VPhase VX1
Technical Specification

The VPhase VX1 unit is a Smart Voltage Management device designed for home and small business use. The VX1 reduces and regulates the supply voltage on connected circuits to a set level of 220V, a level where most devices operate more efficiently.

Connection and Protection

VPhase VX1 is designed to be connected using 10mm^2 twin and earth cable. The input to the VX1 must be protected by a suitable rated MCB. A 50A Type-B MCB is recommended. Higher rated MCBs can be used provided a suitable cable is selected for the VX1 connection and the maximum load conditions for the VX1 are observed.

There are no user operational controls. VX1 starts automatically when the electricity supply is connected and restarts automatically following any supply interruption. The device is maintenance free. There are no user serviceable parts within the VX1.

Power rating of the VPhase VX1

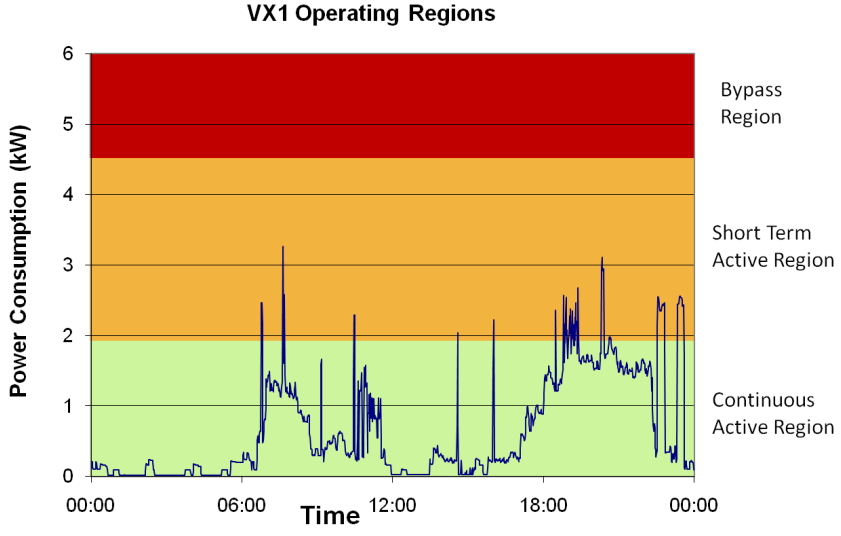
VX1 is thermally controlled. During periods of high continuous load VX1 will switch into bypass mode and voltage regulation will cease. Voltage regulation will restart automatically when the load current reduces.

Maximum current in bypass mode	80A
Maximum current in active mode	20A

The chart below shows the total amount of power consumed in a typical house over a 24 hour period. The total power consumed was 11.735kWh, equivalent to an annual electricity bill of £513 at 12p per unit.

Also shown on the chart are the VX1 operating regions. When household electricity consumption is within the "continuous active region" the VX1 will always regulate voltage. When the consumption exceeds this rating then the VX1 will regulate voltage for short durations in the "short term active region". The exact duration of operation depends upon many factors including ambient conditions, previous load conditions and the level of power consumption. Typically the VX1 can regulate for many hours at 2.5kW but only for a few minutes at 4kW.

If the high electricity consumption is sustained in the short term active region or a very high level of electricity is consumed within the house then the VX1 will enter bypass mode. In bypass mode the VX1 will stop regulating voltage until the electricity consumption has fallen; voltage will be delivered to circuits at the same voltage as delivered by the utility company.

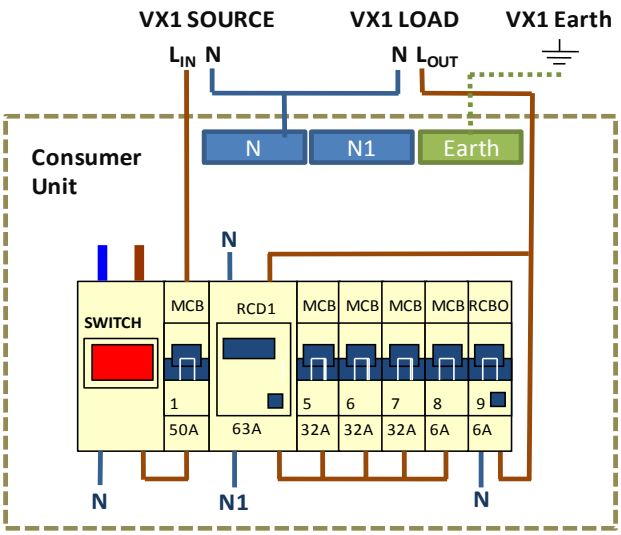


When installing the VX1 care should be taken to ensure that high power electric heating circuits are not connected to the VX1. Full installation instructions are available from VPhase and can be downloaded from **www.vphase.com**.

VX1 can be used for low power commercial applications. It is recommended to fit the VX1 to circuits where the average load during the operational hours of the circuit does not exceed 2kW.

All guidelines provided within the VX1 installation instructions must also be followed.

Typical connection to a consumer unit



Shown is a typical connection to a consumer unit with the following circuits:

- Three socket ring circuits (32A)
- Two lighting circuits (6A)

The inclusion of separate RCBO for one lighting circuit ensures segregation between lighting circuits. Many other consumer unit configurations are possible.

The VX1 should be installed by a competent and qualified electrician. The VX1 must be fitted in full compliance with the 17th Edition Wiring Regulations.

It is essential that the electricity supply is isolated before removing the cover of either VX1 or the consumer unit.

Example circuits for VX1 to supply

- Ring circuit socket outlets
- Lighting
- Kitchen sockets
- Utility room sockets
- Garage/out-house sockets
- Gas boiler supplies

Circuits that should not be supplied by VX1

- Electric shower
- Immersion heater (if on independent circuit)
- Cooker (if on independent circuit)
- Dedicated heating circuits (e.g. storage heaters)

Electrical Specifications

VPhase VX1 input:	Nominal input voltage 230V(+/-10%) Maximum input voltage 264V
VPhase VX1 Output - Active Mode:	Single phase 220V (+/-1.5%) (max of 27V below supply voltage)
VPhase VX1 Output - Bypass Mode:	Input directly connected to output.
VPhase VX1 maximum current:	80A bypass mode 20A short term active mode 8A continuous active mode (typical)

User Indications:

Green Light:	System operational
Red Light:	System fault (flashes at start-up)

Physical Specifications:

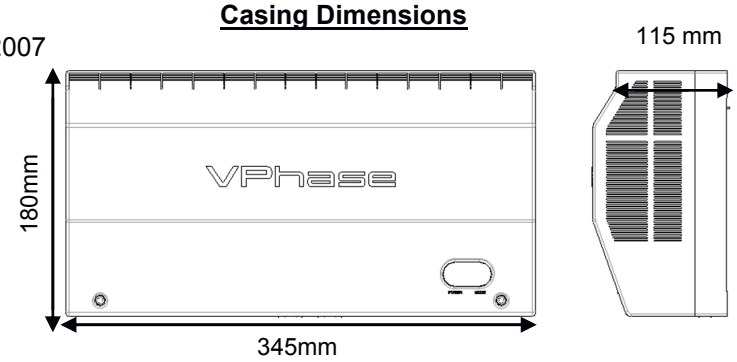
Size:	345mmX180mmX115mm (LxWxD)
Weight:	4.3kg
Operating temperature range:	-5degC to 40degC

Qualifications:

Safety/EMC	EN 60730-1:2000 EN 61000-6-1:2007 EN 55022:2006+A1:2007

Product development is continuous and VPhase plc reserves the right to make alterations to specification and manufacture without notice.

Casing Dimensions



VPhase
An Energetix Group Company

T. 0845 003 8235 E. info@vphase.com W. www.vphase.com

VPhase plc
Capenhurst Technology Park. Chester. CH1 6EH