PowerGuard documents

Brochures, specifications, installation manuals, and troubleshooting guides.

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Brochures

PowerOptimal PowerGuard Web Brochure

Product Specifications

PowerOptimal PowerGuard CPM-3PC Mk2 specification

INTRODUCING THE PowerGuard® CPM-3PC Mk 2



The PowerGuard CPM-3PC MK2 is a maximum demand controller designed to control loads where either not enough power is available or where peak demand (kVA) needs to be reduced in order to save on electricity bills.

This single enclosure houses power supplies, communication modem, display, control selection as well as all the required external connector terminals.

SPECIFICATIONS

INPUT

Load information is accessed from standard current transformer outputs covering the point of entry serving the area to be controlled.

CONTROL

Current or kVA-based control can be selected to regulate demand. For customers with insufficient supply, current based phase selective sheds ensure that only the transgressing overloaded phase responds to shed signals. The number of shed signals per half hour are recorded to assist with fine-tuning shed levels while line current graphs aid with phase balancing.

PROGRAMMING

All the variables associated with creating a shed instruction can be set up either on rotary numerical switches or slide selector switches. This enables all shed criteria to be viewed without the need for laptops or specialised software.

DISPLAY

An on board LCD unit displays the real time line currents and total kVA. Light emitting diodes indicate processor heartbeat; phase conscious shed requests, line quality of shed signals and total shed demand.

SPECIFICATIONS

- Current transformer ratio adjustable from 1 to 9 999 Amps. Secondary output is 1 Amp into 1 Ohm burden for full scale

- Star, delta LV and MV catered for
- Supply from standard 3-phase 230 Volt, < 20 Watts
- Shed level is adjustable from 1 to 9 999 Amps or kVA
- Two closing contact inputs are available to reduce ‘time of use’ sensitive accounts from 1 to 99% of selected shed level
- Single contact closure for total progressive shed/restoration of all loads, e.g. air conditioners after hours
- Shed interval delay adjustable from 4 seconds to 99 minutes
- Switch selectable shed criteria for Amps or kVA
- Two user specific selections for custom software
- 1 to 31 kVA backlash adjustment
- Screwdriver adjustable current simulation with phase selection for testing
- Remote control via cellular networks
- Clear cover to observe load, total kVA, shed activity and shed criteria
- Housing dimensions are 380H x 280W x 135H mm, Weight is 3.8 Kg.
- On board GPRS modem for remote internet based monitoring of phase currents, kVA, shed request profile, shed active report and average phase voltage
- Conforms to IEC/SANS 60669

PowerOptimal PowerGuard CPM-SDB specification

INTRODUCING THE PowerGuard® CPM-SDB



PowerGuard CPM-SDB doubles as a shed control signal amplifier or shed signal restorer when coupled to a PowerGuard CPM-XC10 transceiver.

As an amplifier, the unit can enhance coverage of a PowerGuard load management installation by up to a further 400 receiver points per amplifier.

Connected to the PowerGuard CPM-XC10 transceiver, the unit will restore and echo the original shed signal to drive up to 400 PowerGuard shed receivers.

SPECIFICATIONS

SPECIFICATIONS

- Power: 230 Volts AC
- Consumption: < 30 Watts
- Dimensions: 200 x 120 x 75 mm less aerial
- Weight: 1 kg

PowerOptimal PowerGuard CPM-XC10 specification

INTRODUCING THE PowerGuard® CPM-XC10



The PowerGuard CPM-XC10 is a dedicated transceiver designed to facilitate wireless communication between PowerGuard CPM-3PC MK2 and any PowerGuard receiver network.

Together with PowerGuard CPM-SDB, the CPM-XC10 can provide communication between the standard PowerGuard control signal from point of entry across roads, paving or between buildings where cabling is not feasible.

The unit can be used as a transmitter, repeater or receiver. Careful design ensures avoidance of RF signal collision. Up to four channels on each of the four selectable frequencies allows for multiple systems in close proximity to operate independently.

SPECIFICATIONS

SPECIFICATIONS

- Power: 230Volts AC
- Consumption: < 3 Watts
- Transmission frequency: 866 MHz
- Output power: 10 milliwatt (mW)
- Range: Up to 200 m line of sight
- Dimensions: 200 x 120 x 75 mm less aerial
- Weight: < 1 kg

Product Specifications

PowerOptimal PowerGuard CPM16-30 specification

INTRODUCING THE PowerGuard® CPM16-30



The PowerGuard CPM16-30 is a 16-channel demand regulator with 30 Amp switching capacity per channel designed to work with the PowerGuard CPM-3PC or CPM-3PC Mk2 controllers. The unit was developed primarily to reduce costs on demand sensitive electricity bills but can also be installed for customers who do not have enough power.

This certified unit is designed and manufactured in South Africa.

SPECIFICATIONS

INPUT

Shed requests are received via a polarity insensitive low voltage short circuit proof signal generated by the PowerGuard CPM-3PC or CPM-3PC Mk 2.

CONTROL & PROGRAMMING

Various algorithms can be selected to optimise the control of air conditioners, geysers and boiler elements thereby making intervention seamless in most installations.

Progressive load restoration assists with ‘’cold pick up’’ situations following supply interruptions. All control criteria are switch programmable in order to avoid the need for laptops or specialised software.

DISPLAY

LEDs indicate shed status as well as processor heartbeat, control signal presence, over-voltage and supply activity.

SPECIFICATIONS

- An over-voltage feature protects all affected loads by disconnecting them during damaging high voltage situations.
- Current transformer ratio adjustable from 1 to 9 999 Amps. Secondary output is 1 Amp into 1 Ohm burden for full scale
- Standard single phase 230 Volt AC supply, <20 Watts
- Control input is opto-coupled to eliminate ground loops and elevated neutral spreads during faults
- Clear cover to observe shed status, control activity and programmed shed criteria

- Output is potential-free 30 Amp relay contacts
- Housing dimensions are 380L x 280W x 135H mm
- Weight is 3.5 kg
- Conforms to SANS/IEC 60669

PowerOptimal PowerGuard CPM20-1W specification



INTRODUCING THE PowerGuard® CPM20-1W

PowerGuard's CPM20-1 was developed as a modular cost effective 20 Amp load shed receiver to implement savings on demand sensitive bills as well as for installations that do not have enough power. The unit is particularly suited to control individual geysers in complexes, hotels and lodges.

This certified unit is designed and manufactured in South Africa.

SPECIFICATIONS

INPUT

Shed requests are received via a polarity insensitive low voltage short circuit proof signal generated by the PowerGuard CPM-3PC or CPM-3PC Mk 2.

CONTROL & PROGRAMMING

Progressive load restoration assists with ''cold pick up'' situations following supply interruptions. Control criteria are switch programmable in order to avoid the need for laptops or specialised software.

DISPLAY

LEDs indicate shed status as well as processor heart-beat, control signal presence and condition of incoming supply for easy monitoring.

SPECIFICATIONS

- An over- and under voltage feature protects all affected loads by disconnecting them during potentially harmful voltage situations.
- Standard single phase 230 Volt AC supply, <5 Watts
- Control input is opto-coupled to eliminate ground loops and elevated neutral spreads during faults
- Port hole in cover to observe shed status as well as control activity.
- Output is potential-free 20 Amp relay contact
- Housing dimensions are 160L x 80W x 55H mm
- Weight 0.6 Kg
- Conforms to SANS/IEC 60669

PowerOptimal PowerGuard CPM30-1W specification

INTRODUCING THE PowerGuard® CPM30-1W



The PowerGuard CPM30-1W is the result of on-going development with experience gained from our popular CPM20-1W unit which was developed primarily to reduce costs on demand sensitive electricity bills as well as for customers who do not have enough power. This unit features extended functionality and switching capacity as well as upgraded software algorithms to realise the maximum benefits associated with air conditioner load control.

This certified unit is designed and manufactured in South Africa.

SPECIFICATIONS

INPUT

Shed requests are received via a polarity insensitive low voltage short circuit proof signal generated by the PowerGuard CPM-3PC or CPM-3PC Mk 2.

CONTROL & PROGRAMMING

Various criteria can be selected to optimise the control of air conditioners, geyser and boiler elements thereby making intervention seamless in most installations. Progressive load restoration assists with ‘’cold pick up’’ situations following supply interruptions. All control criteria are switch programmable in order to avoid the need for laptops or specialised software.

DISPLAY

LEDs indicate shed status as well as processor heart-beat, control signal presence and condition of incoming supply.

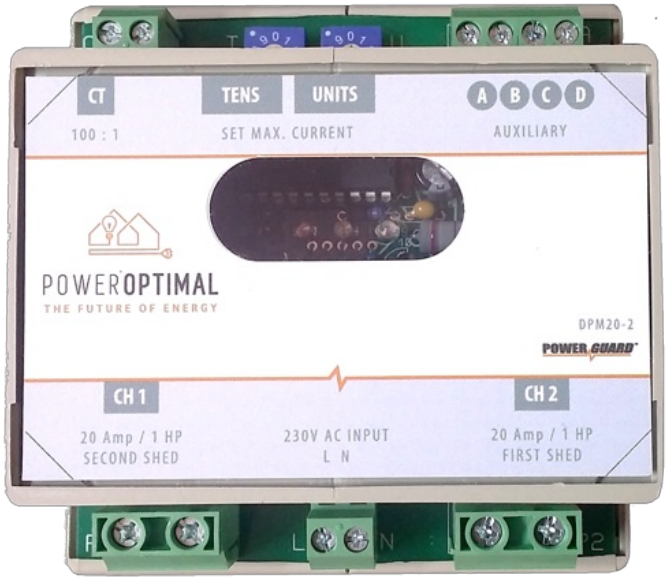
SPECIFICATIONS

- An over- or under voltage feature protects all affected loads by disconnecting them during potentially harmful voltage situations.
- Standard single phase 230 Volt AC supply, <5 Watts
- Control input is opto-coupled to eliminate ground loops and elevated neutral spreads during faults

- Port hole in cover to observe shed status as well as control activity.
- Output is potential-free 30 Amp relay change-over contacts
- Housing dimensions are 200L x 120W x 76H mm
- Weight 0.8 Kg
- Conforms to SANS/IEC 60669

PowerOptimal PowerGuard DPM20-2 specification

INTRODUCING THE PowerGuard® DPM20-2



The two channel PowerGuard DPM20-2 demand manager caters for the average middle-class underpowered home with one or two geysers, pool pump and one or two air conditioners.

This installation is typically powered from a single phase 230 Volt AC @ 63 Amp supply.

This unit is designed and manufactured in South Africa.

SPECIFICATIONS

INPUT

Power usage is measured by a current transformer (included) on the main incoming line.

CONTROL & PROGRAMMING

PowerGuard will manage two independent loads according to a fixed hierarchy in order to avoid over-current trips during high electrical usage. External utility override input.

DISPLAY

LCD display shows total current drawn as well as active switching elements.

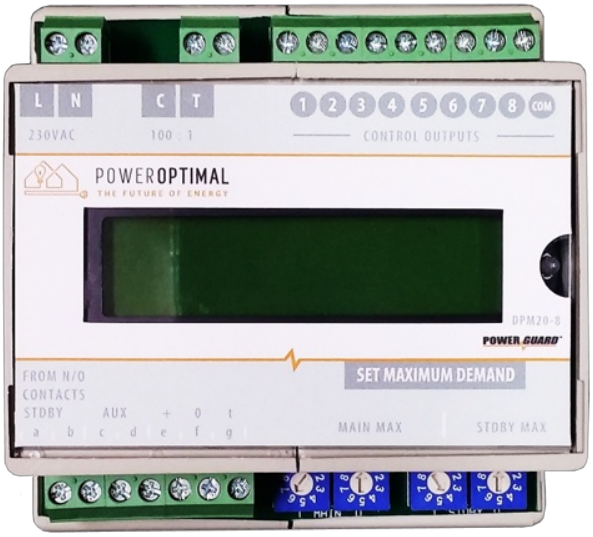
SPECIFICATIONS

- 2 x 20 Amp control contacts
- Operating voltage: 230Volts AC
- Power consumption: <3Watt
- Operating range: 180 to 280 Volts ac
- Maximum input voltage: 420 Volt ac indefinitely
- 6 kV impulse test
- Conforms to SANS 10142
- Controlled loads will be disconnected outside operating voltage range for protection
- DIN rail mounted
- Screwdriver current setting from 1 to 99 Amps

Product Specifications

PowerOptimal PowerGuard DPM20-8 specification

INTRODUCING THE PowerGuard® DPM20-8



The eight channel PowerGuard DPM20-8 caters for larger homes, single or three phase, that suffer electrical trips because of marginal supply. Dual maximum current settings allow demand control of utility as well as standby (generator or UPS) power.

This unit is designed and manufactured in South Africa.

SPECIFICATIONS

INPUT

Power usage is measured by a current transformer (included) on the main incoming line.

CONTROL & PROGRAMMING

The eight switch elements (PowerGuard RL20-1) are modular and are controlled from the control unit (DPM20-8) via low voltage signals. Various hierarchies are available for loads with different requirements such as geysers and air conditioners. External input for utility override.

DISPLAY

LCD display shows total current drawn as well as active switching elements.

SPECIFICATIONS

- One to eight x 20 Amp control contacts
- Operating voltage: 230 Volts AC
- Power consumption: <5 Watt to < 15 Watt, depending on number of channels
- Operating range: 180 to 280 Volts AC
- Maximum input voltage: 420 Volt AC, indefinitely
- 6 kV impulse test
- Conforms to SANS 10142
- Controlled loads will be disconnected outside operating voltage range for protection
- DIN rail mounted
- Screwdriver current setting from 1 to 99 Amps

PowerOptimal PowerGuard RL20-1 specification

INTRODUCING THE PowerGuard® RL20-1



PowerGuard RL20-1 is a DIN-rail mount relay primarily designed for use in conjunction with the PowerGuard DPM20-8 demand control unit. Contacts are activated by a DC voltage which is opto-isolated from the control circuit. The contact configuration switches the mains live circuit to the output when energised.

This unit is designed and manufactured in South Africa.

SPECIFICATIONS

SPECIFICATIONS

- Input power: 230 Vac
- Control voltage: 5 – 48 Volt DC
- Size: DIN standard, 48mm wide

Installation & User Manuals

PowerGuard Commercial System CPM-3PC Mk 2 Installation Instructions - Main

PowerGuard commercial system installation instructions - CPM30-1W

PowerGuard Commercial Range User Manual

PowerGuard DPM20-2 installation instructions & diagram

PowerGuard DPM20-8 installation instructions & diagram