MTPi2000C - 40 kW (RANGE)

TECHNICAL DESCRIPTION

1 GENERAL DESCRIPTION

The MTPi2000C - 40 kW system is designed to convert AC mains voltage into 48 VDC and to supply telecom equipments with back up batteries.
The MTPi2000C - 40 kW can house up to twenty SMi2000HD rectifier modules and can be used with 48 V valve regulated lead-acid (VRLA) batteries strings.

The maximum total power that can be used is 40 kW.

The MTPi2000C - 40 kW is fitted with:

- Mains 3Ph+N connection,
- Wiring and spacer for up to twenty SMi2000HD rectifiers,
- One ACMi1000HD alarm and control module,
- A battery low voltage disconnect contactor (LVD : 800 A rated),
- Battery shunt,
- Battery protections: two fuses NH4 (up to 800 A), or four fuses NH2 (up to 400 A), or configured to customer requirements,
- Load protections: Configured to customer requirements.

Example of configuration: MTPi2000C - 40 kW in 600 x 600 x 2000 cabinet (On the right: front view without the door)

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).
  Load distribution protections (fuses or circuit breakers, with or without trip monitoring).
  Non Priority Load Disconnect (NPLD).
  Magnetically latched contactors (LVD/PLD).

- **Mechanicals:**
  Self-supporting cabinet 1700 mm.
  Door (anti clockwise).
  Extension distribution cabinet (coupled).
  Seismic cabinet.
  Lifting bolts for crane transportation.

- **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

- Height : 2000 mm.
- Width : 600 mm.
- Depth : 600 mm.
- Weight : 170 kg (subject to options fitted).
- Degree of protection : IP 20.
- Access : Front.
- Cable entry : Top.

5.3 ELECTRICAL CHARACTERISTICS

MTPi2000C-40kW SYSTEM	
Rectifier maximum output power	40 kW (834 A @ 48 V)
Load / Battery maximum output power	34.5 kW (800 A @ 43.2 V)
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

MTPi2000C - 40 kW cabinet **packed dimensions and weight**		
W x D x H	mm	720 x 720 x 2200
Gross Weight	kg	180 kg (subject to options fitted)
Volume	m^3	1,14

7.3 PRODUCT REFERENCE

Designation	AEG's Code
MTPi2000C - 40 kW	Customer specific

8 ASSOCIATED PRODUCTS

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

9 SUPPLIER

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