A RCCB

Features:

- Conforms to BE EN 61008
- Type A
- 230V operating voltage
- Positive contact indication is created by flag indicator: Green = Open, Red = Closed
- Range from 16A to 100A capacity



Description	Box	Part Number
16A 30mA Double Pole Type A RCCB	1	VCP1630RCDA
25A 30mA Double Pole Type A RCCB	1	VCP2530RCDA
40A 30mA Double Pole Type A RCCB	1	VCP4030RCDA
63A 30mA Double Pole Type A RCCB	1	VCP6330RCDA
80A 30mA Double Pole Type A RCCB	1	VCP8030RCDA
100A 30mA Double Pole Type A RCCB	1	VCP10030RCDA

Verso® RCBOs are devices that have combined the functionality of an MCB with the functions of an RCCB. These RCBOs are Type A and provide durability and security against DC trickle on A/C circuits for problematic tripping.

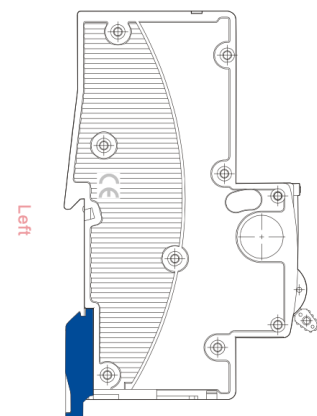
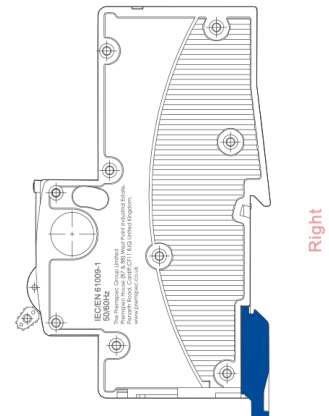
Type A RCBO

Features:

- Conforms to BE EN 61009-1
- Type A (Pulsating DC sensitive)
- 230V operating voltage
- Single Pole & Neutral
- 30mA sensitivity
- 6-50A Current rating
- 300mm flying neutral lead
- Single module with



Description	Box	Part Number
6A 30mA Single Pole + N Type A RCBO	1	VCP106BR-T
10A 30mA Single Pole + N Type A RCBO	1	VCP110BR-T
16A 30mA Single Pole + N Type A RCBO	1	VCP116BR-T
20A 30mA Single Pole + N Type A RCBO	1	VCP120BR-T
25A 30mA Single Pole + N Type A RCBO	1	VCP125BR-T
32A 30mA Single Pole + N Type A RCBO	1	VCP132BR-T
40A 30mA Single Pole + N Type A RCBO	1	VCP140BR-T
50A 30mA Single Pole + N Type A RCBO	1	VCP150BR-T

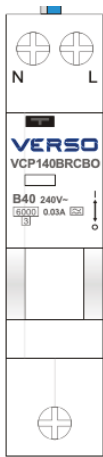


Protection Devices

Type A Mini Residual Current Breaker (RCBO's)



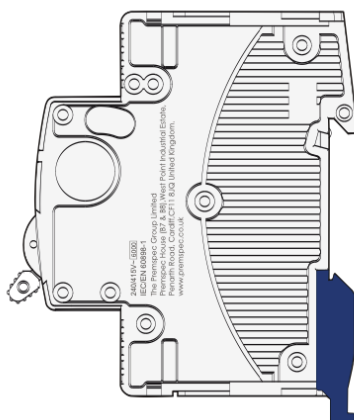
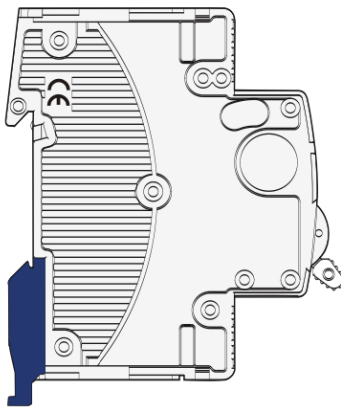
Verso[®] RCBOs are devices that have combined the functionality of an MCB with the functions of an RCCB. These RCBOs are Type A and provide durability and security against DC trickle on A/C circuits for problematic tripping. These Mini RCBOs are designed to be the same size as a regular MCB.



Type A Mini RCBO

Features:

- Conforms to BE EN 61009-1
- Type A (Pulsating DC sensitive)
- 230V operating voltage
- Single Pole & Neutral
- 30mA sensitivity
- 6-40A Current rating
- 300mm flying neutral lead
- Single module with
- MCB sized



Right

Description	Box	Part Number
6A 30mA Single Pole + N Type A RCBO	1	VCP106BR
10A 30mA Single Pole + N Type A RCBO	1	VCP110BR
16A 30mA Single Pole + N Type A RCBO	1	VCP116BR
20A 30mA Single Pole + N Type A RCBO	1	VCP120BR
25A 30mA Single Pole + N Type A RCBO	1	VCP125BR
32A 30mA Single Pole + N Type A RCBO	1	VCP132BR
40A 30mA Single Pole + N Type A RCBO	1	VCP140BR

Verso® RCBOs are devices that have combined the functionality of an MCB with the functions of an RCCB. These RCBOs are Type A/C and provide protection on A/C current circuits only.

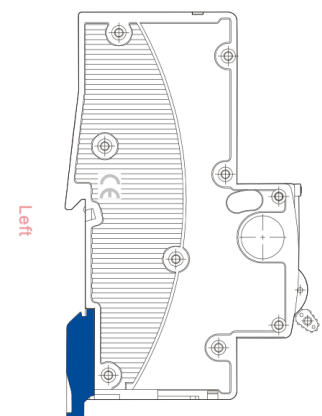
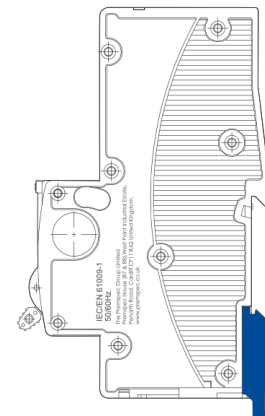
Type A/C RCBO

Features:

- Conforms to BE EN 61009-1
- Type A/C
- 230V operating voltage
- Single Pole & Neutral
- 30mA sensitivity
- 6-50A Current rating
- 300mm flying neutral lead
- Single module with



Description	Box	Part Number
6A 30mA Single Pole + N Type A/C RCBO	1	VCP106BR-1
10A 30mA Single Pole + N Type A/C RCBO	1	VCP110BR-1
16A 30mA Single Pole + N Type A/C RCBO	1	VCP116BR-1
20A 30mA Single Pole + N Type A/C RCBO	1	VCP120BR-1
25A 30mA Single Pole + N Type A/C RCBO	1	VCP125BR-1
32A 30mA Single Pole + N Type A/C RCBO	1	VCP132BR-1
40A 30mA Single Pole + N Type A/C RCBO	1	VCP140BR-1
50A 30mA Single Pole + N Type A/C RCBO	1	VCP150BR-1



Protection Devices

Miniature Current Breaker (MCB's)

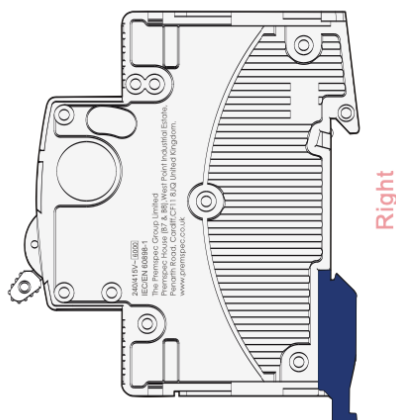
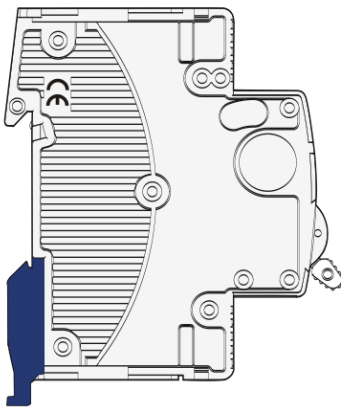


Verso® Miniature circuit breakers (MCBs) protect and control circuits against overloads and short circuits for domestic installations. These MCBs are 6kA rated and B curve which is the domestic standard

Miniature Circuit Breaker

Features:

- Conforms to BE EN 60898
- 6-63A Current rating
- 230V Voltage rating
- 30 degree calibration temperature



Description	Box	Part Number
6A Miniature Circuit Breaker	12	VCP106B
10A Miniature Circuit Breaker	12	VCP110B
16A Miniature Circuit Breaker	12	VCP116B
20A Miniature Circuit Breaker	12	VCP120B
25A Miniature Circuit Breaker	12	VCP125B
32A Miniature Circuit Breaker	12	VCP132B
40A Miniature Circuit Breaker	12	VCP140B
50A Miniature Circuit Breaker	12	VCP150B
63A Miniature Circuit Breaker	12	VCP163B

Residential

Control Devices

There are wide range of control devices available within the Verso[®] range to support your installation. From switch fuses and more.



Accessory Devices

Transformers, Isolator, Contactors & Control

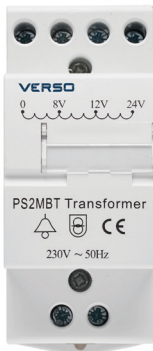


Verso® offers a great selection of transformers, a TP&N isolator, Contactors and timers.

Transformers, Isolators & more

Features:

- 2 Module Bell transformer
- Isolator rating 32A
- 20,25 & 40A Contactor rating
- Digital and Analogue timers



Description	Box	Part Number
2 Module Bell Transformer	1	VCP2MBT
32A metal enclosed TP&N isolator	1	VCP32TPN
20A Double pole contactor	1	VCP20ADPC
25A Double pole contactor	1	VCP25ADPC
40A Double pole contactor	1	VCP40ADPC
Analogue 1 Channel timer 24/7	1	VCP1CT247A
Digital 1 Channel timer 24/7	1	VCP1CT247D
Digital 2 Channel timer 24/7	1	VCP2CT247D

Verso® domestic switch fuses are available in metal enclosures and in their traditional plastic surround. The plastic KMF alternative also comes inclusive with a complimentary shroud.

Switch Fuses

Features:

- Fuse compatible with 60, 80 & 100A (VCPSF100)
- Fuse compatible with 60 & 80A (VCPSF80)
- Self retaining lid (VCPSF100)
- 16mm earthing terminal (VCPSF100)



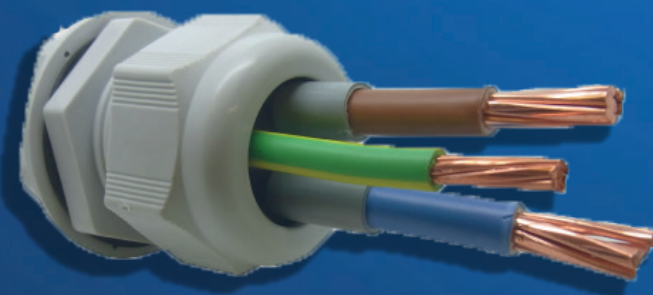
Description	Box	Part Number
Metal 100A Switch fuse enclosure	1	VCPSF100
80A Switch fuse with 80A Fuse & Shroud	1	VCPSF80



Consumer Unit

Accessories

Verso® consumer units have a host of accessories that are already built into each board to support the ease and safety of each installation. There are however, some additional accessories in this section that will further aid each project.

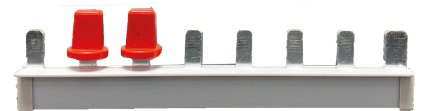


Verso® domestic circuit protection benefits from a vast amount of installation features. In this section you will find further products to assist your installations from locks to glands and more.

Accessories

Features:

- Locks for devices and boards
- Blank modules for din rail installation
- Cable protector plates
- Grommets and grommet strip
- Glands
- Busbars
- Neutral Link cable
- Terminal bars
- Cable clamps



Description	Box	Part Number
DESIGN 1.0 Door locking Kit	1	VCPK-L
MCB, RCCB & RCBO locking kit	1	VCPD-L
VCPD-L Padlock (2x Keys)	1	VCPDP-L
1 Module Busbar Black (MCB sized)	12	VCPBLM
Cable Protector plate (insulated)	5	VCPCPP
Cable Clamp	1	VCPDCC
Ferruled Neutral Link	1	VCPFN-L
Grommet Strip 300mm	1	VCPGS3

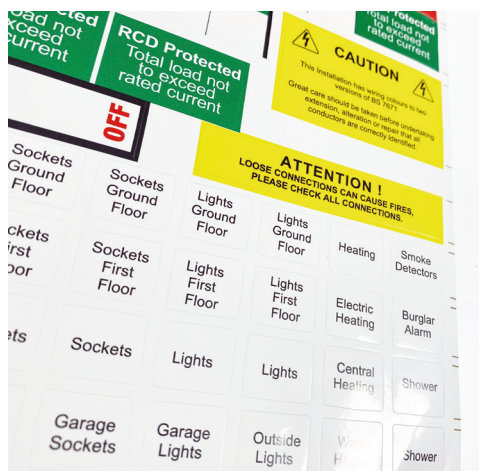


Consumer Units Accessories

Terminal Bars, Busbars & Label packs



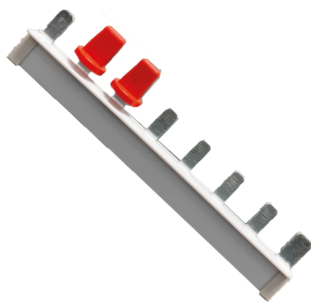
Verso® Terminal bars are available as accessories so that you can alter a pre-configured consumer unit to suit your requirements. This is exceptionally handy on a pre-existing installation. We carry a vast amount of busbar spares for the same reason.



Terminal Bars & Busbars

Features:

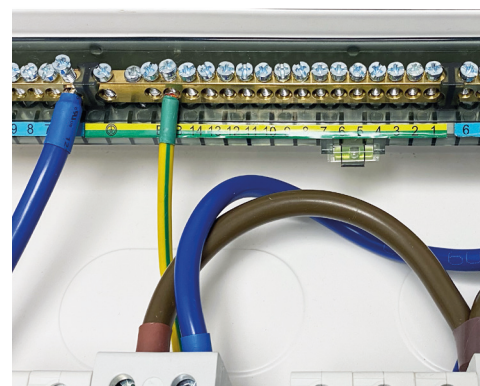
- Busbars from 8 modules to 22
- Terminal bars from 2 ways to 22 ways
- Two support clips included with every terminal bar
- Label packs also available



Description	Box	Part Number
Label Pack	1	VCPLB-P
8 Module Busbar	1	VCP08BB
12 Module Busbar	1	VCP12BB
16 Module Busbar	1	VCP16BB
22 Module Busbar	1	VCP22BB
2 Way Terminal Bar	1	VCPTB02
3 Way Terminal Bar	1	VCPTB03
4 Way Terminal Bar	1	VCPTB04
5 Way Terminal Bar	1	VCPTB05
6 Way Terminal Bar	1	VCPTB06
7 Way Terminal Bar	1	VCPTB07

Verso® Terminal bars are available as accessories so that you can alter a pre-configured consumer unit to suit your requirements. This is exceptionally handy on a pre-existing installation. We carry the following Terminal Bars spare to meet any requirement you may have.

Description	Box	Part Number
8 Way Terminal Bar	1	VCPTB08
9 Way Terminal Bar	1	VCPTB09
10 Way Terminal Bar	1	VCPTB10
11 Way Terminal Bar	1	VCPTB11
12 Way Terminal Bar	1	VCPTB12
13 Way Terminal Bar	1	VCPTB13
14 Way Terminal Bar	1	VCPTB14
15 Way Terminal Bar	1	VCPTB15
16 Way Terminal Bar	1	VCPTB16
17 Way Terminal Bar	1	VCPTB17
18 Way Terminal Bar	1	VCPTB18
19 Way Terminal Bar	1	VCPTB19
20 Way Terminal Bar	1	VCPTB20
21 Way Terminal Bar	1	VCPTB21
22 Way Terminal Bar	1	VCPTB22

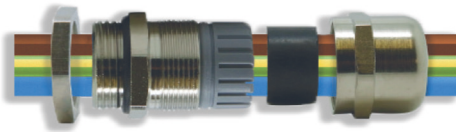


Verso® Circuit protection has an accompanying range of glands and grommets for tailing the Design 1.0 consumer unit and as convenient intumescent seals for the round entry knockouts found on the top and bottom of each consumer unit

Grommets & Glands

Features:

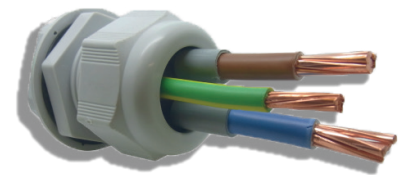
- Bagged Individually
- Compatible with Verso® Design 1.0 and others
- Grommets bagged in 10s
- Nylon & Brass Glands available



Description	Box	Part Number
Brass M32 2x16mm+1x16mm	1	VCPGB-T3
Brass M40 2x25mm+1x16mm	1	VCPGB-T4
Brass M20 1x1mm+1.5mm T&E	1	VCPGB-T11
Brass M20 1x2.5+4mm T&E	1	VCPGB-T12
Brass M20 1x6mm T&E	1	VCPGB-T13
Brass M25 2x2.5mm T&E	1	VCPGB-T14
Brass M32 1x10mm T&E	1	VCPGB-T15
Brass M40 1x16mm T&E	1	VCPGB-T16

Verso® Circuit protection has an accompanying range of glands and grommets for tailing the Design 1.0 consumer unit and as convenient intumescent seals for the round entry knockouts found on the top and bottom of each consumer unit

Description	Box	Part Number
Nylon M32 2x16mm+1x16mm	1	VCPGN-T1
Nylon M40 2x25mm+1x16mm	1	VCPGN-T4
Nylon M20 1x1mm+1.5mm T&E	1	VCPGN-T5
Nylon M20 1x2.5+4mm T&E	1	VCPGN-T6
Nylon M20 1x6mm T&E	1	VCPGN-T7
Nylon M25 2x2.5mm T&E	1	VCPGN-T8
Nylon M32 1x10mm T&E	1	VCPGN-T9
Nylon M40 1x16mm T&E	1	VCPGN-T10
IP65 Membrane grommets 20mm	10	VCPMG-20
IP65 Membrane grommets 25mm	10	VCPMG-25
IP65 Membrane grommets 32mm	10	VCPMG-32



Technical Support

Dimensions & Technical Information

Verso® consumer units and control devices have been made to the highest standards and technical specification. For all your technical requirements please see this section.



Technical Support

Surge Protection Device



The VCP1S2 is type 2 surge protective device in conformity with IEC/EN 61643-11 standards. It is of one module size with MOV and GDT in combination. This compact design is space saving and ideal for installation in consumer unit.



Type 2 Surge Protection Device

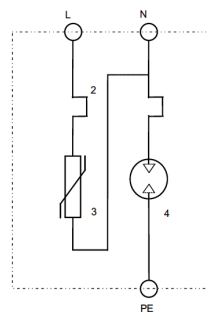
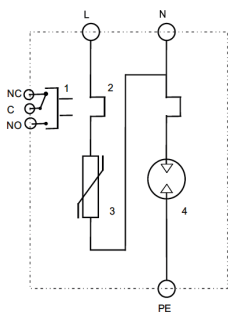
- Compact design with MOV and GDT in one module
- Pluggable module for easy replacement
- Din rail mounting for cabinet installation
- Optional remote signal for convenient checking
- Coloured indicator for operation status display
- Protective structure avoid wrong insertion of module

Wiring Diagrams

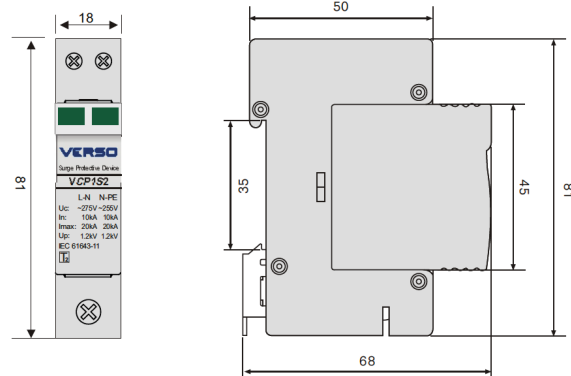
Dimensions

With remote signal

Without remote signal



1. Output contact, 2. Disconnecter, 3. MOV, 4. GDT



Technical data

Max. continuous operating voltage U_c	275V AC (L-N), 255V AC (N-PE)	
Max. discharge current $I_{max}(8/20\mu s)$	20kA	40kA
Nominal discharge current $I_n(8/20\mu s)$	10kA	20kA
Voltage protection level U_p	1.2kV	1.5kV
Combination method	1+1	
Short circuit current rating I_{sc}	500 A	
Status indicator	Green window: Functional / Red window: Failed	
Output contact	C-NC: conduction / C-NO: Open	
Wiring capacity	2.5mm ² (L-N), 4mm ² (N-PE)	
Degree of protection (IP code)	IP 20	
Power supply network	TN, TT, IT	
TOV [L-N] (U_r)	385V / 5 sec.	
Installation method	35mm DIN rail	
Ambient temperature	-40°C ~ + 80°C	
Ambient humidity	5%~95%	
Altitude	< 2000m	
Standard conformity	IEC61643-11:2011, EN61643-11:2012	

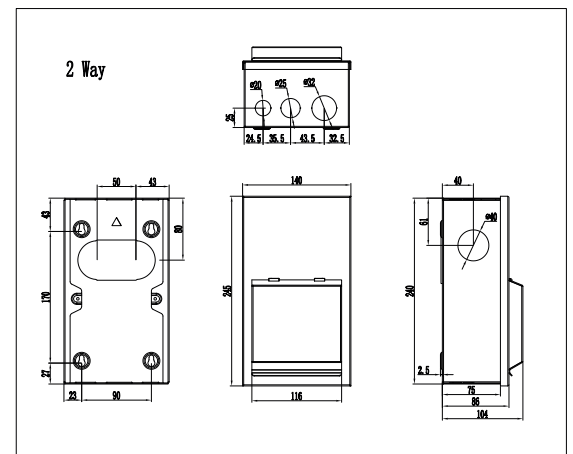
In this section you will find the dimensions for the Design 1.0 range.

Design drawings showing the exact measurements for each aspect of the consumer unit

Dimensions for

VCPGU

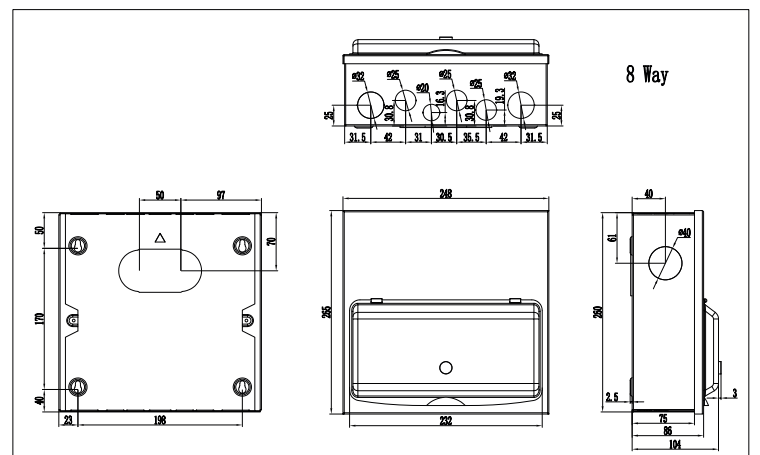
VCP4



Dimensions for

VCP8M

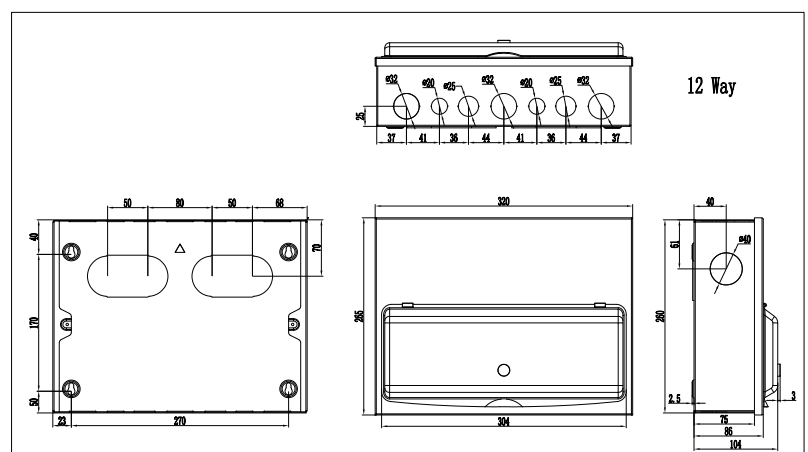
VCP8MX

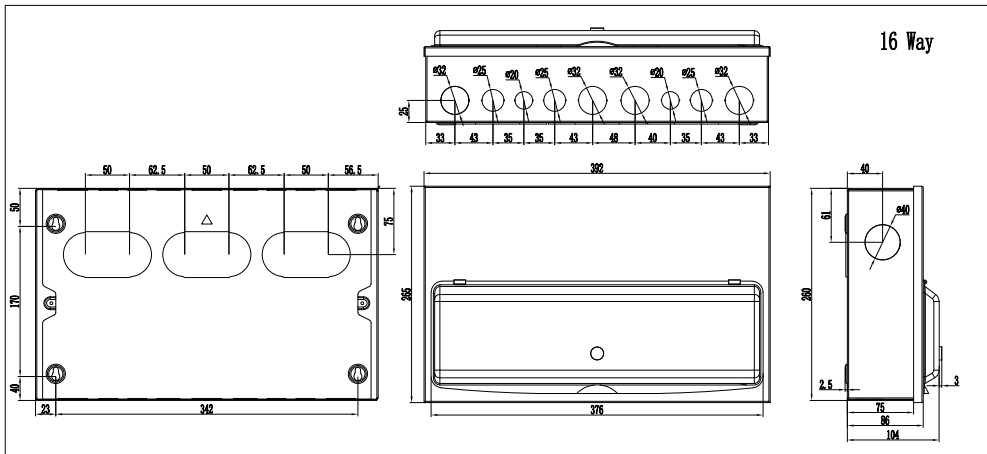


Dimensions for

VCP12M

VCP12MX





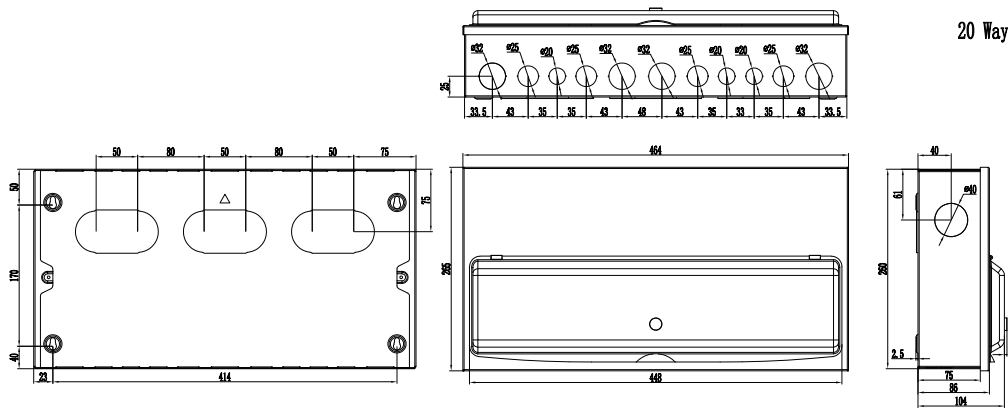
Dimensions for

VCP16M

VCP16MX

VCP10HI

VCP10HIX



Dimensions for

VCP20M

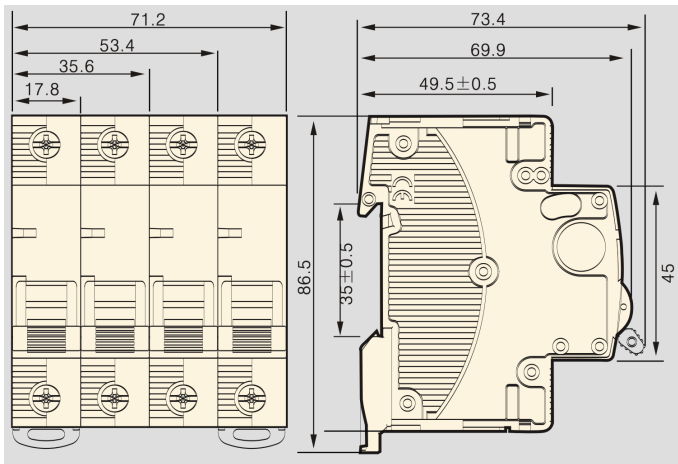
VCP20MX

VCP12HI

VCP12HIX

MCBs are the most common form of circuit protection device found in domestic installations.

This section details out the technical information and the functionality and conformity of the Verso® MCB range

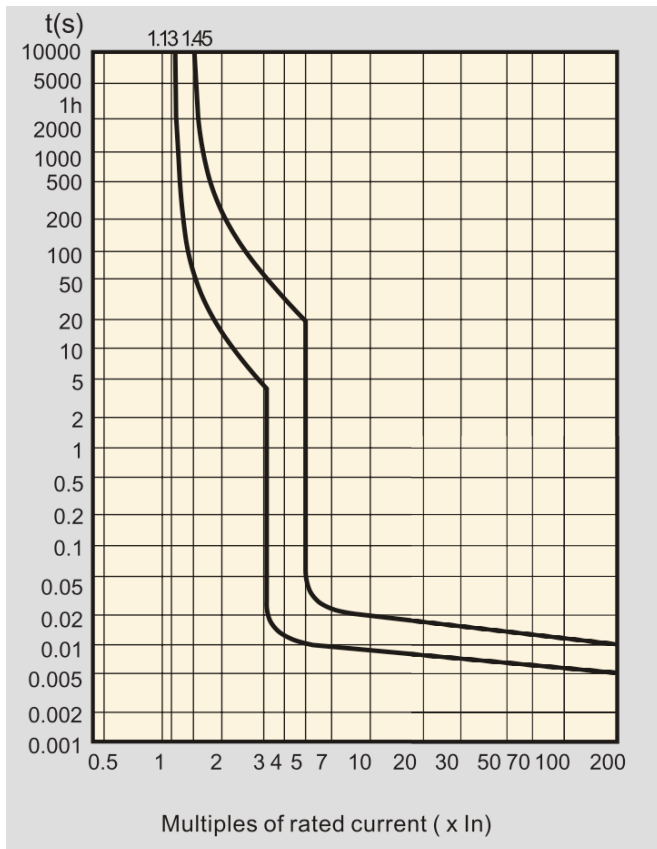


MCB Devices

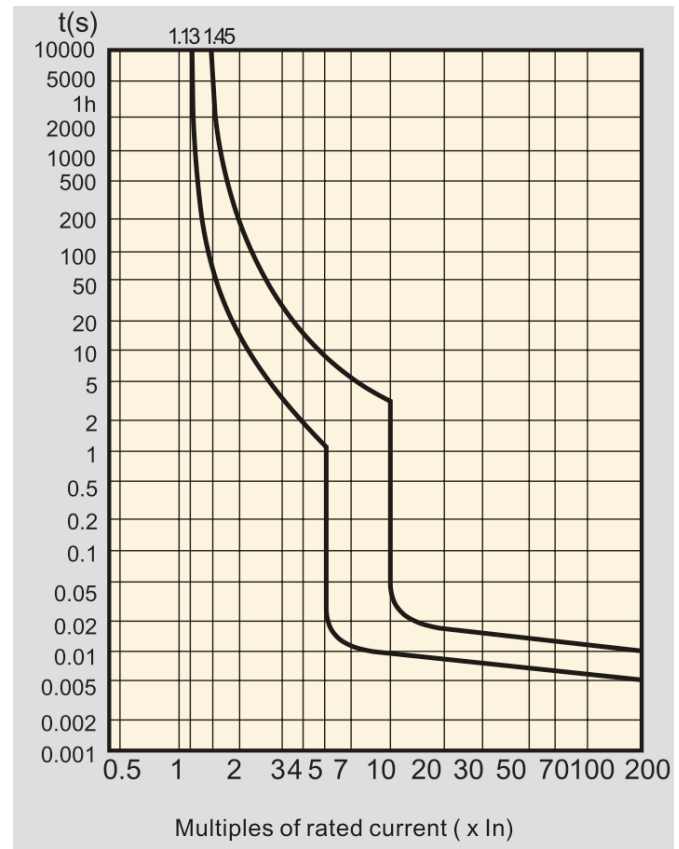
Features:

- No. of pole: 1P,2P,3P,4P
- Rated voltage: 240V/415V AC
- Rated current: 1-63A
- Rated frequency: 50/60Hz
- Tripping curve: B,C
- Rated insulation voltage: 415V
- Rated impulse withstand voltage: 4kV
- Rated short-circuit breaking capacity: 6000A
- Comply with IEC60898-1

MCB tripping curves B (AC)



MCB tripping curves C (AC)



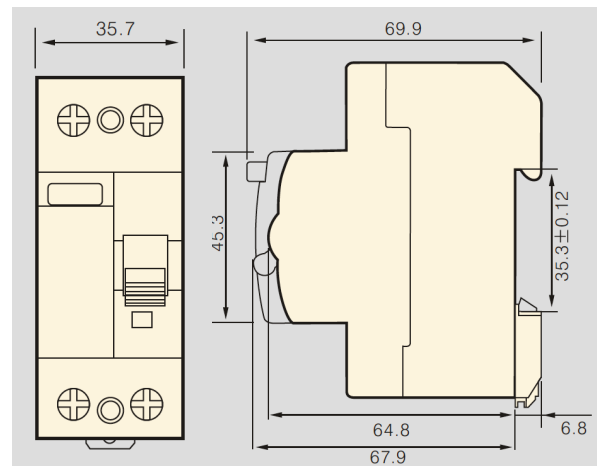
Verso® Type A RCCBs are double pole and designed for all domestic installation. Type A RCCBs are also perfectly suited for currents that may have or DC presence. The Verso® RCBOs are also Type A and have the same qualities.

All Switch Connectors are rated at 100A.

RCCB Devices

Features:

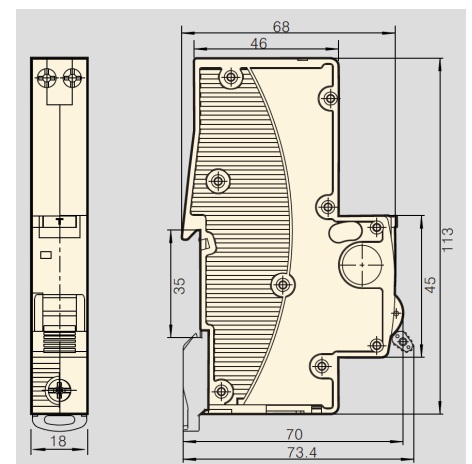
- No. of pole: 1P+N
- Rated voltage: 240V AC
- Rated current: 80-100A
- Rated frequency: 50/60Hz
- Rated short-circuit current: 10000A
- Operating characteristic: AC and A type
- Rated residual operating current: 30mA
- Comply with IEC/EN61008-1, IEC/EN61008-2-1



RCBO Devices

Features:

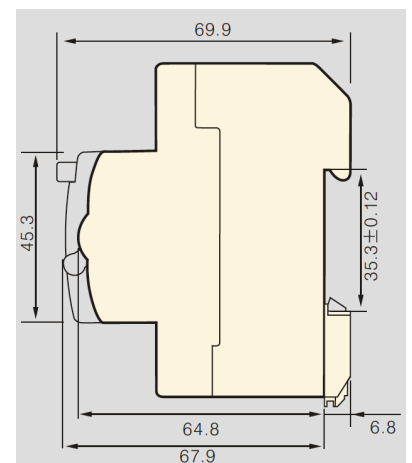
- No. of pole: 1P+N
- Rated voltage: 240V AC
- Rated current: 6-50A
- Rated frequency: 50/60Hz
- Tripping curve: B
- Rated short-circuit current: 6000A
- Operating characteristic: A type
- Rated residual operating current: 30mA
- Comply with IEC/EN61009-1



Switch Disconnecter

Features:

- No. of pole: 2P
- Rated voltage: 415V AC
- Rated current: 40-125A
- Rated frequency: 50/60Hz
- Rated insulation voltage: 500V
- Rated impulse withstand voltage: 6kV
- Utilization category: AC 22A
- Comply with IEC/EN 60947-1, IEC/EN 60947-3



Performance of RCDs & RCBOs

A residual current device (RCD) is the generic term for a device which automatically performs the functions of detection of the residual current, comparison of this value with the rated residual operating value and opening the protected circuit when the residual current exceeds this value.

For fixed domestic installations and similar applications we have two types:-

Residual current operated circuit breaker without integral overcurrent protection (RCBO) which should comply with the requirements of EN 61008.

Residual current operated circuit breaker without integral overcurrent protection (RCB) which should comply with the requirements of EN 61009.

Both RCBO's and RCB's are further divided into types depending on their operating function.

Type AC For which tripping is ensured for residual sinusoidal alternating currents, whether suddenly applied or slowly rising. Marked with the symbol

Type A For which tripping is ensured for residual sinusoidal alternating currents and residual pulsating direct currents, whether suddenly applied or slowly rising. Marked with the symbol

Type B For selectivity with line-to-earth. Marked with the symbol

RCBO's must be protected against short-circuits by means of circuit breakers or fuses.

RCBO's have their own built-in short-circuit protection, up to their rated M_{sc}.

The drawing opposite shows how a toroid is located around the line and neutral conductors to measure the magnetic fields created by the current flowing in these conductors. The sum of the magnetic fields caused by these currents (which takes into consideration both the magnitude and phase relationship of the currents) is detected by the toroid. In a normal healthy circuit, the vector sum of the current values added together will be zero. Current flowing to earth due to a line-earth fault or a return via the earth conductor and, regardless of load conditions will register as a fault. This current flow will give rise to a residual current (Im) which will be detected by the device.

It is most important that the line and neutral conductors are passed through the toroid. A common cause of nuisance operation is the failure to connect the neutral through the device.

RCBOs work just as well on three phase or three phase and neutral circuits but when the neutral is distributed it must pass through the toroid.

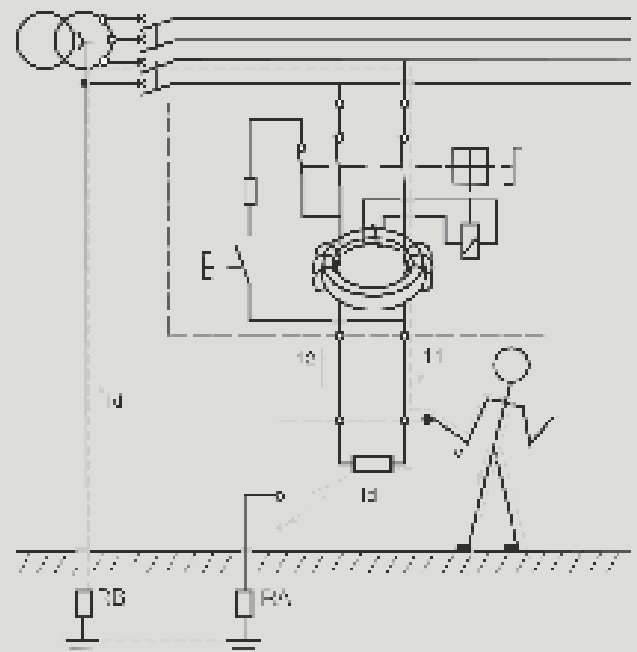
RCBOs are not suitable for use on DC systems and unearthed networks.

RCBOs can be installed in two ways:-

1. whole house protection
2. selective protection.

Whole house protection is provided typically by a consumer unit where the RCD's device serves as the main switch. Although very popular this suffers from a disadvantage; all circuits are disconnected in the event of a fault. Selective protection can be provided by re-connecting the RCD's with identified high risk circuits by adopting one or more of the following:-

Principle



Current flowing through toroid in healthy circuit
 $I_a = I_1, I_n = 0$

Current flowing through toroid in circuit with earth fault (IE)
 $I_a = I_1, I_n = -I_1$

Performance of circuit breakers

IEC Standards covering Low Voltage Circuit Breakers provide the user with a better assurance of quality and performance by taking into account the actual operating conditions of the breaker. New definitions and symbols have been introduced which should be committed to memory. Some of these most frequently used are:

- Unrated service voltage
- Unrated insulation voltage (> U_{nom})
- Unrated impulse withstand
- Rated short-circuit making capacity
- Rated short-circuit capacity
- Rated service short-circuit breaking capacity
- Rated ultimate short-circuit breaking capacity
- Rated residual operating current (often called residual sensitivity)
- Rated current = maximum value of current used for the temperature rise test
- Δt : trip delay of residual current devices

In addition IEC60847-2 sets out to provide a greater degree of safety to the un instructed users of circuit breakers. It is interesting to note that the description "miniature circuit breaker" or MCB is not used at all in the standard, but no doubt both manufacturers and users will soon start calling circuit breakers complying with IEC60847-2 miniature circuit breakers or MCBs for some time to come.

The scope of this standard is limited to screw break circuit breakers for operation at 50Hz or 60Hz, having a rated current not exceeding 125A and a rated short-circuit capacity not exceeding 25kA.

A rated service short-circuit breaking capacity I_{cs} is also included which is equal to the rated short-circuit capacity for nominal circuit capacity values up to and including 6kA, and 50% of I_{sc} for above 6kA with a minimum value of 7.5kA. As the circuit breakers covered by this standard are intended for household and similar uses I_{cs} is of academic interest only. The circuit breakers capacity of a MCB (and is the limiting component of the prospective current expressed by its I_{cs} value, which the MCB is designed to make carry for its opening time to break under specified conditions. It is shown on the MCB label in a rectangular box without the suffix "A" and is the value which is used for application purposes, (of short-circuit current at the pointer application). You will see from the curves that the inverse time / current characteristics which provides overload protection is the same on all three. This is because the International IEC60847-2 Standard requires the breaker to carry 1.05 times the rated current without tripping for at least one hour and when the test current is increased to 1.3 times the rated current, it must trip within one hour and again from cold. If the current is increased to 2 times the rated current the breaker must trip between 1 and 120 seconds. The inverse time delay characteristic of all MCBs claiming compliance with IEC60847-2 must operate within these limits.

The difference between the three types of characteristic curves designated "B", "C" and "D" concerns only the magnetic instantaneous trip which provides short-circuit protection.

- For type "B" the breaker must trip between the limits of 3 to 5 times rated current.
- For type "C" the breaker must trip between the limits of 3 to 12 times rated current and
- For type "D" the breaker must trip between the limits of 9.6 to 14.4 times rated current.

Often manufacturers publish their MCB tripping characteristics showing the limits set by the standard and guarantee that any breaker that you purchase will operate within those limits. So great care should be taken when working with characteristic curves showing lower and higher limits - on no account should you take a mean point for application design purposes.

For cable protection applications you should take the maximum tripping time and some manufacturers publish single line characteristics curves which show the maximum tripping time. If the design problem is nuisance tripping then the minimum tripping time should be used and for desk top coordination studies, both lower and upper limits have to be taken into account.

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