



# B60 PRODUCT GUIDE



- B60 Domestic VO Unit (Retrofit)
- B60-PVM Domestic VO Unit (New build and new PV systems)
- ROM RCBOs
- RO2 RCBOs
- RO2NE RCBO
- DEHN

## Voltage Optimisation overview

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**Voltage Optimisation is a 'foundation efficiency technology.' That is to say it compliments or enhances the performance of renewable technologies allowing them to integrate more harmoniously and effectively into your projects.**

**It needs to be understood that a Voltage Optimiser does not directly make an energy saving - it merely creates a voltage that derives a saving by providing a voltage closer to the designed parameters of your appliances.**

**The result is an energy saving but it is the appliance that is consuming less power and not some power 'electrickery' going on at the optimiser end.**

### WHY DO WE NEED TO OPTIMISE SUPPLIES?

Because supplied grid voltages are higher than the appliances optimal voltage requirement. This results in:

- The operating life of appliances being reduced dramatically
- An increase in the power they consume
- Electrical bills and carbon footprint being unnecessarily raised

### WHO SHOULD OPTIMISE THEIR SUPPLY VOLTAGES?

The straight forward approach to this is anyone with a voltage that persists at 234V or higher which accounts for about 90% of homes in the UK. An electrician can check this for you or you can buy a simple plug in logger for less than £20.

### WHAT SAVINGS CAN BE EXPECTED?

In terms of reduction in demand typically between 6 & 14% of billing. Voltage Optimisation does not itself save kWh. It creates a condition for savings to be achieved.

For connected PV systems the B60 if installed with the PV+ unit prevents over-voltage cutout during peak generation periods. By doing this, increases of up-to 25% in generation are achievable over the year.

### DID YOU KNOW?

We each have around £10,000 of appliances in our homes. Many of our appliances operational lives could be shortened by as much as 55% as a consequence of over voltage.

The output from Solar Panels goes into the home or back into the grid at approximately 5V higher than the grid supply.

In areas where there is a high proliferation of solar - voltages have been recorded in the UK as high as 270V!

A continuous development program ensures a high level of innovation in all our products.

CPN electrical circuit protection components and products are designed in the UK.

As an ISO9001 certified supplier with the strictest quality assurance systems, we make extensive efforts to ensure that all our products meet or exceed the required quality standards.



## The benefits of Voltage Optimisation

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Reduces household demand by restricting voltage to a voltage closer to the appliances optimal design parameter

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Reduces electricity bills by up to 15%

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Reduces carbon footprint

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Extends the useful operating life of household appliances

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Reduces landfill by preserving appliances

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Enhances overall ROI on solar PV Systems and Air Sourced Heat Pumps

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It is non-invasive and requires no behavioural change to display results

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It can be installed in under 1 hour and doesn't require switching providers

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In most cases it will pay back the end user within 5 years

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Increases household safety as prolonged overvoltage can cause appliances to overheat or even catch fire

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Compliments renewable technology in providing on site governance of supplied household voltages from inverters back out to household load

**5 YEAR**  
warranty

## B60 Domestic Voltage Optimisation Unit

The single phase B60 Voltage Optimisation unit is designed for use in domestic and light commercial / retail applications.

Installed between the electricity meter and main consumer unit, the B60 offers 18 volt subtractive performance.



The B60 is a single phase Voltage Optimisation unit. The unit reduces the incoming supply voltage by 18V (i.e.: a 240V supply would be reduced to 222V).

It is designed to be connected in series with the incoming supply installed between the main electricity meter for the dwelling, and the consumer unit.

The B60 has short circuit, overload and thermal protection built in.

Rated at 14kW, the unit is suitable for the majority of domestic and light commercial / retail installations.

### FEATURES

- The most compact VO unit on the market
- 5 year warranty
- Capable of handling 14.5kW continuously (most competitor units are 9kW rated)
- Low cost with low footprint
- Extremely efficient
- Reliable and non-intrusive
- Built by electricians for electricians

### SPECIFICATION

#### Input (Volts)

Nominal input voltage 235 - 253V, 50Hz,  
Single Phase AC

#### Output (Volts)

Nominal input voltage less 18V

#### Max Load

14kW

#### Dimensions

310mm x 235mm x 100mm

#### Weight

Approximately 10.0kgs

#### Operating Temperature

-5°C to +40°C

#### Terminal Capacity

Incoming Live = 35.0mm<sup>2</sup>

Outgoing Live = 35.0mm<sup>2</sup>

Incoming Neutral = 35.0mm<sup>2</sup>

Outgoing Neutral = 35.0mm<sup>2</sup>

#### MCB

63 Amp 6kA Type B to BS EN 60898

#### Enclosure

Mild Steel Powder Coated

#### Ingress Protection

IP20

#### Cable Entry Facility

Bottom - 2 x 32mm

# B60-PVM Domestic Voltage Optimisation Unit with PV connections & MID certified feed in tariff meter

The single phase B60-PVM Voltage Optimisation unit is designed to work with PV installations and for use in domestic and light commercial / retail applications.

Installed between the electricity meter and main consumer unit, the B60-PVM offers 18 volt subtractive performance.



The B60-PVM is a single phase Optimisation unit designed to work with PV installations.

The unit reduces the incoming supply voltage by 18V (i.e.: a 240V supply would be reduced to 222V). It is designed to be connected in series with the incoming supply installed between the main electricity meter for the dwelling, and the consumer unit.

The B60-PVM is equipped with short circuit, overload and thermal protection.

Rated at 14kW, the unit is suitable for the majority of domestic and light commercial / retail installations.

The unit has a dedicated PV supply RCBO and a MID meter.

## FEATURES

- The B60 PVM is the only unit currently in production that is capable of connecting directly to Solar PV with a built-in FIT/MID approved generation meter
- All this reduces installation time significantly and removes the need for a separate meter and a one-way consumer unit
- It comes with a 5 Year Warranty and will reduce paybacks on Solar systems typically by 18-24 months and protects all of your gadgets from the effects of over voltage

## SPECIFICATION

### Input (Volts)

Nominal input voltage 235 - 253V, 50Hz, Single Phase AC

### Output (Volts)

Nominal input voltage less 18V

### Max Load

14kW

### Dimensions

364mm x 235mm x 100mm

### Weight

Approximately 10.0 kgs

### Operating Temperature

-5°C to +40°C

### Terminal Capacity

Incoming Live = 35.0mm<sup>2</sup>

Outgoing Live = 35.0mm<sup>2</sup>

Incoming Neutral = 35.0mm<sup>2</sup>

Outgoing Neutral = 35.0mm<sup>2</sup>

### MCB

63 Amp 6kA Type B to BS EN 60898

### RCBO

16 Amp Type B to BS EN 61009

### Enclosure

Mild Steel Powder Coated

### Ingress Protection

IP20

### Cable Entry Facility

Bottom - 2 x 32mm, 1 x 20mm Diameter

### Meter

MID Certified

# ROM RCBO Residual Current Circuit Breaker with Over Current Protection

**Ideal for domestic applications to give you circuit integrity without using an RCD that offers earth fault protection to other circuits.**

**The unique benefit is that it is MCB sized saving you a great deal of space inside the consumer unit, adapted busbar supplied.**



## FEATURES

- SP MCB Sized RCBO
- 6KA Breaking Capacity
- Ratings 6amp to 32amp
- Earth Leakage Rating 30ma
- B & C Curve Available
- Conforms to BSEN1009



B Curve Part No.	B Curve Description	C Curve Part No.	C Curve Description
ROM106B/030	1 Pole 6A B Curve 30mA 6KA RCBO	ROM106C/030	1 Pole 6A C Curve 30mA 6KA RCBO
ROM110B/030	1 Pole 10A B Curve 30mA 6KA RCBO	ROM110C/030	1 Pole 10A C Curve 30mA 6KA RCBO
ROM116B/030	1 Pole 16A B Curve 30mA 6KA RCBO	ROM116C/030	1 Pole 16A C Curve 30mA 6KA RCBO
ROM120B/030	1 Pole 20A B Curve 30mA 6KA RCBO	ROM120C/030	1 Pole 20A C Curve 30mA 6KA RCBO
ROM125B/030	1 Pole 25A B Curve 30mA 6KA RCBO	ROM125C/030	1 Pole 25A C Curve 30mA 6KA RCBO
ROM132B/030	1 Pole 32A B Curve 30mA 6KA RCBO	ROM132C/030	1 Pole 32A C Curve 30mA 6KA RCBO

# RO2NE RCBO Residual Current Circuit Breaker with Over Current Protection



**Ideal for OEM applications including Caravan Park Hook Up pedestals that require Live and Neutral disconnection.**

**The unique benefit is that its MCB sized saving you a great deal of space.**

# RO2 RCBO Residual Current Circuit Breaker with Over Current Protection

**Ideal for OEM applications including Caravan Park Hook Up pedestals that require Live and Neutral disconnection, standard 2 module width.**



## FEATURES

- 2 Pole Electromagnetic RCBO
- 6KA Breaking Capacity
- Ratings 6amp to 40amp
- Earth Leakage Rating 30ma
- B & C Curve Available
- L & N Disconnection
- Conforms to BSEN1009

B Curve Part No.	B Curve Description	C Curve Part No.	C Curve Description
RO206B/030	2 Pole 6A B Curve 30mA RCBO	RO206C/030	2 Pole 6A C Curve 30mA RCBO
RO210B/030	2 Pole 10A B Curve 30mA RCBO	RO210C/030	2 Pole 10A C Curve 30mA RCBO
RO216B/030	2 Pole 16A B Curve 30mA RCBO	RO216C/030	2 Pole 16A C Curve 30mA RCBO
RO220B/030	2 Pole 20A B Curve 30mA RCBO	RO220C/030	2 Pole 20A C Curve 30mA RCBO
RO225B/030	2 Pole 25A B Curve 30mA RCBO	RO225C/030	2 Pole 25A C Curve 30mA RCBO
RO232B/030	2 Pole 32A B Curve 30mA RCBO	RO232C/030	2 Pole 32A C Curve 30mA RCBO
RO240B/030	2 Pole 40A B Curve 30mA RCBO	RO240C/030	2 Pole 40A C Curve 30mA RCBO

## FEATURES

- SP MCB Sized RCBO
- 6KA Breaking Capacity
- Ratings 6amp to 32amp
- Earth Leakage Rating 30ma
- Mid Trip Toggle
- C Curve
- L & N Disconnection
- Conforms to BSEN1009

Part No.	Description
RO2NE206C/030	2 Pole NE 6A C 1 Module RCBO
RO2NE210C/030	2 Pole NE 10A C 1 Module RCBO
RO2NE216C/030	2 Pole NE 16A C 1 Module RCBO
RO2NE225C/030	2 Pole NE 25A C 1 Module RCBO
RO2NE232C/030	2 Pole NE 32A C 1 Module RCBO

# DEHN 900450 / DEHN 900455



These new type 2 surge devices meet all the requirements of BS7671 amendments in section 534. With a 5kA surge current rating and a lower than 1.5kV voltage protection level they will protect sensitive installed equipment.

These units are DIN mounted, show the status in the indicator window and are slimmer than before.

They are also fully coordinated with the type 1 and type 3 surge devices within the range.



## DEHN 900450 SPECIFICATION

### SPD according to EN 61643-11

Type 2

### Power Supply System

Single-phase TT / TN system

### Input (Volts)

230 / 400V (50 / 60Hz)

### Dimensions

18mm x 85mm x 58mm

### Maximum Mains-side Over Current Protection

MCB C 63 A

### Operating Temperature

-40°C to +80°C

### Operating State

Green / Red

### Number of Ports

1

### Mounting

35mm DIN rails according to EN 60715

### Enclosure

Thermoplastic, grey, UL 94 V-0

### Ingress Protection

IP20

### Capacity

1 module(s), DIN 43880

### Installation

Indoors

## DEHN 900455 SPECIFICATION

### SPD according to EN 61643-11

Type 2

### Power Supply System

Three-phase TT / TN system

### Input (Volts)

230 / 400V (50 / 60Hz)

### Dimensions

36mm x 85mm x 58mm

### Maximum Mains-side Over Current Protection

MCB C 63 A

### Operating Temperature

-40°C to +80°C

### Operating State

Green / Red

### Number of Ports

1

### Mounting

35mm DIN rails according to EN 60715

### Enclosure

Thermoplastic, grey, UL 94 V-0

### Ingress Protection

IP20

### Capacity

2 module(s), DIN 43880

### Installation

Indoors