

MTPi2000HP - 160 kW (RANGE)**TECHNICAL DESCRIPTION****1 GENERAL DESCRIPTION**

The MTPi2000HP - 160 kW system is designed to convert AC mains voltage into 48 VDC and to supply telecom equipments with back up batteries.

The MTPi2000HP - 160 kW can house up to eighty SMi2000HD rectifier modules and can be associated with 48 V valve regulated lead-acid (VRLA) battery strings.

The MTPi2000HP - 160 kW system is composed of two or three cabinets, as follows:

-1 cabinet "Master rectifier" 160 kW, with:

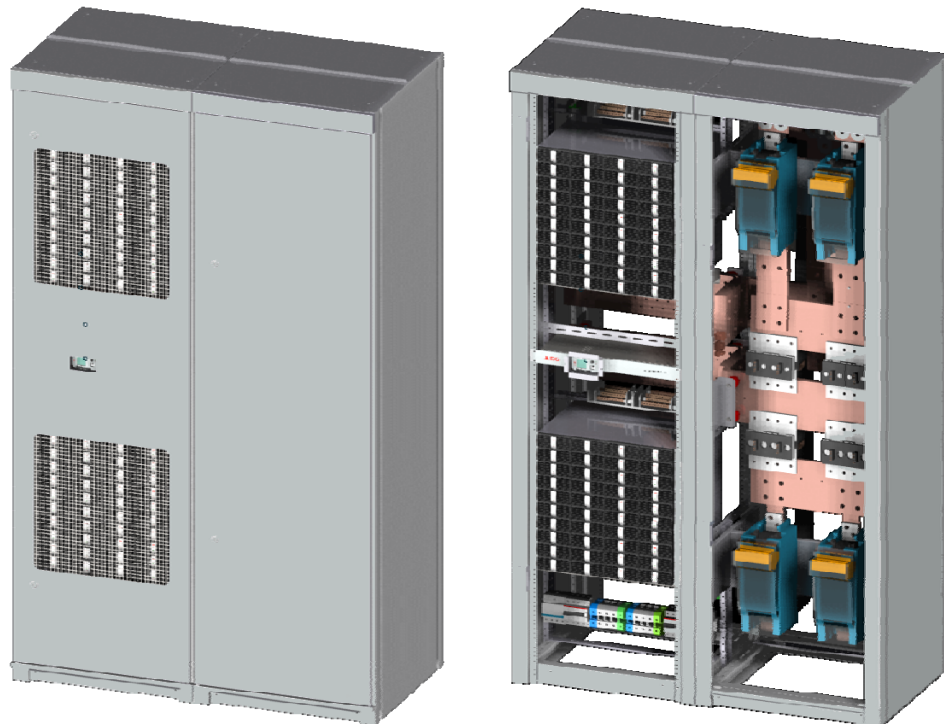
- Mains 3Ph+N connection,
- Wiring and space for up to eighty SMi2000HD rectifiers,
- One ACMi1000HD alarm and control module,

-1 cabinet "Battery / Load protection", with:

- Low voltage disconnect contactor (LVD : 2700 A rated),
- Battery shunt,
- Protections: two fuses NH4 (up to 1250 A) for battery protections,
two fuses NH4 (up to 1250 A) for battery or load protections

-1 cabinet "Distribution", with:

- Load protections: Configured to customer requirements,



Example of configuration: MTPi2000HP - 160 kW in 1 cabinet "Master rectifier" + 1 cabinet "Battery / Load protection"
(On the right: front view without the doors)

***MTPi2000HP - 160 kW* TECHNICAL DESCRIPTION**

2 STANDARD OPTIONS

The following standard options are available:

- **Mains:**
 - Flexible mains grid connection 3 Ph+N / 3 Ph.
 - Mains input MCB / Mains switch.
 - Surge Protective Device (SPD).
 - Over Voltage Protection - Loss of neutral protection module (OVP).
- **Protection devices:**
 - Battery protections (fuses; Standard qty = 2; maximum is 4).
 - NH4a fuses (1600 A max.) instead of NH4 fuses (1250 A max.).
 - Load distribution protections (fuses or circuit breakers, with or without trip monitoring).
 - Non Priority Load Disconnect (NPLD).
 - Magnetically latched contactors (LVD/PLD).
- **Mechanicals:**
 - Door (anti clockwise).
 - Extension distribution cabinet (coupled).
 - Seismic cabinet.
 - Lifting bolts.
- **Communication:**
 - Ethernet / TCP-IP.
 - Modem (PSTN, GSM).
 - RS485.
- **Miscellaneous:**
 - T° probe > 10 m (up to 30 m).
 - Emergency shutdown.
 - AC Inverter.

3 OTHER OPTIONS

Specific requirements may be installed (subject to application engineering).

4 STANDARDS

- **Safety:**
 - EN 60950-1, UL/CSA 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
 - . 'ANSI' surge C62.41
 - Telecom standard
 - . EN 300 386 – 2

- **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 3.1

- **Operating conditions:**
 - . Complies with EN 300 132-2 (Telecom standard).

5 CHARACTERISTICS

5.1 ENVIRONMENTAL CHARACTERISTICS

- **Temperature**
 - Shipping and storage : -40 °C to +85 °C.
 - Operating : -25 °C to +45 °C.

- **Humidity**
 - Shipping and storage : 5 to 95% relative humidity non-condensing.
 - Operating humidity : 5 to 95% relative humidity non-condensing.

- **Altitude**
 - Operating : 0 - 2500 m without power derating.

- **Cooling**
 - Forced air cooling with electronic speed control.

5.2 MECHANICAL CHARACTERISTICS (FOR 1 CABINET)

- Height : 2000 mm.
- Width : 600 mm.
- Depth : 600 mm.
- Weight : Master rectifier = 240 kg (subject to options fitted)
 Battery/Load protection = 250 kg (subject to options fitted)
 Distribution = 250 kg (subject to options fitted)
- Degree of protection : IP 20.
- Access : Front.
- Cable entry : Top.

5.3 ELECTRICAL CHARACTERISTICS

MTPi2000HP-160kW SYSTEM	
Rectifier maximum output power	160 kW (3336 A @ 48 V)
Load / Battery maximum output power	117 kW (2700 A @ 43.2V)
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	Three-phase + neutral mains: 380 Vrms / 400 Vrms / 415 Vrms
Normal variations	180 V to 264 Vrms Phase / neutral.
Exceptional variations	90 V to 300 Vrms Phase / neutral with: . power de-rating below 180 Vrms . automatic disconnect on low (< 90 V) and high (> 300 V) voltage out of range with automatic re-start.
Frequency	45 to 66 Hz
Nominal current	9.5 A per rectifier for 2000 W at 230 Vrms
Inrush current	< 40 A (for only one rectifier)
Power factor	0.98 typical
OUTPUT	
Nominal voltage	48 VDC Remotely by CAN loop. Adjustment range: 42 V to 57 V.
Floating voltage	Adjustable between 48 VDC and 57 VDC
Maximum power	2000 W up to 75°C ambient temperature, per rectifier module (automatic de-rating above 55°C)
Current sharing	< ± 5% at P > Pn/2
RECTIFIER EFFICIENCY	
92%	

6 INDICATORS AND ALARMS

6.1 INDICATORS ON ACMi1000HD AND SMi2000HD

Refer to the corresponding data sheets.

6.2 ALARM LOOPS

The following alarms, delivered by the ACMi1000HD, are available across volts-free contacts on screw terminal connector:

- Mains off
- Urgent alarm
- Non-urgent alarm
- Spare: 3 alarm loops (configured to customer requirements).

7 PACKAGING AND PRODUCT REFERENCE

7.1 PACKAGING

Carton case, filmed, on pallet.

7.2 PACKING TABLE

<i>MTPi2000HP - 160 kW rectifier cabinet</i> packed dimensions and weight		
W x D x H	mm	720 x 720 x 2200
Gross Weight	kg	250 kg (subject to options fitted)
Volume	m ³	1.14

<i>MTPi2000HP - 160 kW Battery / Load protection cabinet</i> packed dimensions and weight		
W x D x H	mm	720 x 720 x 2200
Gross Weight	kg	260 kg (subject to options fitted)
Volume	m ³	1.14

<i>MTPi2000HP - 160 kW Distribution cabinet</i> packed dimensions and weight		
W x D x H	mm	720 x 720 x 2200
Gross Weight	kg	260 kg (subject to options fitted)
Volume	m ³	1.14

MTPi2000HP - 160 kW TECHNICAL DESCRIPTION

7.3 PRODUCT REFERENCE

Designation	AEG's Code
MTPi2000HP - 160 kW "Rectifier cabinet "	Customer specific
MTPi2000HP - 160 kW "Battery / Load protection"	Customer specific
MTPi2000HP - 160 kW "Distribution"	Customer specific

8 ASSOCIATED PRODUCTS

Designation	AEG's Code
SMi2000HD rectifier module	3AW01177ACAA
Supervision:	
ACMi1000HD controller (controller & display)	3AW17197ABAA
ACMi1000HD-1U with TCP-IP (complete 1U rack)	B05370841000
ACMi1000HD-1U without TCP-IP (complete 1U rack)	3TN00003AAAA
WINi1000 supervision software	B00821920000

9 SUPPLIER

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