

MP160

TECHNICAL DESCRIPTION

1 GENERAL DESCRIPTION

The MP160 system is designed to convert AC mains voltage into 48 VDC and to supply telecom equipments with back up time.

The MP160 can house up to eight SM2000 rectifier modules and can be associated with up to eight 48 V valve regulated lead-acid (VRLA) battery strings.

The total power installed is 16 KW but the total load power available is 13.6 KW max (limited at 10.8 KW in battery backup operation).

The MP160 rack is fitted with:

- Wiring and locations for up to eight SM2000 rectifier modules,
- One ACM1000 alarm and control module,
- A low voltage disconnect contactor (LVD : 250 A rated),
- Battery and load shunts,
- Battery protections (2 ×250 A rated fuses),
- Eight load protection single-pole circuit breakers (2×6A, 2×32A, 2×63A, 2x80A curve C)
- A temperature probe.



The maximum DC current available depends on the installed SM2000 number: refer to the SM2000 data sheet.

The MP160 can be installed on the top of a battery rack, wall mounting or in a 19" cabinet.

The system allows an easy extension on site by additional battery string(s), rectifier module(s) and single-pole circuit breakers (≤ 80 A).

2 STANDARDS (CE MARKING)

➤ **Safety**

EN 60950-1.

➤ **EMC**

Emission:

EN 55022 level B

- . complies with EN 61000.6-3 (generic residential)
- . complies with EN 61000.6-4 (generic industrial)
- . complies with EN 61000.3-2 (harmonics)
- . complies with EN 61000.3-3 (flicker)

Immunity:

- . complies with EN 61000.6-1 (generic residential)
- . complies with EN 61000.6-2 (generic industrial)
- . standards from EN 61000.4-2 to EN 61000-4-6
- . standard EN 61000.4-11

Telecom standard

- . EN 300 386.

➤ **Environmental conditions:**

Complies with EN 300 019

- . Transport EN 300 019-1-2 class 2.2
- . Storage EN 300 019-1-1 class 1.2
- . Operation EN 300 019-1-3 class 3.1E

➤ **Operating conditions:**

Complies with EN 300 132-2 (Telecom standard).

3 CHARACTERISTICS

3.1 ENVIRONMENTAL CHARACTERISTICS

➤ **Temperature**

- Shipping and storage : -40°C to + 85°C.
- Operating : -5°C to +45°C.

➤ **Humidity**

- Shipping and storage : 10 to 95%.
- Operating humidity : 20 to 90% relative humidity non-condensing.

- **Altitude**
 - Operating : 0 - 1000 m (above, power derating of 1% each 100 m, up to 3000 m)
- **Cooling**
 - The rectifier modules are forced air cooled.

3.2 MECHANICAL CHARACTERISTICS

- Height: 9 U (1 U= 44.45 mm).
- Width: 450 mm.
- Depth: 390 mm (415 mm overall).
- Weight: < 30 kg (without rectifier module).
- Colour: RAL 7043
- Degree of protection: IP 20.
- Access: front.
- Cable entry : rear side.

3.3 ELECTRICAL CHARACTERISTICS

DIELECTRIC STRENGTH	
AC line to output	4200 VDC (3000 Vrms)
AC line to chassis	2100 VDC (1500 Vrms)
Output to chassis	700 VDC (500 Vrms)
INPUT	
Nominal voltage	<i>Single-phase mains:</i> 208 Vrms / 220 Vrms / 230 Vrms / 240 Vrms <i>Three-phase + neutral mains:</i> 380 Vrms / 400 Vrms / 415 Vrms
Normal operating range	208 V to 280 Vrms <i>Phase / neutral.</i>
Exceptional range without damage	80 V to 280 Vrms <i>Phase / neutral with:</i> <ul style="list-style-type: none"> • power derating below 208 Vrms • automatic disconnect on low (< 80 V) and high (> 280 V) voltage out of range with automatic re-start.
Frequency	44 to 66 Hz
Nominal current	9.5 A per rectifier for 2000 W at 230 Vrms
Inrush current	< 20 A peak per rectifier
Power factor	> 0.99
AC network (earthing system)	TT, TN, IT
OUTPUT	
Nominal voltage	48 VDC Remotely by 2-8 V voltage loop. Adjustment range: 42 V to 58 V.
Floating voltage	Adjustable between 52 VDC and 58 VDC
Maximum power available at normal operating input voltage	2000 W up to 45°C ambient temperature, per rectifier module
Current sharing	< ± 5% at $P > P_n/2$
EFFICIENCY	
> 90% typical, when each rectifier loaded more than 50%. Mains input at nominal and Vout = 54 VDC.	

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4 INDICATORS AND ALARMS

4.1 INDICATORS ON ACM1000 AND SM2000

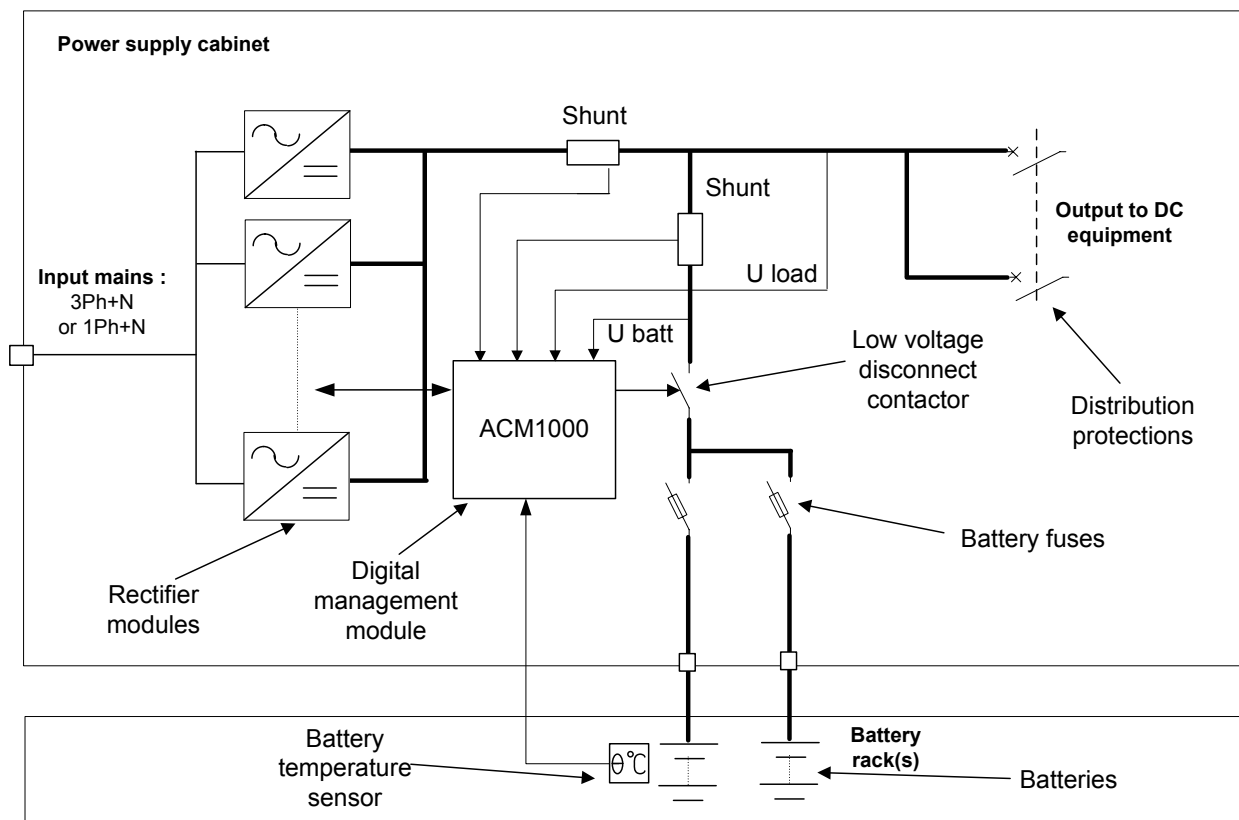
Refer to the corresponding Technical Descriptions.

4.2 ALARM LOOPS

The following alarms, delivered by the ACM1000, are available across volts-free contacts on screw terminal connector:

- Mains off
- Urgent alarm
- Non-urgent alarm
- Spare.

5 SYNOPTIC



6 PACKAGING AND PRODUCT REFERENCE

6.1 PACKAGING

In carton.

6.2 PACKING TABLE

<i>MP160 complete system packed dimensions and weight</i>		
W x D x H	mm	
Gross Weight	kg	
Volume	m ³	

6.3 PRODUCT REFERENCE

Designation	SPS's Code
MP160 complete system equipped with: 2 SM2000 + 1 ACM1000 + 1 DC kit for one battery string connection	B05362990000

7 ASSOCIATED PRODUCTS

Designation	SPS's Code
SM2000 48 V rectifier module	B1801011000B
ACM1000 module	B05363000000
Heavy battery rack 2 shelves with galvanized frames	B05361930000
Mains surge protection (Type 2 – Class C) <i>-Option-</i>	TBA
Mains voltage and neutral opening protection <i>-Option-</i>	TBA

8 SUPPLIER

SAFT Power Systems
 10, rue Jean Perrin BP359
 37173 Chambray Les Tours Cedex
 FRANCE
 Phone : 33(0)247808860
 Fax : 33(0)247280719

Internet : www.powersupplysystems.com

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 Contact your local re-seller.

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5 / 5