

***MTPi2000C - 24 kW (RANGE)*****TECHNICAL DESCRIPTION****1 GENERAL DESCRIPTION**

The MTPi2000C - 24 kW system is designed to convert AC mains voltage into 48 VDC and to supply telecom equipments with back up batteries.

The MTPi2000C - 24 kW can house up to twelve 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 24 kW.

The MTPi2000C - 24 kW is fitted with:

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



Example of configuration: MTPi2000C - 24 kW in 600 x 600 x 2000 cabinet (On the right: front view without the door)

***MTPi2000C - 24 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).
  - 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 : 140 kg (subject to options fitted).
- Degree of protection : IP 20.
- Access : Front.
- Cable entry : Top.

### 5.3 ELECTRICAL CHARACTERISTICS

| <b><i>MTPi2000C-24kW SYSTEM</i></b> |  |
|-------------------------------------|--|
| Rectifier maximum output power      | 24 kW (500 A @ 48 V)   |
| Load / Battery maximum output power | 17.3 kW (400 A @ 43.2 V)   |
| <b><i>DIELECTRIC STRENGTH</i></b>   |  |
| AC line to output                   | 4200 VDC (3000 Vrms)   |
| AC line to chassis                  | 2100 VDC (1500 Vrms)   |
| Output to chassis                   | 700 VDC (500 Vrms)   |
| <b><i>INPUT</i></b>                 |  |
| Nominal voltage                     | Three-phase + neutral mains:<br>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: <ul style="list-style-type: none"> <li>. power de-rating below 180 Vrms</li> <li>. automatic disconnect on low (&lt; 90 V) and high (&gt; 300 V) voltage out of range with automatic re-start.</li> </ul> |
| 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   |
| <b><i>OUTPUT</i></b>                |  |
| Nominal voltage                     | 48 VDC<br>Remotely by CAN loop.<br>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   |
| <b><i>RECTIFIER EFFICIENCY</i></b>  |  |
| 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>MTPi2000C - 24 kW cabinet</i> packed dimensions and weight |                |                                    |
|---|----------------|------------------------------------|
| W x D x H   | mm             | 720 x 720 x 2200                   |
| Gross Weight  | kg             | 150 kg (subject to options fitted) |
| Volume  | m <sup>3</sup> | 1,14                               |

### 7.3 PRODUCT REFERENCE

| Designation       | AEG's Code        |
|-------------------|-------------------|
| MTPi2000C - 24 kW | 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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