

## **16KW CORE – PCM1602**

### **TECHNICAL DESCRIPTION**

#### **1 GENERAL DESCRIPTION**

The 16kW Core - PCM1602 is designed to convert AC mains voltage into 48 VDC and to supply telecom equipment with battery back up. It can be connected to up to eight 48V valve regulated lead-acid (VRLA) battery strings.

The 16kW Core - PCM1602 can house up to eight SMi2000HD rectifier modules. It provides the heart (Core) of a DC power system suitable for many applications. Systems can be customised for specific applications, simply by adding flexible distribution modules as required. Just add AC breakers and SPD's (Surge protection devices) and / or DC breakers according to customer requirements. Distribution modules can be stacked for an almost infinite variety of solutions.



The total power installed is 16kW but the total load power available is 14kW max.

The 16kW Core – PCM1602 is fitted with:

- Wiring and locations for up to eight SMi2000HD rectifier modules,
- 4 Rectifier motherboards (8 rectifiers slots),
- 1 ACMi1000HD alarm and control module,
- 1 Interface board,
- 2 Battery and load shunts PCB,
- 1 Low voltage disconnect contactor (LVD : 250A rated),
- Provision for option (LVLD),
- 1 Temperature probe,
- Fastening kit for battery stands & V2000.

The maximum available DC current depends on the number of installed SMi2000HD rectifiers. Refer to the SMi2000HD technical description.

The 16kW Core – PCM1602 can be installed on top of a battery rack, wall mounted or installed into an indoor or outdoor 19" cabinet.

## 2 STANDARDS

Safety	CE Low Voltage IEC 60950-1 UL 60950-1 compliant (pending) CSA 22.2
EMC	CE EMC Directives
Emission:	
Conducted	EN55022 class B
Radiated	EN55022 class B
Immunity:	
ESD	IEC/EN61000-4-2
Radiated 'E' field	IEC/EN61000-4-3
Fast transient	IEC/EN61000-4-4
Surge	IEC/EN61000-4-5
Conducted RF	IEC/EN61000-4-6
Radiated 'H' field	IEC/EN61000-4-8
Power Line Dips	IEC/EN61000-4-11
'ANSI' Surge	IEEE C62.41
Harmonics	IEC/EN61000-3-2
Flickers	IEC/EN61000-3-3
Telecom networks	ETSI EN 300 132-2 EN 300 386-2
Environment	ETSI EN 300 019-2 ROHS compliant

### 3 CHARACTERISTICS

#### 3.1 ENVIRONMENTAL CHARACTERISTICS

<b>Temperature</b>	
Operating	- 20°C to + 70°C (start up to – 40°C)
Shipping and storage	- 40°C to + 85°C
<b>Relative humidity</b>	
Operating	5 to 95% RH non-condensing
Storage	5 to 95% RH non-condensing (not exceed 40g water vapour / m <sup>3</sup> of air)
<b>Cooling</b>	Natural convection
<b>Altitude</b>	- 60 m to + 2500 m

#### 3.2 MECHANICAL CHARACTERISTICS

Height	177.8 mm
Width	447.0 mm
Depth	435.0 mm
Weight	15 kg*
Access	Front and top
Cable entry	Internal connecting by OEM
Degree of protection	IP20**

\* Typical

\*\* With top cover option

#### 3.3 ELECTRICAL CHARACTERISTICS

<b>AC Input</b>	
Nominal Voltage	Single phase 230V AC Three phases + neutral 400V AC
Voltage range:	
Full power	180 to 300V AC
Reduced power	90 to 180V AC
Leakage current	$3.5 < I < 20 \text{ mA}^*$
Frequency Range	45 to 66Hz
Maximum current	See SMi2000HD technical description
Protection	See SMi2000HD technical description

\* Pending mains configuration and quantity of installed rectifiers.

<b>DC Output</b>	
Nominal voltage	48V DC
Output power rating	Depending upon the number of SMi2000HD (see SMi2000HD technical description) up to 16kW
Protection: SMi2000HD System	See SMi2000HD technical description Battery and load MCB protections
Current sharing	± 5% of maximum current from 10% to 100% load

<b>Others specifications</b>	
Dielectric strength	4.2kV DC (3.0kV AC) – Input and output 2.1kV DC (1.5kV AC) – Input and earth 0.7kV DC (0.5kV AC) – Output and earth

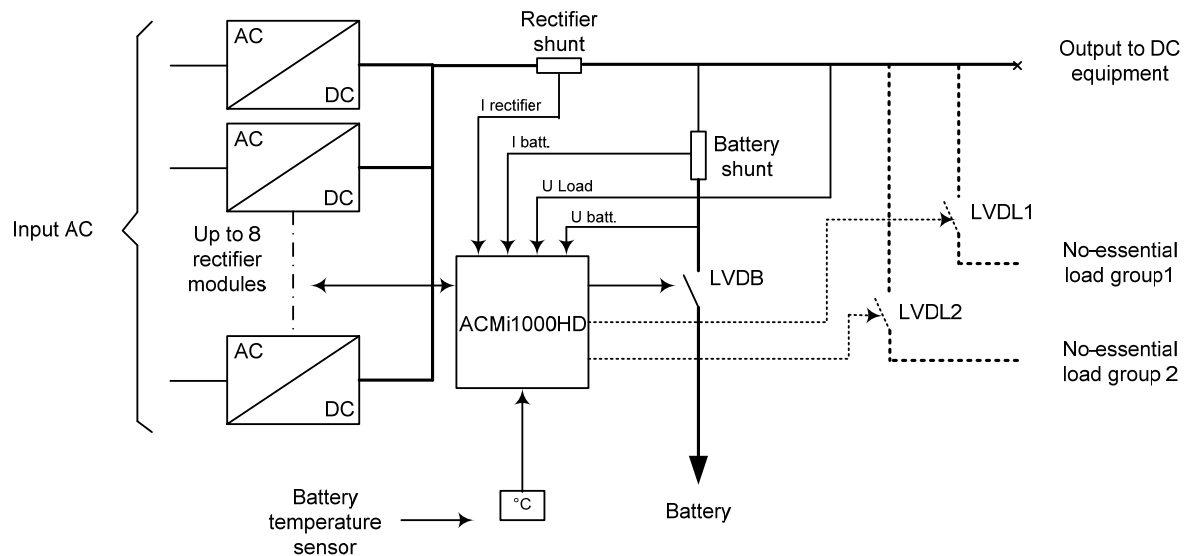
<b>Monitoring</b>	
Controller unit	See ACMi1000HD technical description
Main Functionalities	Control and monitoring of digital rectifier module Battery charging process Battery test Battery protection Load management Alarm detection and reporting Communication for monitoring and configuration Local Man / Machine Interface for monitoring and configuration.
Local	Menu managed by joystick and LCD display
Visual indications: SMi2000HD System	See SMi2000HD technical description See ACMi1000HD technical description
Digital input spare	2
Alarm relays	3 configurable relays
Measurements	Load current Battery current Ambient temperature Load voltage Battery voltage
Alarms	Low or high Mains voltage alarm Rectifier alarm Load protection alarm Battery protection alarm Low battery voltage alarm Very low battery voltage alarm Outage no-priority load alarm Test battery alarm Temperature alarm Sensor alarm

## 4 OPTIONS

The 16kW Core – PCM1602 system is designed to integrate more options inside the rack. The available options are differentiated by their class.

Class	Equipment	Designation
Output protection	Non-Priority Load group 1 Disconnect (LVDL1)	Non-Priority Load disconnect contactor
	Non-Priority Load group 2 Disconnect (LVDL2)	Non-Priority Load disconnect contactor
Battery Protection	Low Voltage Battery disconnect override (LVDB) system	Low Voltage Battery Disconnect override switch
Metalwork	Top cover	

## 5 SYNOPTIC



## 6 PACKAGING AND PRODUCT REFERENCE

### 6.1 PACKAGING

In carton.

### 6.2 PACKING TABLE

16kW Core – PCM1602 packed dimensions and weight		
W x D x H	mm	570 x 540 x 350
Gross Weight	kg	17
Volume	m <sup>3</sup>	0.108

### 6.3 PRODUCT REFERENCE

Product reference	H&S Part No.
16kW Core – PCM1602	B05368610000

## 7 SUPPLIER

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Harmer & Simmons offers installation, customization and technical support services.  
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