



Film Capacitors – Power Factor Correction

Grid analysis tool

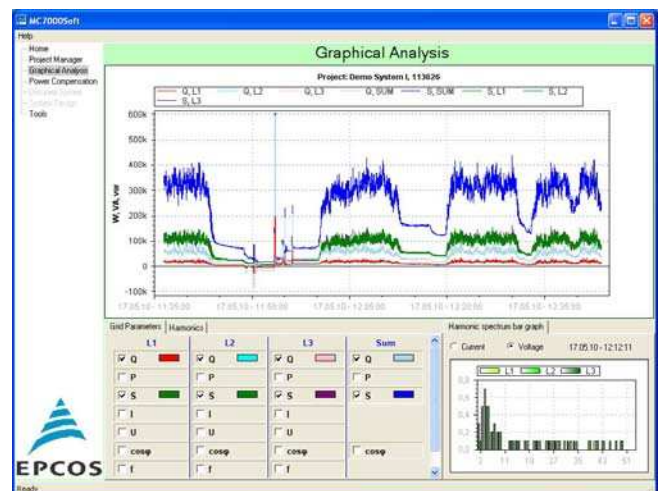
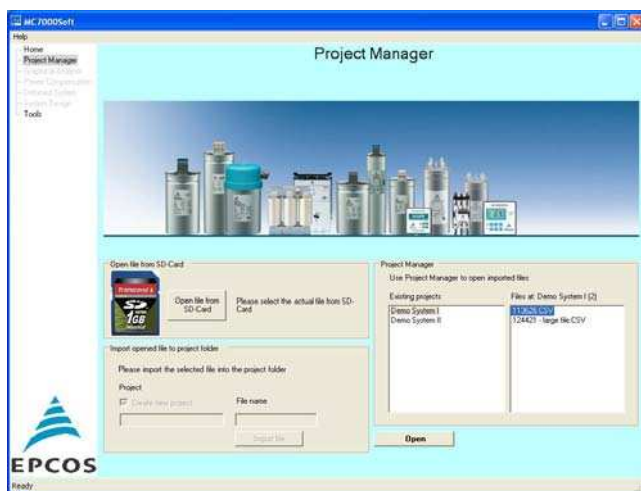
Series/Type:	MC7000-3
Ordering code:	B44066M7777E230
Date:	August 2010
Version:	2

Characteristics

- Three-phase measuring, display and storage of numerous electric parameters in LV-grid:
 - 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)
 - Active, reactive and apparent energy
 - Voltage harmonics (up to 51st)
 - Current harmonics (up to 51st)
 - THD-V (3-phase)
 - THD-I (3-phase)
 - Temperature
 - Minimum and maximum values with time stamp
- Display and internal storage of maximum values with time stamp
- Display of date and time
- Display of harmonics, bar diagram available
- Large number of display options e.g. rotating display and adjustment of font size
- Oscilloscope mode for graphical display of a complete oscillation incl. the harmonics
- Display of measured values (display editor) and rotating change of selected display values freely programmable
- Storage of all measured grid parameters on pluggable memory card (SD card), included in delivery
- Adjustment of font size to large display (max. 3 measuring values in the display)
- Plain-text menu in English, German, Russian, Spanish and Turkish



- PC-Windows software for fast and easy evaluation of measured data included in delivery
 - Administration of several projects
 - Graphical display
 - Several pre-configured graphical displays of standard values
 - Graphical display of selected grid values, large number of configuration options
 - Convenient editing of parameters and time interval
 - Display as line graph or bar diagram
 - Copy into clipboard and print function available
 - Mathematical evaluation of measured values
 - Automatic calculation of required kvar (target-cos ϕ to be set by user)
 - Evaluation of measured harmonics and recommendation of detuning factor for a PFC system of calculated size
 - Influence of detuning on the harmonics for the calculated detuning factor and system size is given.



Technical data and specifications	
Operating voltage (auxiliary voltage)	110 ... 230 V AC +/-15% 50/60 Hz
Power consumption	< 5 VA
Internal pre-fuse	1 AT
Frequency	50/60 Hz
Measuring voltage (3-phase)	3 • 30...400 V ~ (L-N) 50/60 Hz 3 • 50...690 V ~ (L-L) 50/60 Hz
Max. Measuring voltage (3-phase) including all tolerances and overvoltages	3 • 30...440 V ~ (L-N) 50/60 Hz 3 • 50...760 V ~ (L-L) 50/60 Hz
Measuring current (3-phase)	30 / 300 / 3000 A (MiniFlex flexible current clamps, to be ordered separately)
Display	Illuminated, full graphic, 128 x 64 dot
Menu	D/ E / ES / RU / TR
Display of grid parameters as real value / in % / as bar diagram	3-phase Cos-phi, V, I, f, Q, P, S, THD-V, THD-I
Display of 3 grid parameters in large font	Selection in display editor
Display of harmonics	3 rd to 51 st harmonics of voltage and current, also as bar diagram
Oscilloscope mode	Available
Sensitivity	Current/voltage: 1% Active, reactive and apparent power: 2%
Integrated help function with HELP button	Context dependent, plain text
Recording, storage function	
Storage of all grid parameters on SD card according to pre-set measuring interval	3-phase Cos-phi, V, I, f, Q, P, S, THD-V, THD-I
Data carrier	Standard SD card included in delivery
Measuring interval	1 / 10 / 60 seconds
Duration of recording per file at intervals of 1/10/60 seconds	18 hours / 7 days / 45 days
Additional storage of maximum values in the internal store of the measuring device	Voltage, current, active, reactive and apparent power, temperature, THD-V, THD-I
Error storage	Error register in plain text with time stamp

Additional specifications	
Ambient temperature range (operation)	-10 ...+50 °C
Storage temperature range	-20 ...+60 °C
Pollution degree	2
Overvoltage class	CAT III
Protection degree to IEC60529	IP40
Connection	N connection mandatory, PE if N not available
Security	IEC 61010-1:2001; EN 61010-1:2001
EMV	IEC 61000-4-2: 8kV; IEC 61000-4-4: 4kV
Casing	Compact lightweight plastic case 390 x 310 x 147 mm (outside dimensions)
Weight	Approx. 4 kg
Accessories included	3 safety measuring cables 2 m (black, red, violet), 1000 V, CAT IV, incl. high-power fuse
	1 safety measuring line 2 m, blue, 1000 V, CATIII
	4 safety dolphin clips 1000 V, CATIII, black, red, violet, blue
	Windows software CD
	1 memory card (SD-Card); 1GB
	1 power lead
Accessories mandatory, but not included in the delivery	3 flexible MiniFlex current clamps, cable 2.8 m, 600 Vrms (CAT IV), 1000 Vrms (CAT III) max. 3000 A, sensor 400 mm Ordering code 1 piece: B44066M1301E230 Ordering code 3 pieces: B44066M1303E230

Cautions and warnings

- The MC7000-3 is designed exclusively for use in low-voltage switching systems. It is unsuitable for measurements in mid and high-voltage networks.
- The maximum permissible supply voltages (see technical data) must not be exceeded!
- The equipment may be operated only by suitably trained personnel.
- Before applying the measuring voltage, the device must be grounded via the power connection line (protective conductor socket). An additional PE socket is available. Measurements with ungrounded equipment constitute a hazard and are impermissible!
- When measuring systems whose zero-potential status is not ensured, the accident prevention specifications must be observed!
- For voltage measurements, only measuring lines with an isolation class of at least CATIII/1000 V may be used.

Note

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

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