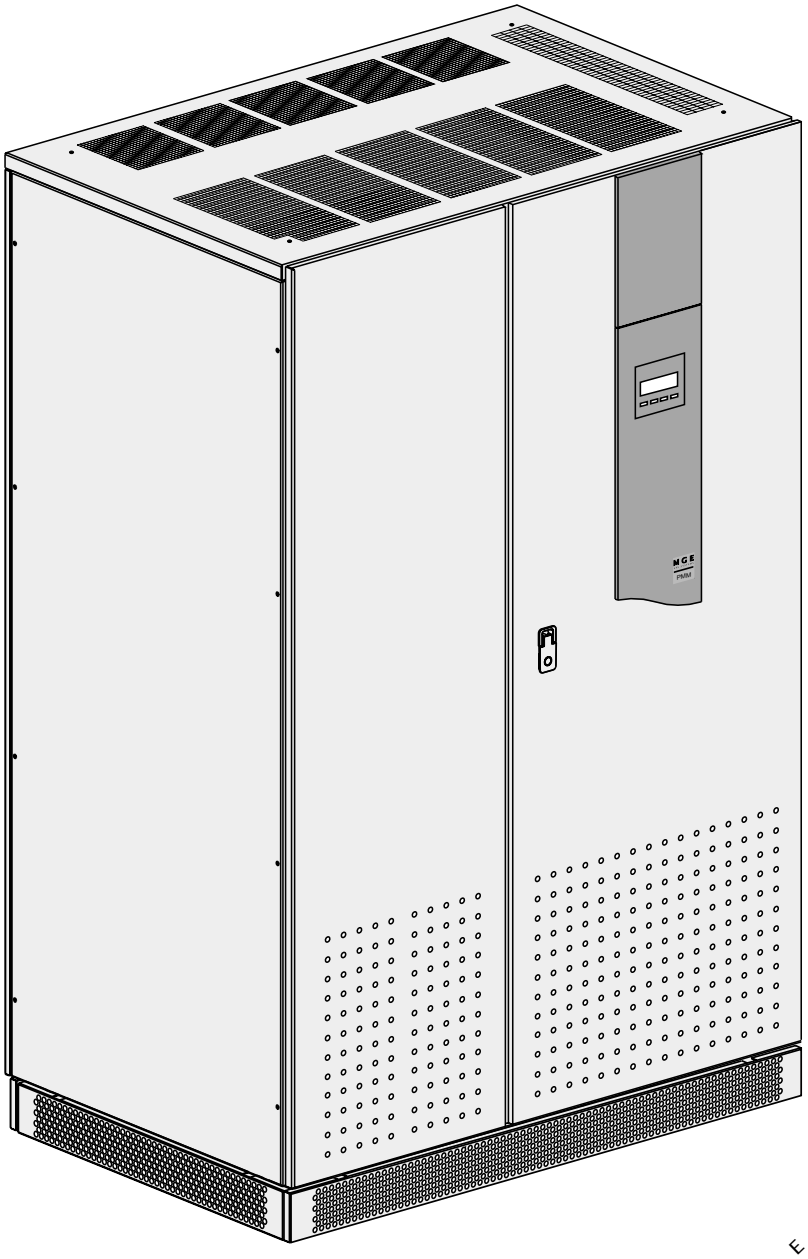
Power Management Module

250A

Installation and user manual



THE UNINTERRUPTIBLE POWER PROVIDER

MGE UPS SYSTEMS

Introduction

Thank you for selecting an MGE UPS SYSTEMS product to protect your electrical equipment.

The **Power Management Module (PMM)** has been designed with the utmost care. We recommend that you take the time to read this manual to take full advantage of the many features of your new equipment.

MGE UPS SYSTEMS pays great attention to the environmental impact of its products.
The considerable resources put into developing the **Power Management Module** make it a reference in terms of environmental protection. Of particular importance are:

- the eco-design approach during product development,
- recycling of the **Power Management Module** at the end of its service life.

MGE UPS SYSTEMS warrants this hardware product against defects in materials and workmanship for a period of one year.

Limitation of warranty: the above warranty shall not apply to defects resulting from: misure, non-MGE UPS SYSTEMS modification, operation or storage outside the environmental specifications for the product, improper maintenance, or defects resulting from use of non-MGE UPS SYSTEMS software, accessories, -media or such items not designed for use with the product.
Moreover, the warranty does not include the consumable goods and the replacements or repairs which would result from the abnormal wear of the products, and deteriorations or accidents coming from an external cause such as fire, damage of water, damage caused by other equipment...

We invite you to discover the entire MGE UPS SYSTEMS range of products and services including the options for the **Power Management Module** by visiting our Web site at **www.mgeups.com** or by contacting your nearest sales representative.

Foreword

Structure of this document

Information may be found via:
- the contents,
- the index.

Symbols


Mandatory instructions


General instructions, advice, help


Indication


Action


Earth cables


Other cables

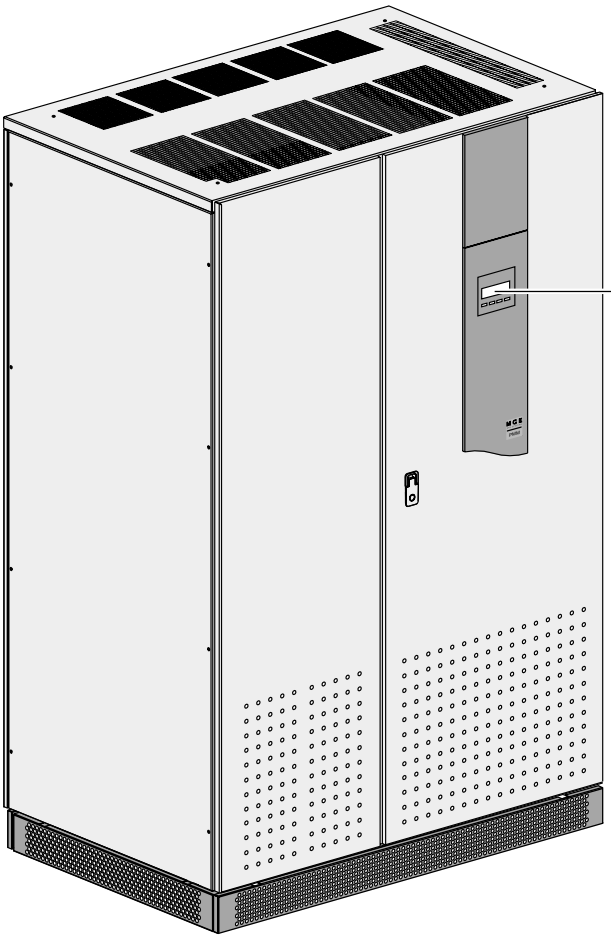
Contents

1. Presentation

1.1 250 A PMM modules

You can choose from 6 different modules depending on:

- the number of output circuits required and the type of protection (126 standard circuit breakers or 60 circuit breakers with earth-leakage protection),
- the presence of an isolation transformer,
- the depth (825 with or without an isolation transformer and 425 without).



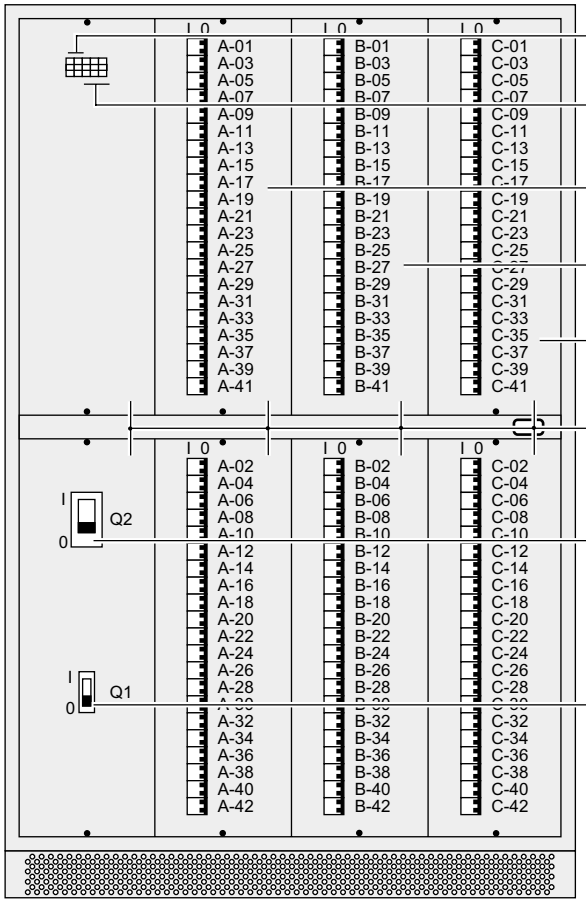
1 Control panel with display

Module characteristics

Number of circuits	Isolation transformer	Depth in mm	Width in mm	Height in mm	Weight in kg
126	Yes	825	1215	1900	900
126	No	825	1215	1900	350
126	No	425	1215	1900	300
60 (with EL protection)	Yes	825	1215	1900	900
60 (with EL protection)	No	825	1215	1900	350
60 (with EL protection)	No	425	1215	1900	300

1.2 Access to the circuit breakers

Version with 126 circuit breakers (doors open)



2 F1 disconnector-fuse for protection of the control electronics

3 F2 disconnector-fuse for protection of the voltage measurement inputs

6 2 x 21 circuit breakers for phase A (A-1 to A-41 and A-2 to A-42)

7 2 x 21 circuit breakers for phase B (B-1 to B-41 and B-2 to B-42)

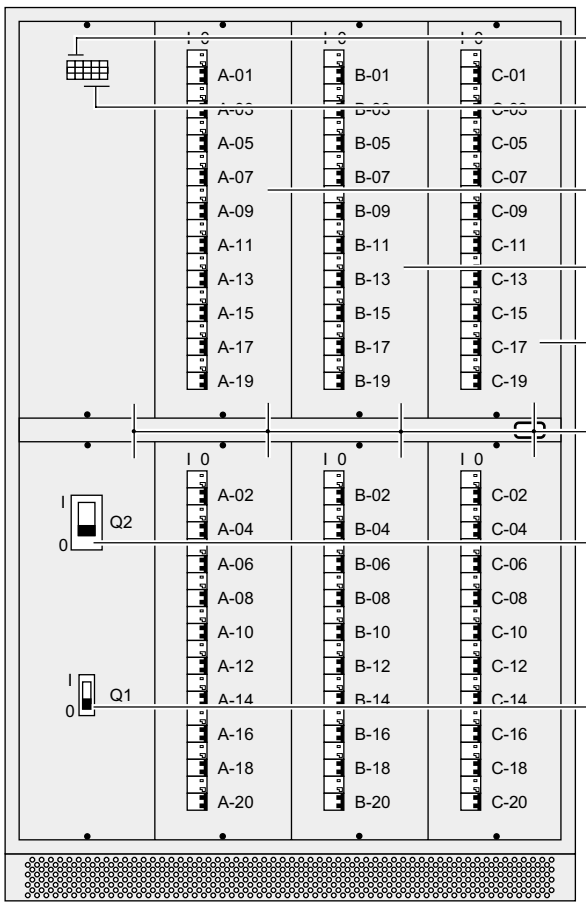
8 2 x 21 circuit breakers for phase C (C-1 to C-41 and C-2 to C-42)

9 Eight connection cover panels

4 General protection circuit breaker for the 126 output circuits

5 Upstream general protection circuit breaker (only in modules with an isolation transformer)

Version with 60 circuit breakers (doors open)



2 F1 disconnector-fuse for protection of the control electronics

3 F2 disconnector-fuse for protection of the voltage measurement inputs

6 2 x 10 circuit breakers with earth-leakage protection for phase A (A-1 to A-19 and A-2 to A-20)

7 2 x 10 circuit breakers with earth-leakage protection for phase B (B-1 to B-19 and B-2 to B-20)

8 2 x 10 circuit breakers with earth-leakage protection for phase C (C-1 to C-19 and C-2 to C-20)

9 Eight connection cover panels

4 General protection circuit breaker for the 60 output circuits

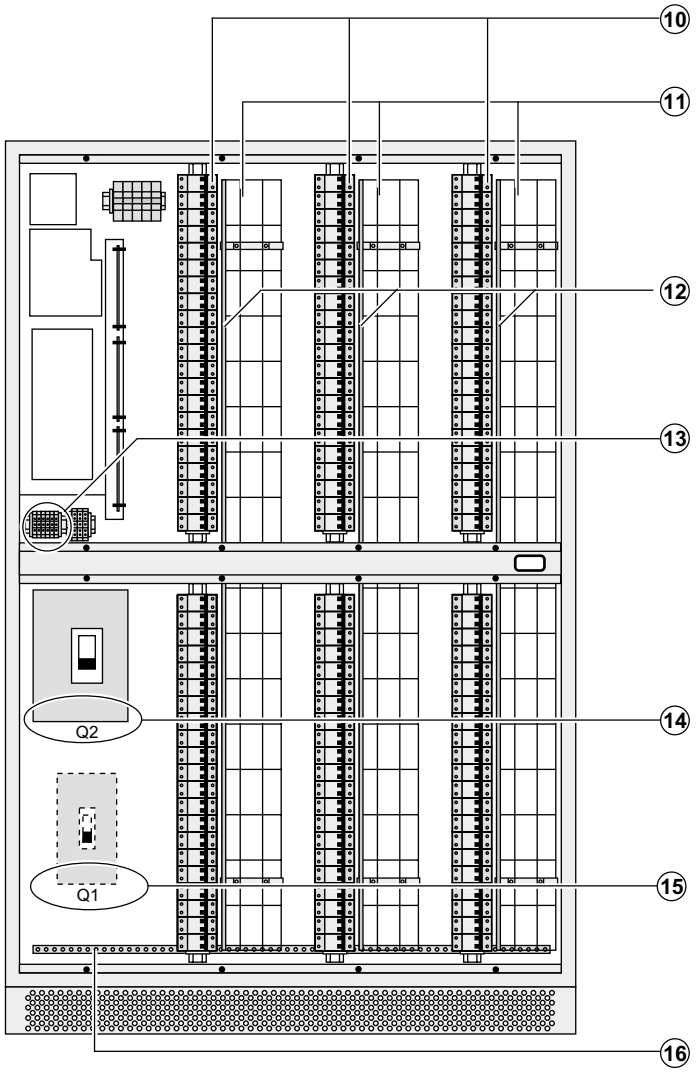
5 Upstream general protection circuit breaker (only in modules with an isolation transformer)

1. Presentation

1.3 Access to connections

Remove the eight cover panels (each secured with two screws).

Example showing the version with 126 output circuits:



10 Phase connections for output-circuit cables

11 Metal trunking for passage and securing of output cables

12 Connection bars for earth wires of output cables

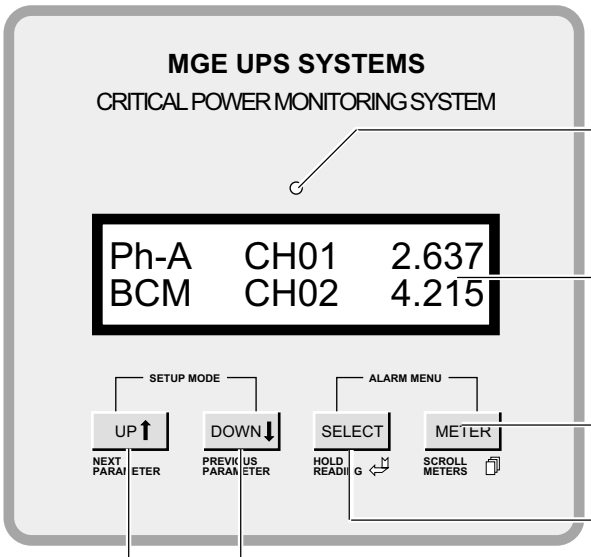
13 Terminal block for remote shutdown function and minor and major alarms

14 In modules without an isolation transformer, connection of the three input phases and the neutral to circuit breaker Q2

15 In modules with an isolation transformer, of the three input phases to circuit breaker Q1

16 Main earthing bar of the module

1.4 Control panel



17 System status LED: see table on page 23

18 Alphanumeric display

22 Scroll through different types of measurements or return to display of measurements

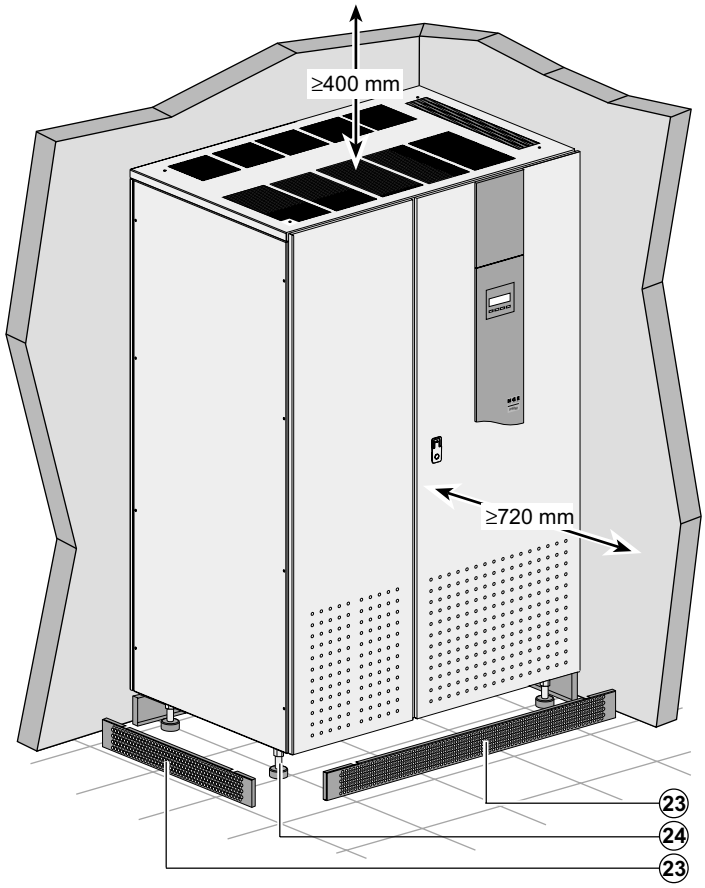
21 Scroll through different system settings

20 Previous measurement or setting

19 Next measurement or setting

2.1 Setting up the module

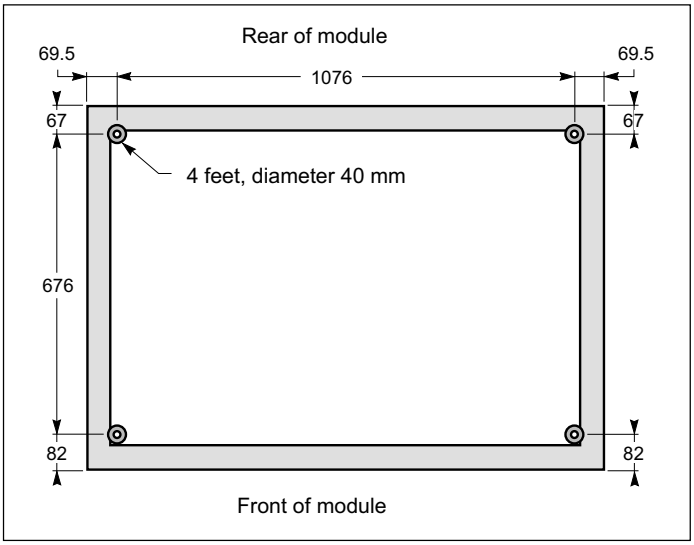
Module 825 mm deep



1. Install the lower base panels (23) on the sides that will not be accessible (not mandatory).
2. Position the module.
3. Level the module using the adjustable feet (24).
4. Install the lower base panels (23) on the visible sides.

Connection cables run under the false floor or in a cable trough.

Important.
At least 400 mm of free space is required above the module to ensure correct ventilation.
At least 720 mm of free space is required in front to open the doors.



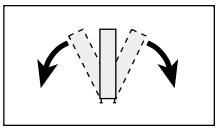
Footprint of module

Weight exerted on the floor by the four feet:
- 28 kg/cm^2 (module without transformer),
- up to 72 kg/cm^2 (module with transformer).

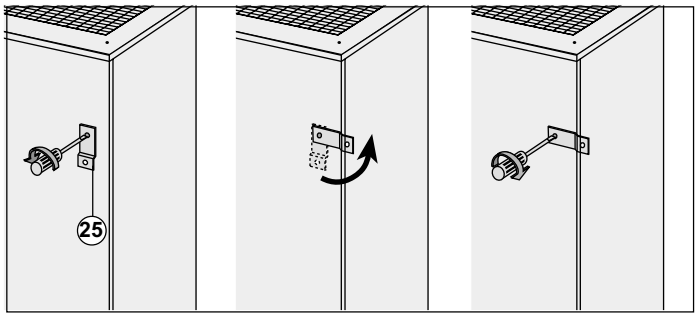
2. Installation

Module 425 mm deep

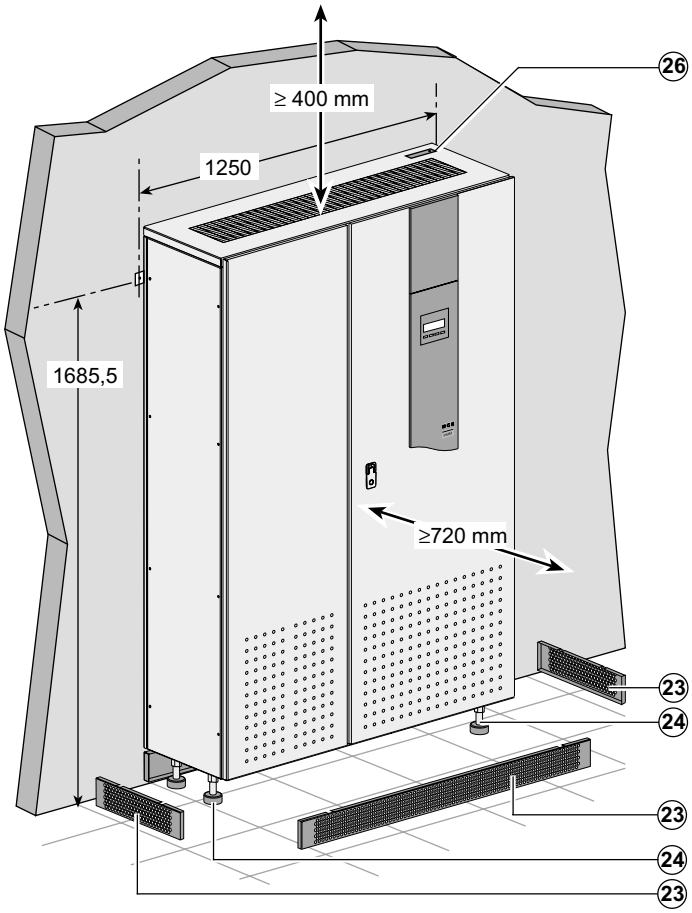
Installation against a wall



Caution: during handling, make sure the module does not fall over.



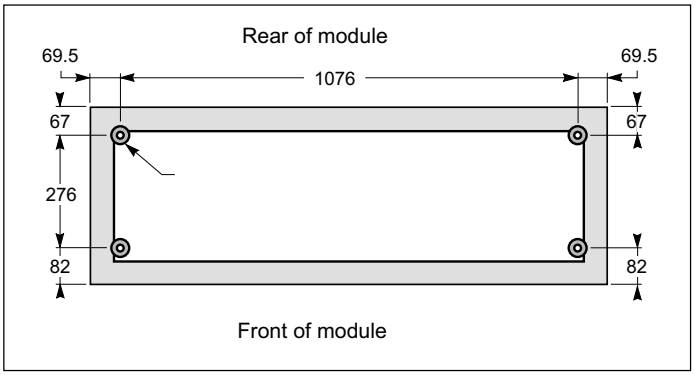
1. Turn to horizontal position the two brackets (25) at the back used to secure the module (see figure).



2. Install the rear base panel (23) (not mandatory).
3. Position the module.
4. Level the module using the adjustable feet (24).
5. Attach the module to the wall using the two rear brackets.
6. Install the base panels (23) on the sides and front.
7. Remove the bracket (26) on the top of the module (used only for back-to-back assembly of two modules) and retighten the fixing screw.

Connection cables run under the false floor or in a trough.

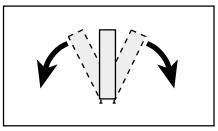
Important:
At least 400 mm of free space is required above the module to ensure correct ventilation.
At least 720 mm of free space is required in front to open the doors.



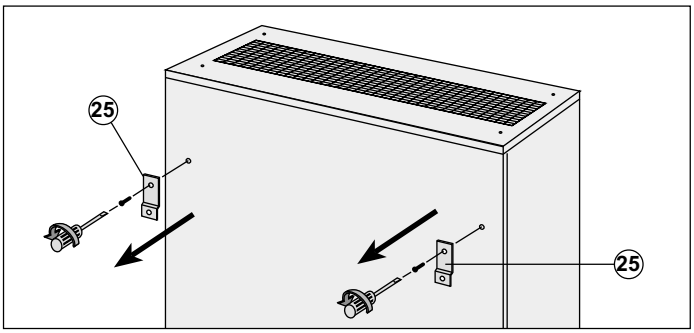
Footprint of module

Force exerted on the floor by the four feet:
- 28 kg/cm^2.

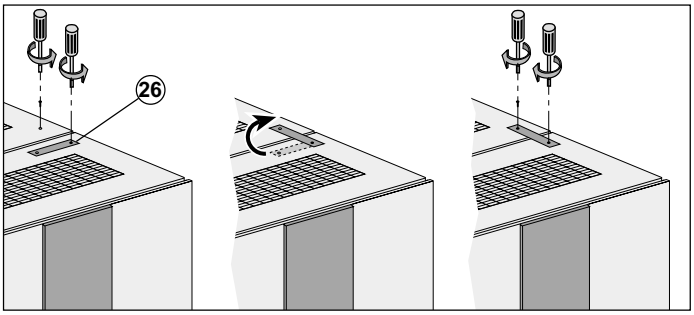
Back-to-back assembly



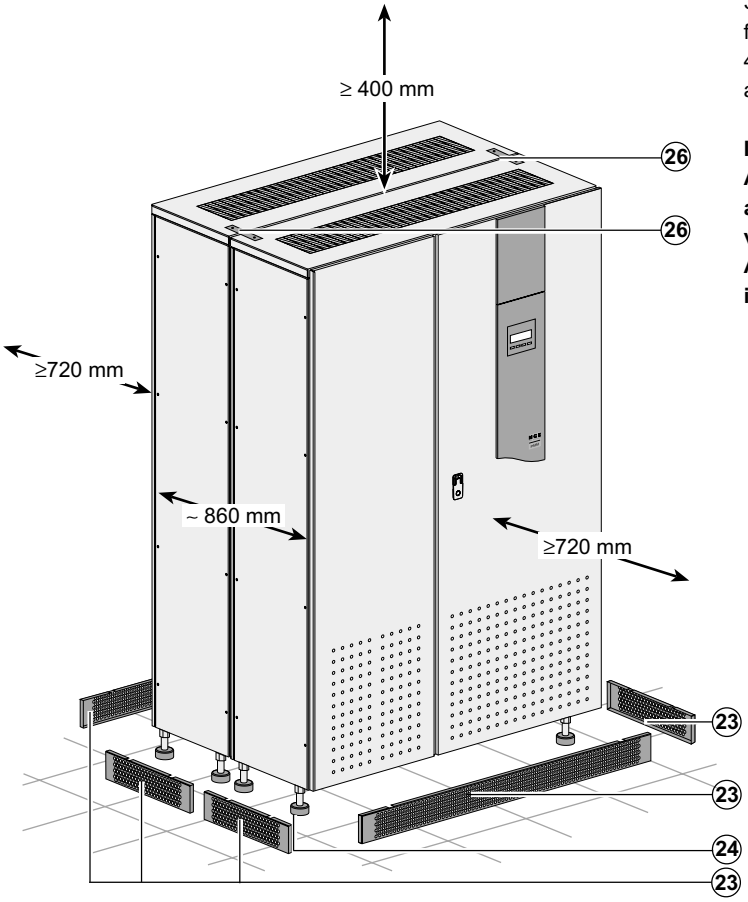
Caution: during handling, make sure the modules do not fall over.



1. Remove the brackets (25) on the back of the module (used only for securing the module to a wall) and retighten the fixing screws.



2. Position the modules and use the brackets (26) on the top **to interconnect the two modules** (see figure).



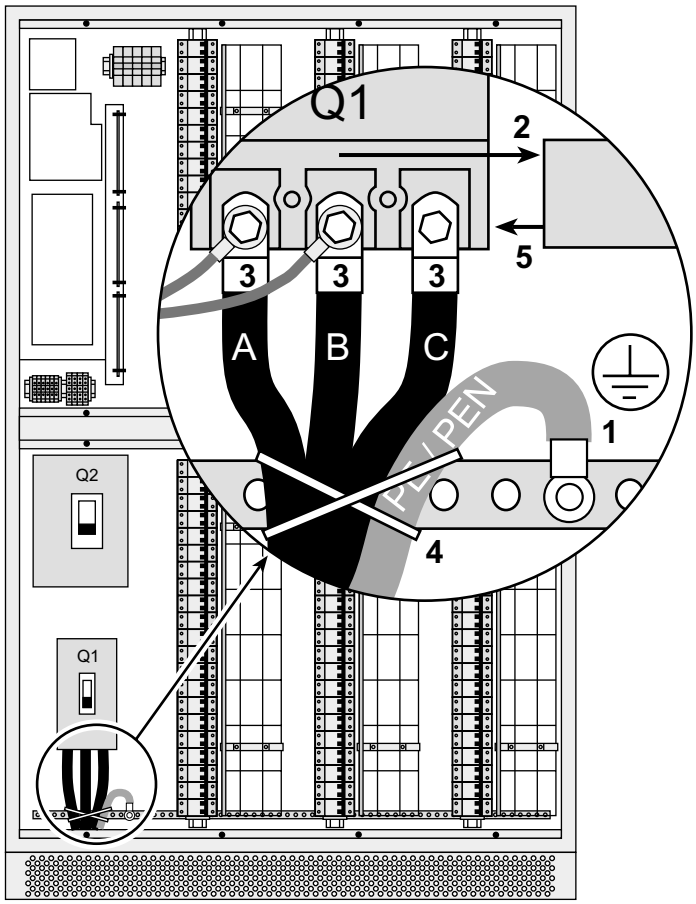
3. Level the modules using the adjustable feet (24).
4. Install the base panels (23) on the sides and fronts.

Important:
At least 400 mm of free space is required above the module to ensure correct ventilation.
At least 720 mm of free space is required in front to open the doors.

2. Installation

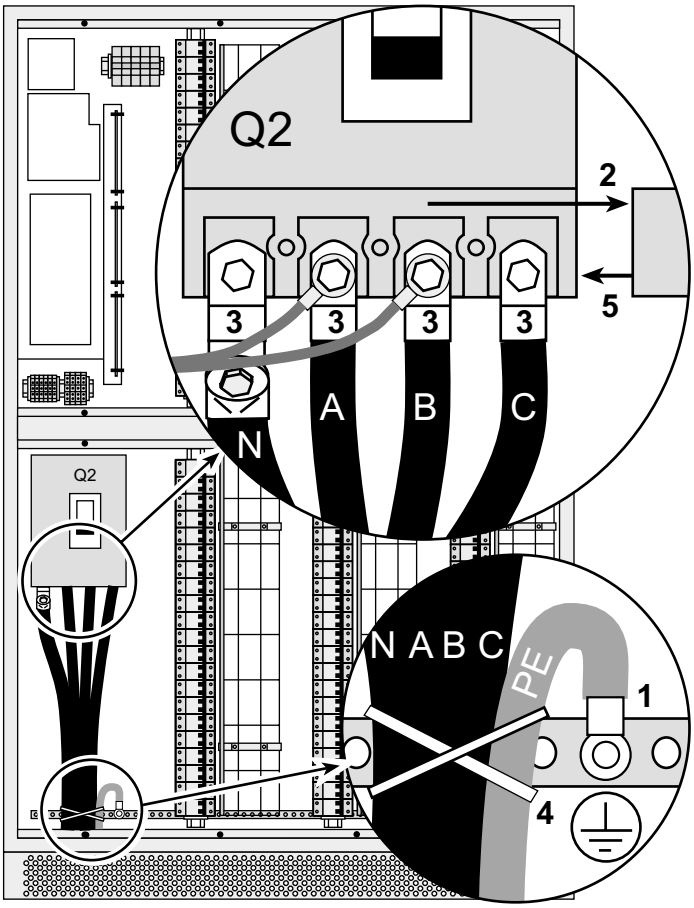
2.2 Input power connections

Specifications for protection devices and cables are provided in section 6 (Appendices, technical data sheet).
To access the connections, see section 1.3. Connection cables are not supplied.



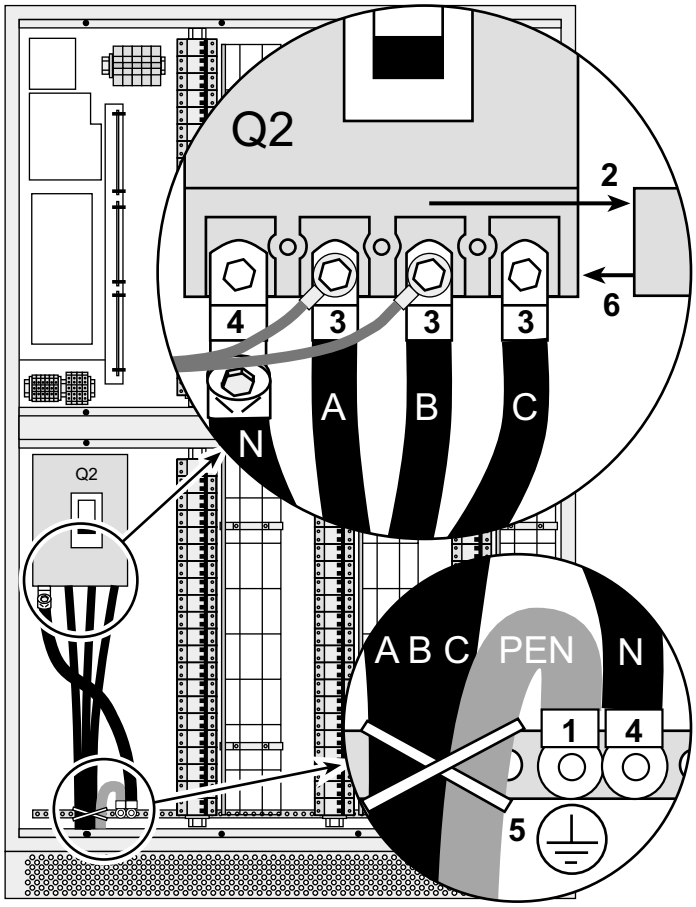
Module with isolation transformer

1. Connect the PE or PEN protection cable to the earthing bar at the bottom of the module.
2. Remove the bottom cover on circuit breaker Q1.
3. Connect the three phases of the input power cable to the bottom terminals of circuit breaker Q1 (without removing the control wires that are already connected).
4. Ties the cables to the earthing bar.
5. Refit the bottom cover on circuit breaker Q1.



Module without isolation transformer, separate earth and neutral (TNS system)

1. Connect the PE protection cable to the earthing bar at the bottom of the module.
2. Remove the bottom cover on circuit breaker Q2.
3. Connect the three phases and the neutral of the input power cable to the bottom terminals of circuit breaker Q2 (without removing the control wires that are already connected).
4. Ties the cables to the earthing bar.
5. Refit the bottom cover on circuit breaker Q2.

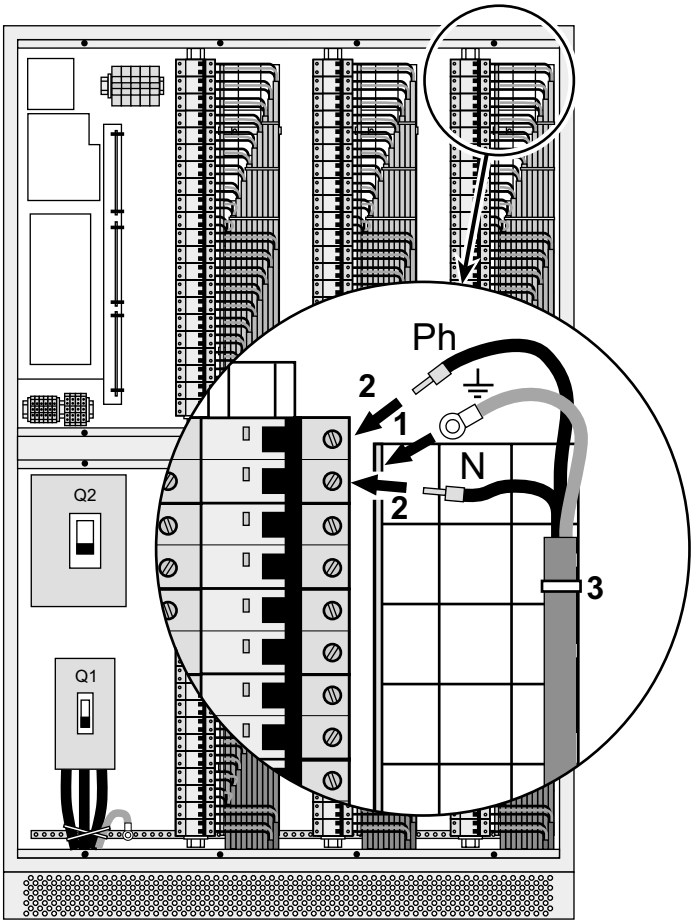


Module without isolation transformer, combined earth and neutral (TNC system)

1. Connect the PEN protection cable to the earthing bar at the bottom of the module.
2. Remove the bottom cover on circuit breaker Q2.
3. Connect the three phases of the input power cable to the bottom terminals of circuit breaker Q2 (without removing the control wires that are already connected).
4. Use a cable (not supplied) to connect the neutral connector on the lower part of circuit breaker Q2 to the earthing bar.
5. Ties the cables to the earthing bar.
6. Refit the bottom cover on circuit breaker Q2.

2. Installation

2.3 Output circuit connections

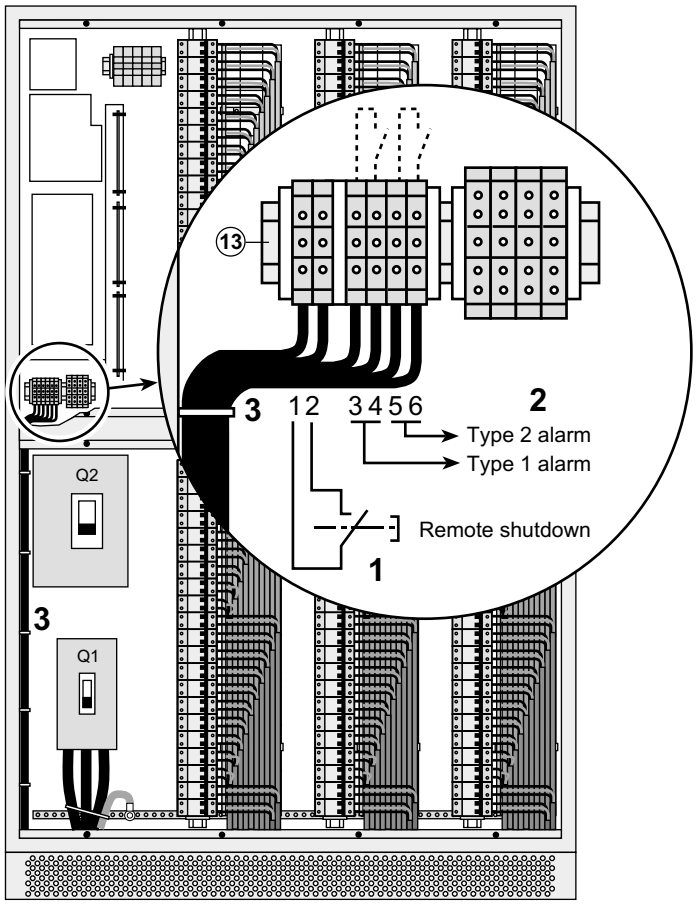


It is advised to use crimped ferrules on the phase wires and lugs on the earth wires.

1. Connect the earth wire of each output cable to the earth connection bar located to the left of the metal trunking.
2. Connect the phase and neutral wires to each circuit breaker.
3. Tie the cables to the metal trunking.

Note: it is advised to make the connections from the top down.

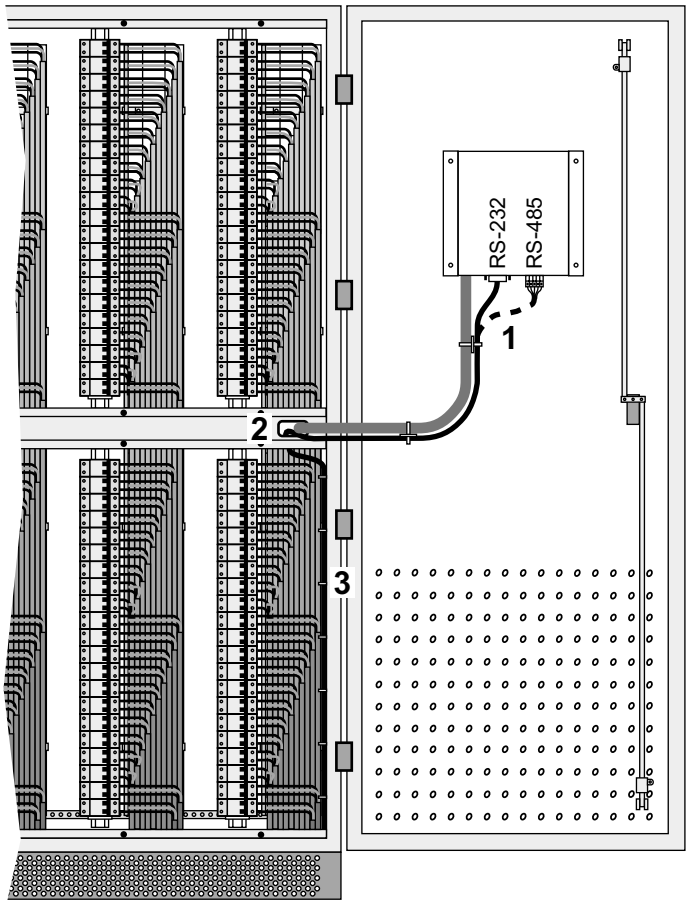
2.4 Alarm and remote shutdown connections



1. Connect the NO remote shutdown contact to terminals 1 and 2 on terminal block (13).
2. The alarm signals are transmitted by dry contacts (Umax = 250 V AC / 30 V DC, Imax = 7 A AC / 10 A DC) between terminals 3 and 4 for the type 1 alarm and between 5 and 6 for the type 2 alarm.
3. Tie the cable down to the module frame.

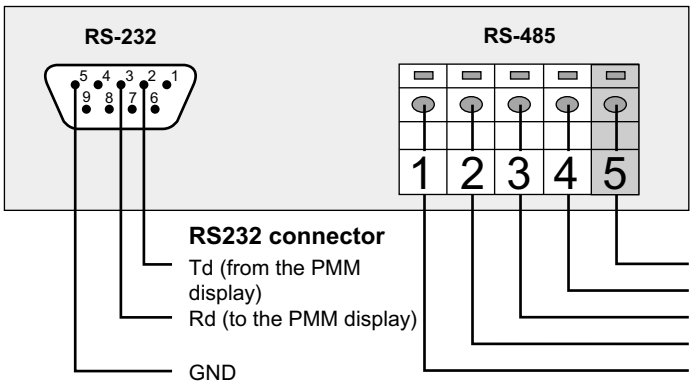
Warning: the remote shutdown function is not implemented using a very low safety voltage.
Consequently, the usual safety measures must be taken to avoid all risk of electrical shock when making connections for this function.

2.5 Communication connections



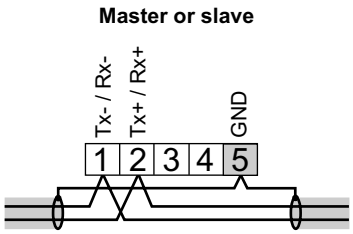
1. Connect the communication cable to the RS232 or RS485 connector on the right-hand door of the module.
2. Run the cable as shown in the figure opposite.
3. Tie the cable down to the module frame.

Communication connector details

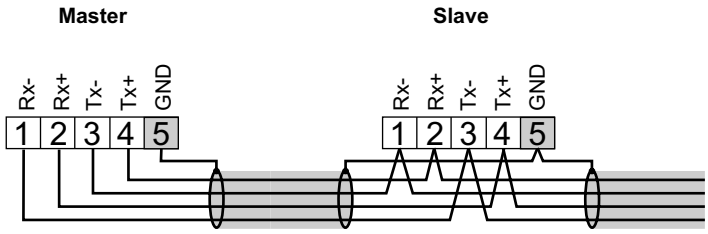


RS485 connector 2 wires	RS485 connector 4 wires
GND	GND
Not used	Tx+
Not used	Tx-
Tx+ / Rx+	Rx+
Tx- / Rx-	Rx-

Example of an RS485 2-wire connection:



Example of an RS485 4-wire connection:



3. Operation

3.1 Turning on the PMM module

1. Close the upstream switching device (external and not supplied) on the circuit supplying the **PMM** module.
2. In a module with an isolation transformer, close ("I" or ON position) circuit breaker Q1 (5) (see page 7) .
3. Make sure disconnector-fuses F1 and F2 are closed and close ("I" or ON position) circuit breaker Q2 (5) (see page 7) .

◗ The system status LED (17) (see page 8) flashes yellow a few seconds, then green and should subsequently remain green.

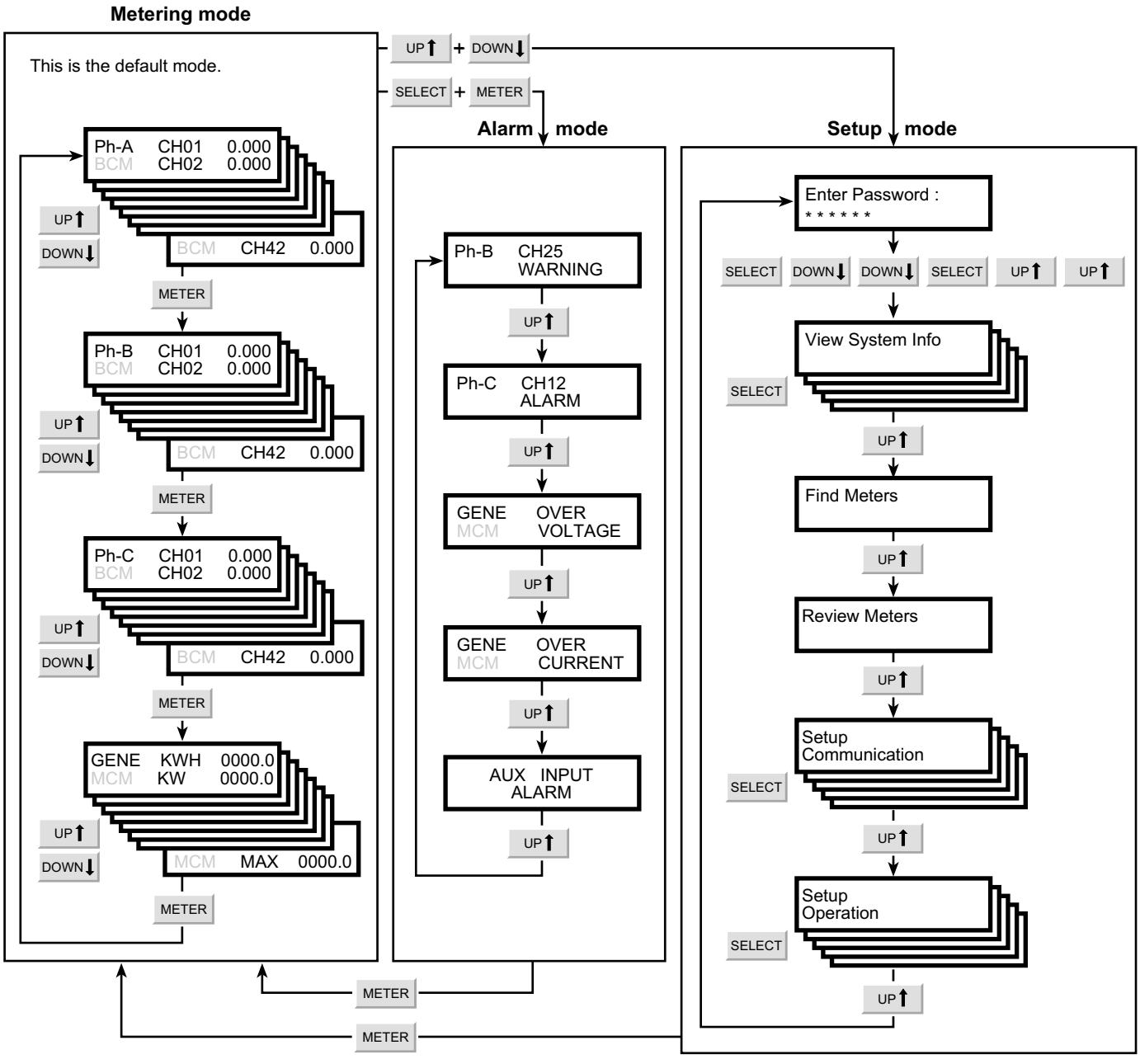
◗ After a few seconds, the first page of measurements is displayed:

Ph-A	CH01	0.000
BCM	CH02	0.000

4. Close the circuit breakers on the output circuits to be powered.

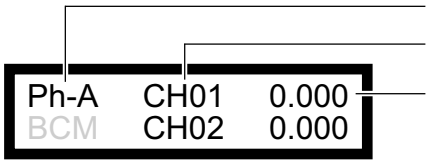
3.2 Display

The display unit for the **PMM** module offers three operating modes: metering, alarm and setup.



3.3 Metering

Output-circuit metering

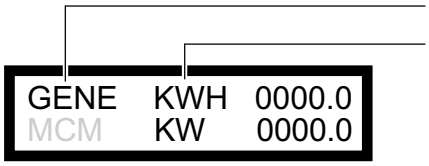


Ph-A: measurements on phase A

CH-01: measurements on output circuit 01

Display of the current drawn by the output circuit in amperes

General metering



GENE: general measurements.

Measurement units:
KWH: total energy consumed by the **PMM** module in kWh.
This value can be reset via the communication function.
KW: total active power drawn by the **PMM** module in kW.
KVAR: reactive power drawn by the **PMM** module in kVAR.
KVA: apparent power drawn by the **PMM** module in kVA.
PF: average power factor on the three phases of the **PMM** module.
V-LL: average phase-to-phase voltage on the three phases of the **PMM** module in volts.
V-LN: average phase-to-neutral voltage on the three phases of the **PMM** module in volts.
AMPS: average current on the three phases of the **PMM** module in amperes.
FREQ: frequency of the voltage supplied by the **PMM** module in Hertz.
KW-A, KW-B, KW-C: active power drawn by phases A, B and C of the **PMM** module in kW.
PF-A, PF-B, PF-C: power factor on phases A, B and C of the **PMM** module.
V-AB, V-BC, V-AC: phase-to-phase voltages supplied by the **PMM** module in volts.
V-AN, V-BN, V-CN: phase-to-neutral voltages supplied by the **PMM** module in volts.
AMPA, AMPB, AMPC, AMPN: current on the three phases A, B, C and on the neutral of the **PMM** module in amperes.
MIN: minimum power (stored in memory) supplied by the **PMM** module in kW since the last reset.
MAX: maximum power (stored in memory) supplied by the **PMM** module in kW since the last reset.

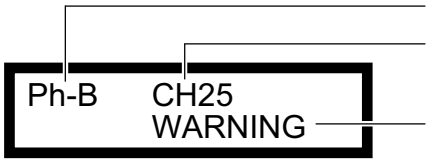
The minimum, maximum and average power values are reset via the communication function.

The SELECT button may be used to hold the display of a measurement if the module is set up for autoscrolling (parameter rotation). The display flashes and the measurement is not updated.

3.4 Alarms

Access alarm mode by pressing simultaneously the SELECT + METER buttons.

This mode displays the list of stored major and minor faults that have occurred in the **PMM** or on the output circuits.
When an alarm is present in the memory, LED (17) goes on:
- **yellow** for fault that does not hinder normal operation;
- **red** for a fault requiring intervention.



Ph-B: alarm on phase B.

CH-25: alarm on output circuit 25.

Alarm text:
WARNING: indicates that the current on the indicated circuit (number 25, phase B) is between 60 and 80% of the maximum value.
ALARM: indicates that the current on the indicated circuit is higher than 80% of the maximum value.
OVER VOLTAGE: the voltage supplied by the **PMM** exceeds the permissible range by over 10%.
OVER CURRENT: there is an overload on the **PMM**.
AUX INPUT ALARM: this alarm signals either:
- excessive temperature rise in the isolation transformer,
- or activation of the remote shutdown button.

These alarms are stored in memory:

- Press the SELECT button to clear the displayed alarm.
- Press the METER button to return to metering mode.

The display automatically returns to metering mode if buttons (19) to (22) are not used for ten seconds.

3. Operation

3.5 Setup

Access setup mode by pressing simultaneously the UP + DOWN buttons and then entering the password:

SELECT DOWN DOWN SELECT UP UP .

This mode presents the functions listed below.
View System Info, **Find Meters** and **Review Meters** : these functions are reserved for MGE UPS SYSTEMS.
Setup Communication : access to the communication settings.
Setup Operation : access to the display settings (luminosity, autoscroll) and selection of the alarm operating mode (open or closed contacts).

The display automatically returns to metering mode if buttons are not used for ten seconds.

Communication settings

Settings include:
- **Routing Address** (ON, OFF): internal setting reserved for MGE UPS SYSTEMS, **must not be modified** (ON).
- **Modbus Address** (1 to 225): Modbus address, must be selected from 1 to 225 (by steps of 16).
- **Upstream Type** (RS-485, RS-232, INFRARED): type of serial link.
- **Upstream Duplex** (2-WIRE, 4-WIRE): 2 or 4-wire link.
- **Upstream Baudrate** (2400, 4800, 9600, 19200): speed of transmission in Bauds.
- **Upstream Parity** (NONE, ODD, EVEN): parity.
- **Downstream Duplex**: internal setting reserved for MGE UPS SYSTEMS, **must not be modified** (2-WIRE).
- **Downstream Baudrate**: internal setting reserved for MGE UPS SYSTEMS, **must not be modified** (9600).
- **Downstream Parity**: internal setting reserved for MGE UPS SYSTEMS, **must not be modified** (NONE).

Operation settings (display and alarms)

The user-settable parameters are listed below.
- **Blacklight Brightness** (0 to 9): adjustment of the display luminosity.
- **Auxiliary INPUT ALARM**: internal setting reserved for MGE UPS SYSTEMS, **must not be modified** (CLOSED).
- **Rotate parameters** (NO, YES) : fixed display or autoscroll.

3.6 Turning off the PMM module

1. Open ("O" or OFF position) all the circuit breakers on the output circuits.
2. Open ("O" or OFF position) circuit breaker Q2 (4).
3. In a module with an isolation transformer, open ("O" or OFF position) circuit breaker Q1 (5).
4. Open the upstream switching device of the installation on the circuit supplying the PMM. LED (17) and the display go off.

Caution: dangerous voltage levels are present inside the PMM, even if Q1 and Q2 are open.

4.1 Trouble-shooting and solutions

Alarm	Meaning	Action
WARNING	The current on the indicated output circuit is between 60 and 80% of the maximum value for the circuit.	Monitor the power drawn on the circuit and avoid adding other loads to the circuit.
ALARM	The current on the indicated output circuit is higher than 80% of the maximum value for the circuit.	Turn off certain loads connected to the circuit until the fault disappears (after alarm reset).
OVER VOLTAGE	The voltage on the distribution system is high.	Monitor the voltage on the distribution system. The connected loads may suffer breakdowns.
OVER CURRENT	The load on the **PMM** module is higher than 250A.	Turn off certain connected loads until the fault disappears (after alarm reset).
AUX INPUT ALARM	◗ Temperature rise in the isolation transformer. ◗ Activation of the remote shutdown function.	◗ Check the ventilation system in the room. ◗ Shut down the **PMM** module, then start it up again when the remote shutdown signal has been cleared.

Fault	Possible Causes	Action
No display	◗ Fuses F1 blown, ◗ Disconnector-fuse F1 open.	◗ Call the MGE after-sales technical support, ◗ Close disconnector-fuse F1.
Incoherent measurement values	◗ Fuses F2 blown, ◗ Disconnector-fuse F2 open.	◗ Call the MGE after-sales technical support, ◗ Close disconnector-fuse F2.
LED (17) yellow	The current on at least one output circuit is between 60 and 80% of the maximum value for the circuit.	Consult the list of alarms (alarm mode) and reset the alarm.
LED (17) red	One of the following: ◗ The current on at least one output circuit is higher than 80% of the maximum value for the circuit, ◗ Overvoltage (>457V), ◗ Overcurrent (>250A), ◗ Transformer temperature too high, ◗ Actuation of remote shutdown function.	Consult the list of alarms (alarm mode) and reset the alarm.

5. Environment

This product has been designed to respect the environment.
It does not contain CFCs or HCFCs.

Recycling at the end of service life
MGE UPS SYSTEMS undertakes to have all products recovered at the end of their service life recycled by certified companies in compliance with applicable regulations (contact your branch office).

Packing materials
Comply with all applicable regulations for recycling of packing materials.

Web Site: **www.mgeups.com**

6.1 Technical data sheets

Electrical characteristics

Rated input current: 250 A per phase and 400 A for the neutral
Rated output current: 16 A per phase
Input voltages:
- Rated voltage: 380 V / 400 V / 415 V
- Maximum voltage: 457 V (415 V +10%)
- Minimum voltage: 342 V (380 V -10%)
- Rated frequency: 50 or 60 Hz (47 Hz minimum, 63 Hz maximum)

Output voltages: 220 V / 230 V / 240 V
F1 and F2 fuses: 0.5 A aM - 600 V - 100 kA

Thermal characteristics

Heat loss (with isolation transformer)**:**
- At full rated power: 5000 W
- At 50% rated power: 2000 W

Noise level

Acoustic noise as defined by standard ISO 3746: 62 dBa (with isolation transformer)

Maximum wire sizes for terminal blocks

- **Input phases:** 120 mm^2
- **Input neutral:** 2 x 120 mm^2
- **PE:** 120 mm^2
- **PEN:** 2 x 120 mm^2
- **Output circuits:** 2.5 mm^2
- **Auxiliary wires** (remote shutdown, remote alarms)**:** 1.5 mm^2
- **Communication wires:** shielded cable (telephone type)

Recommended upstream protection devices

Upstream system	Number of output circuits on PMM module	Recommended upstream circuit breaker	Settings(1)
TNC	126 output circuits	Siemens 3VL3725-1DC36-0AA0	I_R = 1.0 In I_i = 10 In
	60 output circuits	Merlin Gerin NS250 TM 250D 3/3 poles protected	I_R = 1.0 In I_m = 10 In
TNS	126 output circuits	Siemens 3VF52-1MH41-0AA0	I_R = 1.0 In I_i = 10 In
	60 output circuits	Merlin Gerin NS400 STR23SE 400 3/4 poles protected	I_0 = 0.63 In I_R = I_0 I_m = 10 I_R

(1) I_0 and I_R are thermal settings, I_i and I_m are magnetic settings.

Selection of the protection devices must comply with applicable standards and regulations using the information presented above and taking into account discrimination requirements.
The models in the table are only intended as a general indication and in no way engage the responsibility of MGE UPS SYSTEMS.

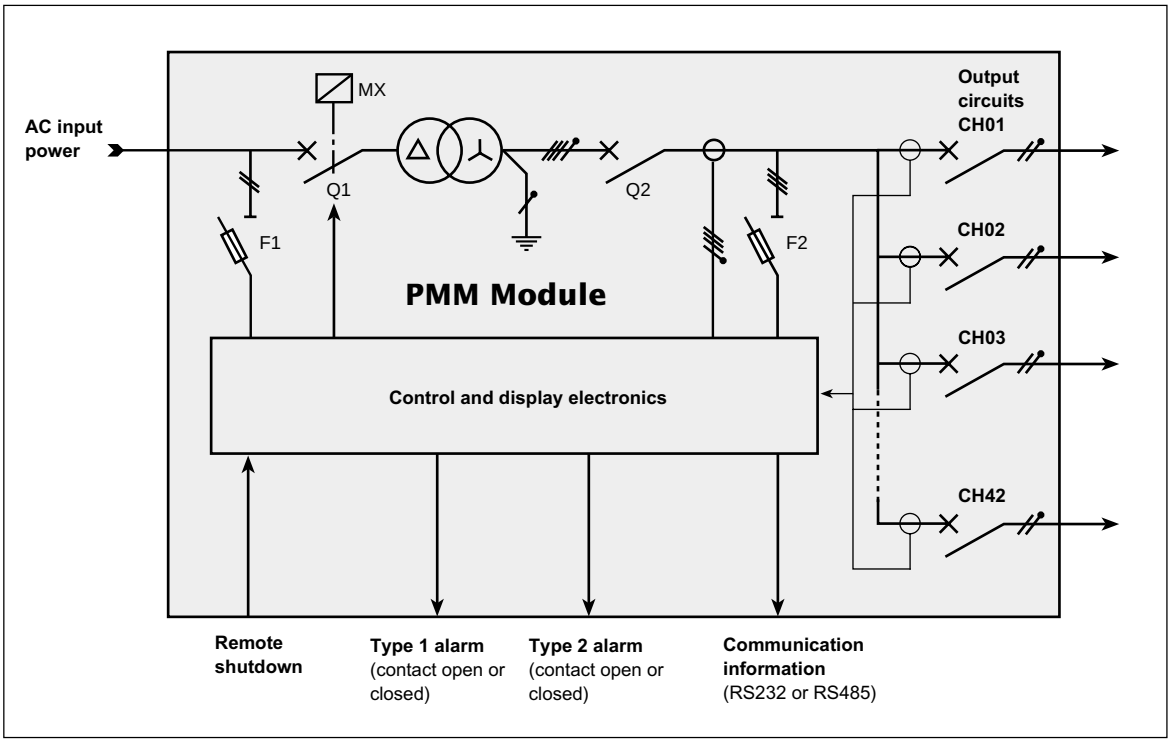
Standards

Protection level: IP 20C (standard CEI 529).
Environment: 2 (standard EN 60439-1).

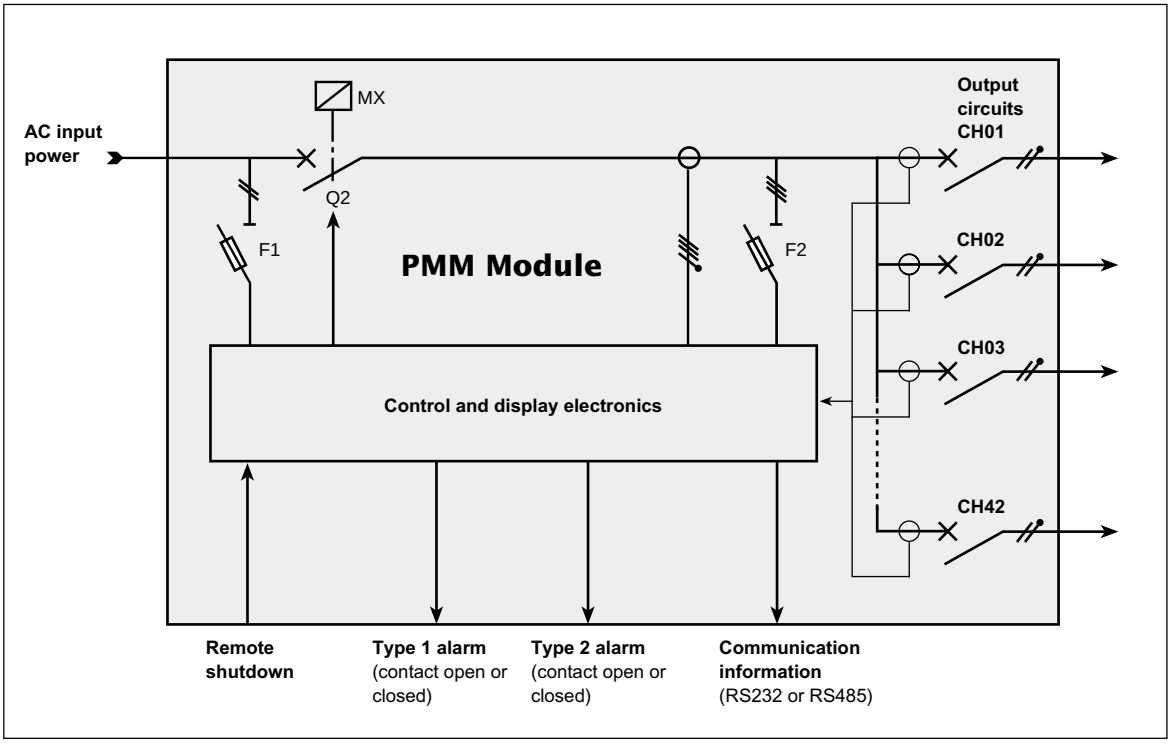
6. Appendices

6.2 Simplified diagrams

Version with isolation transformer



Version without isolation transformer



6.3 Auxiliary contact functions

	Alarm LED (17)	Type 1-alarm contact	Type 2-alarm contact	Cause
Normal operation	Green	OFF	OFF	
Downgraded operation	Yellow	ON	OFF	Current on at least one output circuit between 60% and 80% of max. value for the circuit.
Overload or overvoltage	Red	ON	OFF	◗ Current on at least one output circuit higher than 80% of max. value for the circuit, ◗ or overvoltage (> 457 V), ◗ or overcurrent (> 250 A).
Other fault	Red	OFF	ON	◗ Temperature rise in the isolation transformer, ◗ or actuation of remote shutdown function.

6.4 Modbus communication information

Access to communicated information

Each status indication or measurement displayed on the module is accessible via the RS232 or RS485 communication port.

Each **PMM** module uses a series of **16 addresses**.

If the network communicates with a number of **PMM** modules, use an available series among the following series of 16 addresses for each module: 1 to 16 ,17 to 32, 33 to 48, 49 to 64, 65 to 80, 81 to 96, 97 to 112, 113 to 128, 129 to 144, 145 to 160, 161 to 176, 177 to 192, 193 to 208, 209 to 224 and 225 to 241.

The **16 addresses** in each series are assigned the following functions:
1st address in the series: reserved for MGE UPS SYSTEMS,
2nd address in the series: access to card BCM1 (status and measurements for output circuits of phase A),
3rd address in the series: access to card BCM2 (status and measurements for output circuits of B),
4th address in the series: access to card BCM3 (status and measurements for output circuits of C),
5th to 8th address in the series: reserved for MGE UPS SYSTEMS,
9th address in the series: access to card MCM (general status and measurements),
10th to 16th address in the series: reserved for MGE UPS SYSTEMS.

As indicated above, four addresses in each series are used to access the information in the registers of four cards, corresponding to all the status and measurement information presented in the tables on the following pages.

Key for tables:
: register using 2 bytes,
R/W : read only (**R**) or read/write (**R/W**) information,
Bit : detail of each bit of the address,
NV : non-volatile information,
Description : description of the concerned information.
Additional explications are provided in the right-hand column if necessary.

Warning: Do not modify the registers reserved for MGE UPS SYSTEMS. Changing these registers can cause the PMM module to malfunction.

6. Appendices

Cards BCM1, BCM2 and BCM3 (status and measurements for 42 or 21 output circuits of one phase)

All the variables are whole numbers.

#	Bit	R/W	NV	Description
1		R		Current in circuit 01
2		R		Current in circuit 02
...		...		.....
...		...		.....
41		R		Current in circuit 41
42		R		Current in circuit 42
43		R	NV	Global alarm register
	0			for the register with address 44
	1			for the register with address 45
	2			for the register with address 46
	3			for the register with address 47
	4			for the register with address 48
	5			for the register with address 49
	6 to 15			Unused bits
44		R/W	NV	Minor alarms on circuits 1 to 16
	0			60% < Current in circuit 01 < 80%
	1			60% < Current in circuit 02 < 80%
	2			60% < Current in circuit 03 < 80%
	3			60% < Current in circuit 04 < 80%
	4			60% < Current in circuit 05 < 80%
	5			60% < Current in circuit 06 < 80%
	6			60% < Current in circuit 07 < 80%
	7			60% < Current in circuit 08 < 80%
	8			60% < Current in circuit 09 < 80%
	9			60% < Current in circuit 10 < 80%
	10			60% < Current in circuit 11 < 80%
	11			60% < Current in circuit 12 < 80%
	12			60% < Current in circuit 13 < 80%
	13			60% < Current in circuit 14 < 80%
	14			60% < Current in circuit 15 < 80%
	15			60% < Current in circuit 16 < 80%
45		R/W	NV	Minor alarms on circuits 17 to 32
	0			60% < Current in circuit 17 < 80%
	1			60% < Current in circuit 18 < 80%
	2			60% < Current in circuit 19 < 80%
	3			60% < Current in circuit 20 < 80%
	4			60% < Current in circuit 21 < 80%
	5			60% < Current in circuit 22 < 80%
	6			60% < Current in circuit 23 < 80%
	7			60% < Current in circuit 24 < 80%
	8			60% < Current in circuit 25 < 80%
	9			60% < Current in circuit 26 < 80%
	10			60% < Current in circuit 27 < 80%
	11			60% < Current in circuit 28 < 80%
	12			60% < Current in circuit 29 < 80%
	13			60% < Current in circuit 30 < 80%
	14			60% < Current in circuit 31 < 80%
	15			60% < Current in circuit 32 < 80%
46		R/W	NV	Minor alarms on circuits 33 to 42
	0			60% < Current in circuit 33 < 80%
	1			60% < Current in circuit 34 < 80%
	2			60% < Current in circuit 35 < 80%
	3			60% < Current in circuit 36 < 80%
	4			60% < Current in circuit 37 < 80%
	5			60% < Current in circuit 38 < 80%
	6			60% < Current in circuit 39 < 80%
	7			60% < Current in circuit 40 < 80%
	8			60% < Current in circuit 41 < 80%
	9			60% < Current in circuit 42 < 80%
	10 to 15			Unused bits (all set to 0)

Each element represents the value in mA of the current in the given output circuit.

This register provides a rapid overview of the status of the alarms on the card.
The global alarm bit is 1 if any one of the 16 bits of the indicated register is 1.

These bits go to 1 when the current in a corresponding output circuit is greater than the minor alarm threshold (60% in the example opposite) and less than the major alarm threshold (80% in the example opposite). This state is stored in memory until the alarm is reset by setting the bit to 0.

#	Bit	R/W	NV	Description
47		R/W	NV	Major alarms on circuits 1 to 16
	0			Current in circuit 01 > 80%
	1			Current in circuit 02 > 80%
	2			Current in circuit 03 > 80%
	3			Current in circuit 04 > 80%
	4			Current in circuit 05 > 80%
	5			Current in circuit 06 > 80%
	6			Current in circuit 07 > 80%
	7			Current in circuit 08 > 80%
	8			Current in circuit 09 > 80%
	9			Current in circuit 10 > 80%
	10			Current in circuit 11 > 80%
	11			Current in circuit 12 > 80%
	12			Current in circuit 13 > 80%
	13			Current in circuit 14 > 80%
	14			Current in circuit 15 > 80%
	15			Current in circuit 16 > 80%
48		R/W	NV	Major alarms on circuits 17 to 32
	0			Current in circuit 17 > 80%
	1			Current in circuit 18 > 80%
	2			Current in circuit 19 > 80%
	3			Current in circuit 20 > 80%
	4			Current in circuit 21 > 80%
	5			Current in circuit 22 > 80%
	6			Current in circuit 23 > 80%
	7			Current in circuit 24 > 80%
	8			Current in circuit 25 > 80%
	9			Current in circuit 26 > 80%
	10			Current in circuit 27 > 80%
	11			Current in circuit 28 > 80%
	12			Current in circuit 29 > 80%
	13			Current in circuit 30 > 80%
	14			Current in circuit 31 > 80%
	15			Current in circuit 32 > 80%
49		R/W	NV	Major alarms on circuits 33 to 42
	0			Current in circuit 33 > 80%
	1			Current in circuit 34 > 80%
	2			Current in circuit 35 > 80%
	3			Current in circuit 36 > 80%
	4			Current in circuit 37 > 80%
	5			Current in circuit 38 > 80%
	6			Current in circuit 39 > 80%
	7			Current in circuit 40 > 80%
	8			Current in circuit 41 > 80%
	9			Current in circuit 42 > 80%
	10 to 15			Unused bits (all set to 0)
50		R	NV	Reserved for MGE UPS SYSTEMS
51		R	NV	Reserved for MGE UPS SYSTEMS
52		R/W	NV	Rating of breaker on circuit 01
53		R/W	NV	Rating of breaker on circuit 02
54		R/W	NV	Rating of breaker on circuit 03
55		R/W	NV	Rating of breaker on circuit 04
56		R/W	NV	Rating of breaker on circuit 05
57		R/W	NV	Rating of breaker on circuit 06
58		R/W	NV	Rating of breaker on circuit 07
59		R/W	NV	Rating of breaker on circuit 08
60		R/W	NV	Rating of breaker on circuit 09
61		R/W	NV	Rating of breaker on circuit 10
62		R/W	NV	Rating of breaker on circuit 11
63		R/W	NV	Rating of breaker on circuit 12
64		R/W	NV	Rating of breaker on circuit 13
65		R/W	NV	Rating of breaker on circuit 14
66		R/W	NV	Rating of breaker on circuit 15
67		R/W	NV	Rating of breaker on circuit 16
68		R/W	NV	Rating of breaker on circuit 17

These bits go to 1 when the current in a corresponding output circuit is greater than the major alarm threshold (80% in the example opposite). This state is stored in memory until the alarm is reset by setting the bit to 0.

Circuit breaker ratings in amps (16). Must not be modified.

6. Appendices

#	Bit	R/W	NV	Description
69		R/W	NV	Rating of breaker on circuit 18
70		R/W	NV	Rating of breaker on circuit 19
71		R/W	NV	Rating of breaker on circuit 20
72		R/W	NV	Rating of breaker on circuit 21
73		R/W	NV	Rating of breaker on circuit 22
74		R/W	NV	Rating of breaker on circuit 23
75		R/W	NV	Rating of breaker on circuit 24
76		R/W	NV	Rating of breaker on circuit 25
77		R/W	NV	Rating of breaker on circuit 26
78		R/W	NV	Rating of breaker on circuit 27
79		R/W	NV	Rating of breaker on circuit 28
80		R/W	NV	Rating of breaker on circuit 29
81		R/W	NV	Rating of breaker on circuit 30
82		R/W	NV	Rating of breaker on circuit 31
83		R/W	NV	Rating of breaker on circuit 32
84		R/W	NV	Rating of breaker on circuit 33
85		R/W	NV	Rating of breaker on circuit 34
86		R/W	NV	Rating of breaker on circuit 35
87		R/W	NV	Rating of breaker on circuit 36
88		R/W	NV	Rating of breaker on circuit 37
89		R/W	NV	Rating of breaker on circuit 38
90		R/W	NV	Rating of breaker on circuit 39
91		R/W	NV	Rating of breaker on circuit 40
92		R/W	NV	Rating of breaker on circuit 41
93		R/W	NV	Rating of breaker on circuit 42
94		R/W	NV	Minor alarm threshold (%) for circuit 01
95		R/W	NV	Minor alarm threshold (%) for circuit 02
96		R/W	NV	Minor alarm threshold (%) for circuit 03
97		R/W	NV	Minor alarm threshold (%) for circuit 04
98		R/W	NV	Minor alarm threshold (%) for circuit 05
99		R/W	NV	Minor alarm threshold (%) for circuit 06
100		R/W	NV	Minor alarm threshold (%) for circuit 07
101		R/W	NV	Minor alarm threshold (%) for circuit 08
102		R/W	NV	Minor alarm threshold (%) for circuit 09
103		R/W	NV	Minor alarm threshold (%) for circuit 10
104		R/W	NV	Minor alarm threshold (%) for circuit 11
105		R/W	NV	Minor alarm threshold (%) for circuit 12
106		R/W	NV	Minor alarm threshold (%) for circuit 13
107		R/W	NV	Minor alarm threshold (%) for circuit 14
108		R/W	NV	Minor alarm threshold (%) for circuit 15
109		R/W	NV	Minor alarm threshold (%) for circuit 16
110		R/W	NV	Minor alarm threshold (%) for circuit 17
111		R/W	NV	Minor alarm threshold (%) for circuit 18
112		R/W	NV	Minor alarm threshold (%) for circuit 19
113		R/W	NV	Minor alarm threshold (%) for circuit 20
114		R/W	NV	Minor alarm threshold (%) for circuit 21
115		R/W	NV	Minor alarm threshold (%) for circuit 22
116		R/W	NV	Minor alarm threshold (%) for circuit 23
117		R/W	NV	Minor alarm threshold (%) for circuit 24
118		R/W	NV	Minor alarm threshold (%) for circuit 25
119		R/W	NV	Minor alarm threshold (%) for circuit 26
120		R/W	NV	Minor alarm threshold (%) for circuit 27
121		R/W	NV	Minor alarm threshold (%) for circuit 28
122		R/W	NV	Minor alarm threshold (%) for circuit 29
123		R/W	NV	Minor alarm threshold (%) for circuit 30
124		R/W	NV	Minor alarm threshold (%) for circuit 31
125		R/W	NV	Minor alarm threshold (%) for circuit 32
126		R/W	NV	Minor alarm threshold (%) for circuit 33
127		R/W	NV	Minor alarm threshold (%) for circuit 34
128		R/W	NV	Minor alarm threshold (%) for circuit 35
129		R/W	NV	Minor alarm threshold (%) for circuit 36
130		R/W	NV	Minor alarm threshold (%) for circuit 37
131		R/W	NV	Minor alarm threshold (%) for circuit 38
132		R/W	NV	Minor alarm threshold (%) for circuit 39
133		R/W	NV	Minor alarm threshold (%) for circuit 40
134		R/W	NV	Minor alarm threshold (%) for circuit 41
135		R/W	NV	Minor alarm threshold (%) for circuit 42

These registers define the minor alarm thresholds.
A minor alarm occurs when the current in a given output circuit is greater than the minor alarm threshold and less than the major alarm threshold for a duration exceeding the minor alarm time delay.
The units are in % (60 = 60%).
The setting range is from 0 to 100.
The factory setting is 60.
A minor alarm is not activated if the current goes instantaneously from one threshold to the other.

#	Bit	R/W	NV	Description
136		R/W	NV	Major alarm threshold (%) for circuit 01
137		R/W	NV	Major alarm threshold (%) for circuit 02
138		R/W	NV	Major alarm threshold (%) for circuit 03
139		R/W	NV	Major alarm threshold (%) for circuit 04
140		R/W	NV	Major alarm threshold (%) for circuit 05
141		R/W	NV	Major alarm threshold (%) for circuit 06
142		R/W	NV	Major alarm threshold (%) for circuit 07
143		R/W	NV	Major alarm threshold (%) for circuit 08
144		R/W	NV	Major alarm threshold (%) for circuit 09
145		R/W	NV	Major alarm threshold (%) for circuit 10
146		R/W	NV	Major alarm threshold (%) for circuit 11
147		R/W	NV	Major alarm threshold (%) for circuit 12
148		R/W	NV	Major alarm threshold (%) for circuit 13
149		R/W	NV	Major alarm threshold (%) for circuit 14
150		R/W	NV	Major alarm threshold (%) for circuit 15
151		R/W	NV	Major alarm threshold (%) for circuit 16
152		R/W	NV	Major alarm threshold (%) for circuit 17
153		R/W	NV	Major alarm threshold (%) for circuit 18
154		R/W	NV	Major alarm threshold (%) for circuit 19
155		R/W	NV	Major alarm threshold (%) for circuit 20
156		R/W	NV	Major alarm threshold (%) for circuit 21
157		R/W	NV	Major alarm threshold (%) for circuit 22
158		R/W	NV	Major alarm threshold (%) for circuit 23
159		R/W	NV	Major alarm threshold (%) for circuit 24
160		R/W	NV	Major alarm threshold (%) for circuit 25
161		R/W	NV	Major alarm threshold (%) for circuit 26
162		R/W	NV	Major alarm threshold (%) for circuit 27
163		R/W	NV	Major alarm threshold (%) for circuit 28
164		R/W	NV	Major alarm threshold (%) for circuit 29
165		R/W	NV	Major alarm threshold (%) for circuit 30
166		R/W	NV	Major alarm threshold (%) for circuit 31
167		R/W	NV	Major alarm threshold (%) for circuit 32
168		R/W	NV	Major alarm threshold (%) for circuit 33
169		R/W	NV	Major alarm threshold (%) for circuit 34
170		R/W	NV	Major alarm threshold (%) for circuit 35
171		R/W	NV	Major alarm threshold (%) for circuit 36
172		R/W	NV	Major alarm threshold (%) for circuit 37
173		R/W	NV	Major alarm threshold (%) for circuit 38
174		R/W	NV	Major alarm threshold (%) for circuit 39
175		R/W	NV	Major alarm threshold (%) for circuit 40
176		R/W	NV	Major alarm threshold (%) for circuit 41
177		R/W	NV	Major alarm threshold (%) for circuit 42
178		R/W	NV	Minor alarm delay for circuit 01
179		R/W	NV	Minor alarm delay for circuit 02
180		R/W	NV	Minor alarm delay for circuit 03
181		R/W	NV	Minor alarm delay for circuit 04
182		R/W	NV	Minor alarm delay for circuit 05
183		R/W	NV	Minor alarm delay for circuit 06
184		R/W	NV	Minor alarm delay for circuit 07
185		R/W	NV	Minor alarm delay for circuit 08
186		R/W	NV	Minor alarm delay for circuit 09
187		R/W	NV	Minor alarm delay for circuit 10
188		R/W	NV	Minor alarm delay for circuit 11
189		R/W	NV	Minor alarm delay for circuit 12
190		R/W	NV	Minor alarm delay for circuit 13
191		R/W	NV	Minor alarm delay for circuit 14
192		R/W	NV	Minor alarm delay for circuit 15
193		R/W	NV	Minor alarm delay for circuit 16
194		R/W	NV	Minor alarm delay for circuit 17
195		R/W	NV	Minor alarm delay for circuit 18
196		R/W	NV	Minor alarm delay for circuit 19
197		R/W	NV	Minor alarm delay for circuit 20
198		R/W	NV	Minor alarm delay for circuit 21
199		R/W	NV	Minor alarm delay for circuit 22
200		R/W	NV	Minor alarm delay for circuit 23
201		R/W	NV	Minor alarm delay for circuit 24

These registers define the major alarm thresholds.
A major alarm occurs when the current in a given output circuit is greater than the major alarm threshold a duration exceeding the major alarm time delay.
The units are in % (80 = 80%).
The setting range is from 0 to 100.
The factory setting is 80.

Minor alarm time delay for each output circuit.
This delay is expressed in seconds (from 0 to 65535 seconds).
The factory setting is 10 seconds.

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#	Bit	R/W	NV	Description
202		R/W	NV	Minor alarm delay for circuit 25
203		R/W	NV	Minor alarm delay for circuit 26
204		R/W	NV	Minor alarm delay for circuit 27
205		R/W	NV	Minor alarm delay for circuit 28
206		R/W	NV	Minor alarm delay for circuit 29
207		R/W	NV	Minor alarm delay for circuit 30
208		R/W	NV	Minor alarm delay for circuit 31
209		R/W	NV	Minor alarm delay for circuit 32
210		R/W	NV	Minor alarm delay for circuit 33
211		R/W	NV	Minor alarm delay for circuit 34
212		R/W	NV	Minor alarm delay for circuit 35
213		R/W	NV	Minor alarm delay for circuit 36
214		R/W	NV	Minor alarm delay for circuit 37
215		R/W	NV	Minor alarm delay for circuit 38
216		R/W	NV	Minor alarm delay for circuit 39
217		R/W	NV	Minor alarm delay for circuit 40
218		R/W	NV	Minor alarm delay for circuit 41
219		R/W	NV	Minor alarm delay for circuit 42
220		R/W	NV	Major alarm delay for circuit 01
221		R/W	NV	Major alarm delay for circuit 02
222		R/W	NV	Major alarm delay for circuit 03
223		R/W	NV	Major alarm delay for circuit 04
224		R/W	NV	Major alarm delay for circuit 05
225		R/W	NV	Major alarm delay for circuit 06
226		R/W	NV	Major alarm delay for circuit 07
227		R/W	NV	Major alarm delay for circuit 08
228		R/W	NV	Major alarm delay for circuit 09
229		R/W	NV	Major alarm delay for circuit 10
230		R/W	NV	Major alarm delay for circuit 11
231		R/W	NV	Major alarm delay for circuit 12
232		R/W	NV	Major alarm delay for circuit 13
233		R/W	NV	Major alarm delay for circuit 14
234		R/W	NV	Major alarm delay for circuit 15
235		R/W	NV	Major alarm delay for circuit 16
236		R/W	NV	Major alarm delay for circuit 17
237		R/W	NV	Major alarm delay for circuit 18
238		R/W	NV	Major alarm delay for circuit 19
239		R/W	NV	Major alarm delay for circuit 20
240		R/W	NV	Major alarm delay for circuit 21
241		R/W	NV	Major alarm delay for circuit 22
242		R/W	NV	Major alarm delay for circuit 23
243		R/W	NV	Major alarm delay for circuit 24
244		R/W	NV	Major alarm delay for circuit 25
245		R/W	NV	Major alarm delay for circuit 26
246		R/W	NV	Major alarm delay for circuit 27
247		R/W	NV	Major alarm delay for circuit 28
248		R/W	NV	Major alarm delay for circuit 29
249		R/W	NV	Major alarm delay for circuit 30
250		R/W	NV	Major alarm delay for circuit 31
251		R/W	NV	Major alarm delay for circuit 32
252		R/W	NV	Major alarm delay for circuit 33
253		R/W	NV	Major alarm delay for circuit 34
254		R/W	NV	Major alarm delay for circuit 35
255		R/W	NV	Major alarm delay for circuit 36
256		R/W	NV	Major alarm delay for circuit 37
257		R/W	NV	Major alarm delay for circuit 38
258		R/W	NV	Major alarm delay for circuit 39
259		R/W	NV	Major alarm delay for circuit 40
260		R/W	NV	Major alarm delay for circuit 41
261		R/W	NV	Major alarm delay for circuit 42
262 to 267				Reserved for MGE UPS SYSTEMS

Major alarm time delay for each output circuit.
This delay is expressed in seconds (from 0 to 65535 seconds).
The factory setting is 10 seconds.

#	Bit	R/W	NV	Description
268		W		Global circuit breaker rating
269		W		Global minor alarm threshold (%)
270		W		Global major alarm threshold (%)
271		W		Global minor alarm time delay
272		W		Global major alarm time delay
273 to 280				Reserved for MGE UPS SYSTEMS
281		R		Non-stored minor alarms
	0			60% < Current in circuit 01 < 80%
	1			60% < Current in circuit 02 < 80%
	2			60% < Current in circuit 03 < 80%
	3			60% < Current in circuit 04 < 80%
	4			60% < Current in circuit 05 < 80%
	5			60% < Current in circuit 06 < 80%
	6			60% < Current in circuit 07 < 80%
	7			60% < Current in circuit 08 < 80%
	8			60% < Current in circuit 09 < 80%
	9			60% < Current in circuit 10 < 80%
	10			60% < Current in circuit 11 < 80%
	11			60% < Current in circuit 12 < 80%
	12			60% < Current in circuit 13 < 80%
	13			60% < Current in circuit 14 < 80%
	14			60% < Current in circuit 15 < 80%
	15			60% < Current in circuit 16 < 80%
282		R		Non-stored minor alarms
	0			60% < Current in circuit 17 < 80%
	1			60% < Current in circuit 18 < 80%
	2			60% < Current in circuit 19 < 80%
	3			60% < Current in circuit 20 < 80%
	4			60% < Current in circuit 21 < 80%
	5			60% < Current in circuit 22 < 80%
	6			60% < Current in circuit 23 < 80%
	7			60% < Current in circuit 24 < 80%
	8			60% < Current in circuit 25 < 80%
	9			60% < Current in circuit 26 < 80%
	10			60% < Current in circuit 27 < 80%
	11			60% < Current in circuit 28 < 80%
	12			60% < Current in circuit 29 < 80%
	13			60% < Current in circuit 30 < 80%
	14			60% < Current in circuit 31 < 80%
	15			60% < Current in circuit 32 < 80%
283		R		Non-stored minor alarms
	0			60% < Current in circuit 33 < 80%
	1			60% < Current in circuit 34 < 80%
	2			60% < Current in circuit 35 < 80%
	3			60% < Current in circuit 36 < 80%
	4			60% < Current in circuit 37 < 80%
	5			60% < Current in circuit 38 < 80%
	6			60% < Current in circuit 39 < 80%
	7			60% < Current in circuit 40 < 80%
	8			60% < Current in circuit 41 < 80%
	9			60% < Current in circuit 42 < 80%
	10 to 15			Unused bits (all set to 0)
284		R		Non-stored major alarms
	0			Current in circuit 01 > 80%
	1			Current in circuit 02 > 80%
	2			Current in circuit 03 > 80%
	3			Current in circuit 04 > 80%
	4			Current in circuit 05 > 80%
	5			Current in circuit 06 > 80%
	6			Current in circuit 07 > 80%
	7			Current in circuit 08 > 80%
	8			Current in circuit 09 > 80%
	9			Current in circuit 10 > 80%
	10			Current in circuit 11 > 80%
	11			Current in circuit 12 > 80%

A value entered in the global parameters to enable the 42 (or 21) output circuits to be set to that value at the same time.

These bits go to 1 when the current in a corresponding output circuit is greater than the minor alarm threshold (60% in the example opposite) and less than the major alarm threshold (80% in the example opposite).
This state is not stored in memory.

These bits go to 1 when the current in a corresponding output circuit is greater than the major alarm threshold (80% in the example opposite).
This state is not stored in memory.

6. Appendices

#	Bit	R/W	NV	Description
	12			Current in circuit 13 > 80%
	13			Current in circuit 14 > 80%
	14			Current in circuit 15 > 80%
	15			Current in circuit 16 > 80%
285		R		Non-stored major alarms
	0			Current in circuit 17 > 80%
	1			Current in circuit 18 > 80%
	2			Current in circuit 19 > 80%
	3			Current in circuit 20 > 80%
	4			Current in circuit 21 > 80%
	5			Current in circuit 22 > 80%
	6			Current in circuit 23 > 80%
	7			Current in circuit 24 > 80%
	8			Current in circuit 25 > 80%
	9			Current in circuit 26 > 80%
	10			Current in circuit 27 > 80%
	11			Current in circuit 28 > 80%
	12			Current in circuit 29 > 80%
	13			Current in circuit 30 > 80%
	14			Current in circuit 31 > 80%
	15			Current in circuit 32 > 80%
286		R		Non-stored major alarms
	0			Current in circuit 33 > 80%
	1			Current in circuit 34 > 80%
	2			Current in circuit 35 > 80%
	3			Current in circuit 36 > 80%
	4			Current in circuit 37 > 80%
	5			Current in circuit 38 > 80%
	6			Current in circuit 39 > 80%
	7			Current in circuit 40 > 80%
	8			Current in circuit 41 > 80%
	9			Current in circuit 42 > 80%
	10 to 15			Unused bits (all set to 0)

Card MCM (general status and measurements)

The variables entered in registers 1 to 74 are whole numbers read on 16 bits.
The variables entered in registers 1 to 29 are also accessible in “floating” format on 32 bits (registers 257 to 314 in the “Float.” column of the table). The “floating” variables are read only.
Multiply each value in whole number format by the coefficient indicated in the “Coeff.” column of the table.

#	Bit	Float.	R/W	NV	Coeff.	Description
1		257/258	R/W	NV	0.1	Energy consumed in kWh (least significant bit of the word)*
2		259/260	R/W	NV	6553.6	Energy consumed in kWh (most significant bit of the word)*
3		261/262	R		0.1	Total active power in kW
4		263/264	R		0.1	Total reactive power in kVAR
5		265/266	R		0.1	Total apparent power in kVA
6		267/268	R		0.0001	Total power factor
7		269/270	R		0.01	Average of the phase-to-phase voltages in the 3 phases in V
8		271/272	R		0.01	Average of the phase-to-neutral voltages in the 3 phases in V
9		273/274	R		0.1	Average of the current in the 3 phases in A
10		275/276	R		0.01	Frequency in Hz
11		277/278	R		0.1	Active power for phase A in kW
12		279/280	R		0.1	Active power for phase B in kW
13		281/282	R		0.1	Active power for phase C in kW
14		283/284	R		0.0001	Power factor for phase A
15		285/286	R		0.0001	Power factor for phase B
16		287/288	R		0.0001	Power factor for phase C
17		289/290	R		0.01	Voltage between phase A and B in V
18		291/292	R		0.01	Voltage between phase B and C in V
19		293/294	R		0.01	Voltage between phase C and A in V
20		295/296	R		0.01	Voltage between phase A and the neutral in V
21		297/298	R		0.01	Voltage between phase B and the neutral in V
22		299/300	R		0.01	Voltage between phase C and the neutral in V
23		301/302	R		0.1	Current in phase A in A
24		303/304	R		0.1	Current in phase B in A
25		305/306	R		0.1	Current in phase C in A
26		307/308	R		0.1	Neutral current in A
27		309/310	R/W		0.1	Average total active power in kW*
28		311/312	R/W		0.1	Minimum total active power in kW*
29		313/314	R/W		0.1	Maximum total active power in kW*
30 to 36			R/W	NV		Reserved for MGE UPS SYSTEMS
37			R/W	NV		Alarms
	0					Stored overload alarms (bit set to 1). Reset by setting bit to 0.
	1 to 3					Unused bits (set to 0)
	4					Stored overvoltage alarms (bit set to 1). Reset by setting bit to 0.
	5 to 15					Unused bits (set to 0)
38 to 42			R/W	NV		Reserved for MGE UPS SYSTEMS
43 to 48			R			Reserved for MGE UPS SYSTEMS
49			R	NV		Alarms
	0					Non-stored overload alarms (bit set to 1).
	1 to 3					Unused bits (set to 0)
	4					Non-stored overvoltage alarms (bit set to 1).
	5 to 15					Unused bits (set to 0)
50 to 74						Reserved for MGE UPS SYSTEMS

*: Values valid since the last reset. Reset is carried out by writing a whole number value.

6. Appendices

6.5 Glossary

ALARM	Major alarm signalling that the current in the output circuit considered is higher than 80% of its rated value.
AUX ALARM INPUT	Alarm indicating either: ◗ excessive temperature rise in the isolation transformer, ◗ actuation of the remote shutdown function.
DOWN	Scroll button used to access previous measurement (metering mode) or setting (setup mode).
Isolation transformer	Optional transformer used to provide galvanic isolation between the distribution system and the output circuits, to block reinjection of third-order harmonics upstream or to create a neutral if the distribution system does not have one.
METER	Function button for access to the next measurements (metering mode) or to return to MONITORING mode (alarm or setup mode).
Output circuit	Single-phase circuit (phase, neutral and earth) exiting the **PMM** module, protected by a single standard circuit breaker (**PMM** module with 126 output circuits) or by a circuit breaker with earth-leakage protection (**PMM** module with 60 output circuits).
OVER CURRENT	Alarm indicating an overload on the **PMM** module.
OVER VOLTAGE	Alarm indicating that the voltage of the distribution system is too high.
PMM	Power Management Module (the device in question).
RS-232	Serial communication standard using a SUB-D 9-pin connector.
RS-485	Serial communication standard available via a screw-terminal block.
SELECT	Function button used to obtain a fixed display if autoscroll (parameter rotation) is activated, clear an alarm (alarm mode) or access the next parameter to be set (setup mode).
UP	Scroll button used to access next measurement (metering mode) or setting (setup mode).
WARNING	Minor alarm signalling that the current in the output circuit considered is between 60 and 80% of its rated value.

6.5 Index