Film Capacitors – Power Factor Correction

Multi-Measuring-Interface MMI7000

Series/Type: **MMI7000**
Ordering code: **B44066M7…E230**

Date: June 2010
Version: 1

Characteristics

- Measuring device for three-phase measuring and display of numerous grid parameters:
  - Voltage 3-phase
  - Current 3-phase
  - Frequency 3-phase
  - Active power 3-phase
  - Reactive power 3-phase
  - Apparent power 3-phase
  - Power factor 3-phase
  - Energy
  - Harmonic of voltage up to 51st
  - Harmonic of current up to 51st
  - THD-V 3-phase
  - THD-I 3-phase

- LCD full graphic display

- Switchboard installation housing

- Three versions available:
  - MMI7000-B (basic version)
  - MMI7000-S (including two independent interfaces RS485)
  - MMI7000-E (extended version with additional interface, memory card and additional in- and outputs)

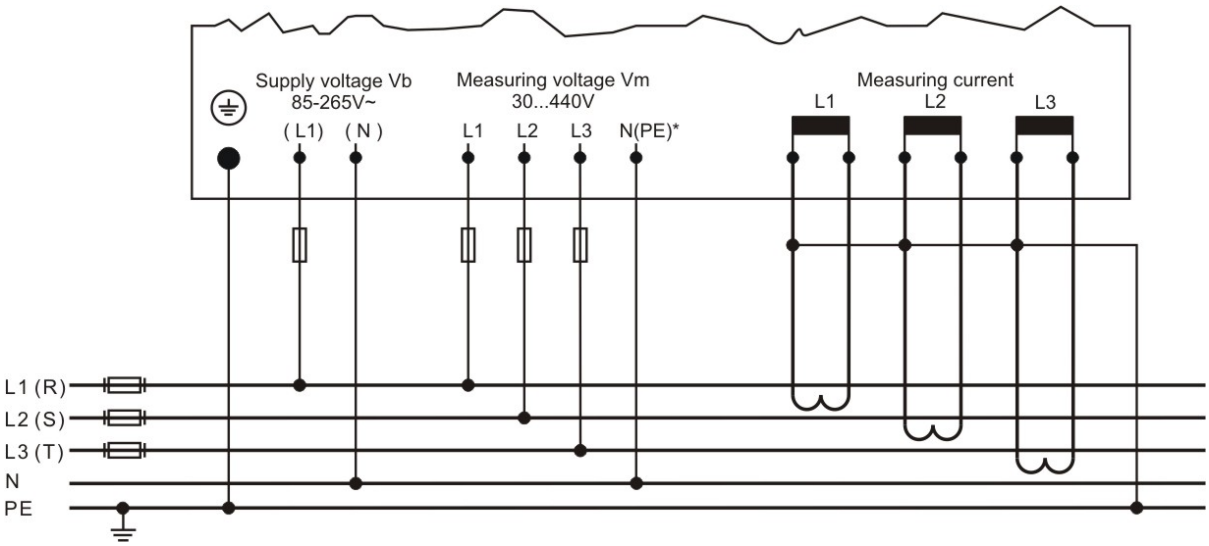
Technical data and specifications

Operating voltage	110 … 230 V AC +/- 15%
Measuring voltage (3-phase)	30 … 440 V AC (L-N) 50 … 690 V AC (L-L)
Measuring current (3-phase)	X:1A / X:5A
Rated frequency f_R	50 and 60 Hz
Power consumption	< 5 VA
Sensitivity	50 mA / 10 mA

Operation and display	
Menu languages	English/German/Russian/Spanish/Turkish
Display/display functions	Illuminated full graphic display 128 x 64 dots
Display of grid parameters as real value/ in %/ as bar chart	3-phase cos-φ, V, I, F, Q, P, S. THD-V, THD-I, W
Large display of 3 grid parameters	Selection in Display Editor
Display of harmonics	3^{rd} – 51^{st} harmonic of voltage and current also as bar chart
Osci-mode	Available
Accuracy	Current/voltage: 1% Real power, reactive power, apparent power: 2%
Integrated help function with HELP-button	Context dependent, plain menu
Storage functions with time stamp	
Storage of minimum values, maximum values	Voltage, current, real power, reactive power, apparent power, THD-V, THD-I, frequency, temperatures
Storage of operation time	2 counters
Additional functions MMI7000-E	
Control inputs	1 potential free signal input 110 … 230 V AC
Switching outputs (freely programmable)	4 potential free relay outputs (max 250 V/1000 W) 1 potential free transistor output (max 60 V/40 mA)
Interface	1 x RS485 (Modbus RTU)
Pluggable SD-Card for storage of all grid parameter accord. pre-set measuring interval (included in the delivery)	Voltage, current, real power, reactive power, apparent power, temperature, frequency, THD-V, THD-I, energy, single harmonic of voltage and current
Recording time per data file at measuring interval 1 / 10 / 60 sec./ 15 min.	18 hours / 7 days / 48 days / 720 days
Software for PC	Comfortable software (CD) for display and evaluation of recorded measuring values

Miscellaneous	
Housing MMI7000-B MMI7000-S / MMI7000-E	Switchboard installation housing DIN 43700 / IEC61554 144 x 144 x 35 mm 144 x 144 x 60 mm
Weight	Ca. 1 kg
Operating ambient temperature	-10 … +50 °C
Storage temperature	-20 … +60 °C
Degree of protection according IEC60529	Front: IP54 Rear: IP20
Protection class	I (devices with protective earth conductor)
Safety regulations	IEC61010-1:2001, EN61010-1:2001
EMV interference resistance	IEC61000-4-2: 8 kV; IEC61000-4-4: 4 kV
Ordering codes	
MMI7000-B	B44066M7100E230
MMI7000-S	B44066M7200E230
MMI7000-E	B44066M7300E230

Connecting diagram MMI7000-B



Cautions and warnings

General

- The MMI7000 may only be used for the purpose it has been designed for.
- The device has to be projected in such a way that in case of any failure no uncontrolled high current and voltages may occur.
- The device in operation has to be protected against moisture and dust, sufficient cooling has to be assured.
- Please note that the device is under high tension during operation.
- The MMI7000 may only be used indoor. It is not suitable for outdoor applications.
- Voltages above the permitted voltage range may damage the device.

Attention

FAILURE TO FOLLOW CAUTIONS MAY RESULT, WORST CASE, IN PREMATURE FAILURES OR PHYSICAL INJURY.

Note

For detailed information about PFC capacitors and cautions, refer to the latest version of EPCOS PFC Product Profile.

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