



## Monitoring Unit



- Wide measuring and supply voltage range
- Easy programming via RS232-interface with PC
- Wide range of monitoring and signalling functions
- Temperature compensation of the charge voltage for PSR- and PSS-rectifiers
- Alphanumeric LCD display for measuring values and system parameters
- CAN-bus interface
- Remote control via modem interface (optional)

The monitoring, controlling and signalling unit MU2000C is applicable especially to power supply systems with combined battery backup. Together with CAN-bus connected PSR- and PSS-rectifiers all main system parameters can be controlled and indicated. Battery monitoring and test, boost charge controlling, earth fault monitoring, low battery voltage protection (contactor controlling), analogue measuring inputs for three DC voltages and three DC currents, with temperature compensation of the charge voltage, 8 digital inputs and parameter programming via RS232 interface and PC are examples of the extensive standard functions.

In order to monitor and control PSR- and PSS-rectifier modules the MU2000C uses a CAN-bus interface. No money and time wasting in the wiring of signalling contacts within the power supply system and between single modules anymore. The output measuring values and the operation state of all CAN-bus connected rectifiers, DC/DC-converters and inverters are shown in the alphanumeric display.

The digital inputs of the unit can be used for monitoring of internal or external signal contacts (for example fuse monitoring). The reading of all inputs is individually programmable. Different relay outputs (with extension board MU2000C-I/O in total 10) are available for remote signalling of single or general faults. Single faults and their connections can be assigned to each relay output.

In addition to internal text messages various front side LED's indicate the state of main system parameters ( 2 LED's are free programmable).

For remote control and maintenance a modem interface is available (optional). In case of system faults the modem automatically calls to a pre-programmed phone number to send a fault message direct to the system operator.

TYPE LISTING		
Type	MU2000C-I	MU2000C-II
Code-Nr.	C24-1111	C24-1122
Category	Microprocessor based controlling, monitoring and signalling unit	

POWER SUPPLY / MEASURING RANGE		
Input voltage	18-80 V	80-300 V
Measuring voltage	18-80 V	80-300 V
Input power consumption	appr. 3 W	

ANALOGUE MEASURING INPUTS	
Voltage inputs	8 accuracy 1% 3 x mains voltage and frequency (with option MU2000C-MM only ) temperature in case of connected temperature sensor
Current inputs	4 (1 x $\pm$ 60 mV ) 3 x mains current ( option MU2000C-MM)
Temperature input	3 (for connection with temperature sensor LM335)
PE - connector	2 isolation fault

DIGITAL MEASURING INPUTS	
Signalling inputs	8 (free programmable indication with definition)

STANDARD FEATURES	
Alphanumeric display	LCD, 2x32 characters, rear illuminated
LED indications	operating, alarm A, alarm B, $U < U_{min}$ , $U > U_{max}$ , $T > T$ , isolation fault, collective fault Signal 1-3 (free programmable) can communication
Relay outputs	4 relay contacts, error messages free programmable, extension to 10 free programmable relays (with option: MU2000C-I/O)
Configuration / interfaces	RS232 interface, CAN interface
Communication	CAN-bus interface for communication with PSS/PSR-rectifier modules, UNV – inverter modules and UNB modules RS232 interface for remote modem control (optional) and programming via PC SNMP via Ethernet
Functions	boost charge controlling (current-, voltage- and time dependent) battery test (voltage- and time dependent) controlling of voltage drop-down diodes; battery low protection battery midpoint voltage monitoring 2x isolation fault monitoring Free programmable thresholds as written message
Microprocessor controlling	programmable monitoring functions with history function, real time clock, device parameters via front keys and alphanumeric display
Languages	German, English,

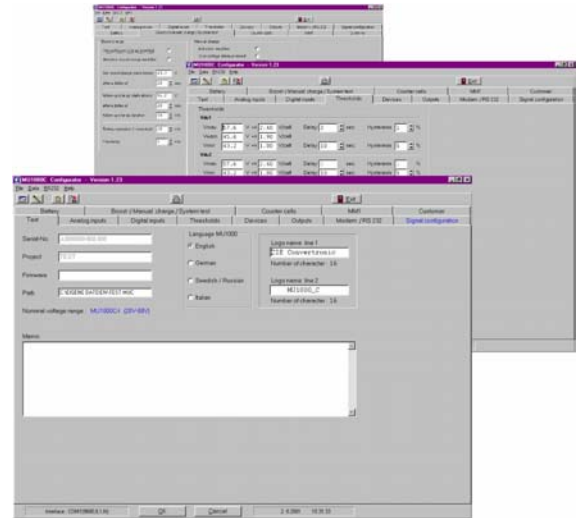
ENVIRONMENT	
Ambient temperature	Operation: -10°C to +40°C Storage: -30°C to +50°C
Climatic conditions	IEC 721-3-3 class 3K3/3Z1/3B1/3C2/3S2/3M2
Humidity class	F
Altitude	$\leq$ 1000 m a.s.l., extension possible
Audible noise	< 30 dB (A) in 1 m distance



## Monitoring Unit

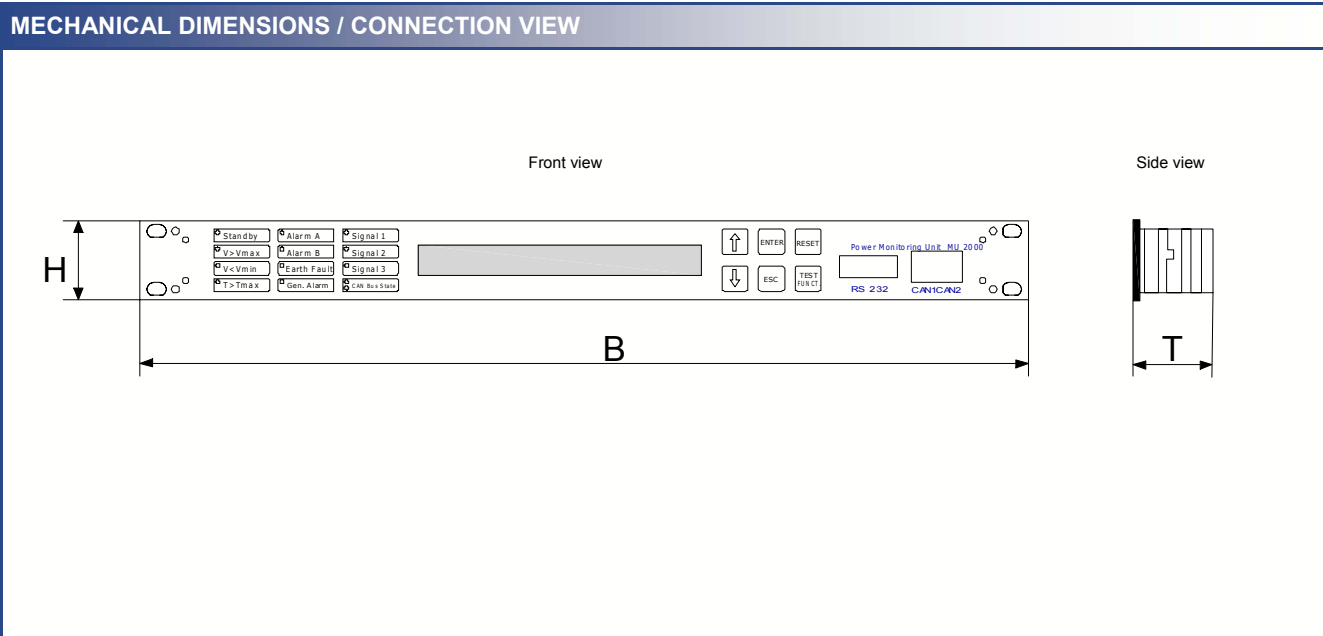
MECHANICAL CONSTRUCTION	
Construction	built-in module for front panel mounting, rear side connectors
Dimensions W / H / D (mm)	483 / 45 / 120
Weight	appr. 3 kg
Protection class	IP20 (mech.); 1 acc. to EN 60950 (electr.)
Surface	front panel RAL 7032

COMPLIANCES	
Certification	CE-mark
Safety	EN 60950; VDE 0100 part 410; VDE 0110, EN 50178, EN 60146
EMC	EN 55022 class „B“, EN 61000-4 part 2-5



### Options:

- Temperature sensor LM335 with 2 m cable and cable shoe
- Software MU2000C-configurator for parameters
- Extension board MU2000C-MM for 1-phase or 3-phase mains controlling (voltage, frequency and current), IP00
- Extension board MU2000C-I/O for 6 additional potential-free outputs and 8 digital inputs (free programmable), IP20
- Extension board MU2000C-BM for 2nd and 3rd battery circuit (battery voltage, unsymmetrical measuring, and battery charge/discharge current), IP20
- MU2000C-CM, software modem, module incl. V90 modem for data transfer
- MU2000C-SNMP, network interface for direct connection to an ethernet network for remote maintenance
- CAN distribution board, board with 5 CAN sockets for connection to power supply modules in the cabinet



### Additional Information

Full information, drawings, manuals and application notes and advice to any of the wide range of CP Kontakt AB's products are available on request.

CP Kontakt AB reserve the right to change the specification, product design and parameters at any time, without notice.

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