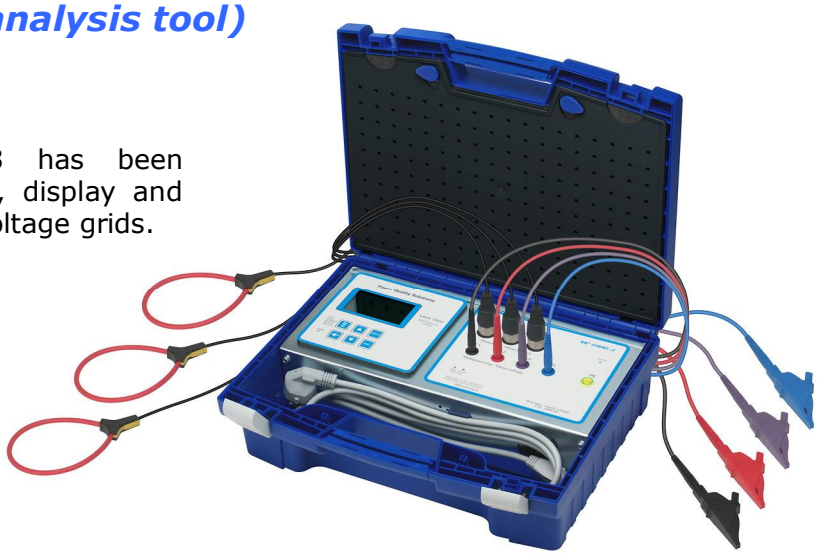
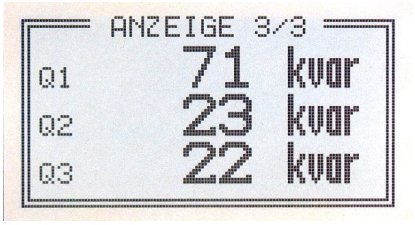
# *Portable measuring suitcase MC 7000-3 (Grid- and reactive power analysis tool)*

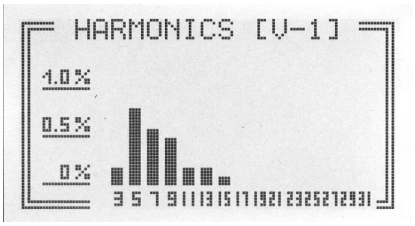


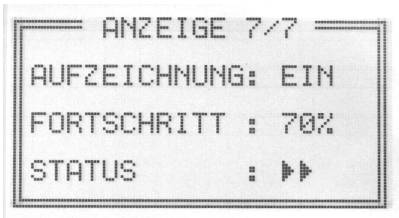
## General

The measuring suitcase MC7000-3 has been developed for three-phase measuring, display and storage of electric parameters in low-voltage grids. The enclosed free of charge and easy to use windows-software allows a fast and easy evaluation of the measured data. Based on the findings of this evaluation the optimum design for a tailor-made PFC solution or the inspection of an existing one is easily performed.

## Three-phase measuring, display and storage of numerous electric parameters




- Voltage ( 3-phase )
- Current ( 3-phase )
- Frequency ( 3-phase )
- Actice power ( 3-phase )
- Reactive power ( 3-phase )
- Apparent power ( 3-phase )
- Power factor ( 3-phase )
- Active-, reactive-, apparent energy
- Voltage harmonics (up to 51th)
- Harmonics of current (up to 51th)
- THD-V ( 3-phase )
- THD-I ( 3-phase )
- Temperature

## Other features

- Storage of all measured grid parameters on pluggable memory card (SD-card), included in delivery
- Comfortable programming of recording interval and duration via timers
- 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

# Universeller Messkoffer MC 7000

## Messtechnik

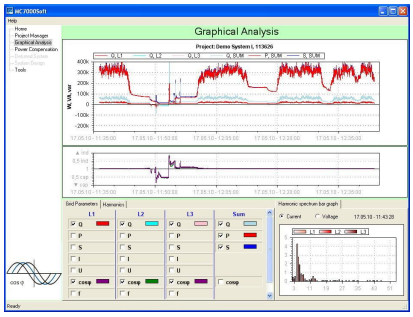
PC-windows software for fast and easy evaluation of measured data included in the delivery

### Project manager

- Administration of several projects (many as you like)

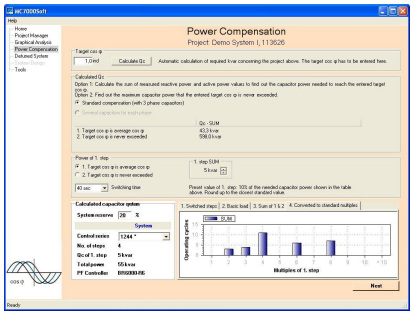

### Graphical display

- Several pre-configured graphical displays of standard values
- Graphical display of selected grid values, large number of configuration options
- Comfortable editing of parameters and time interval
- Display as line graph or bar diagram
- Copy into clipboard and print function available



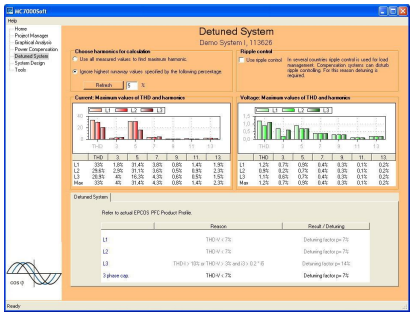

### Mathematical evaluation of measured values

- Automatic calculation of required kvar (target-cos-phi to be set by user)



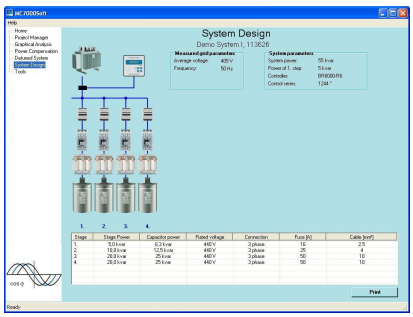

### Evaluation of measured harmonics

- Evaluation of measured harmonics and recommendation of detuning factor for a PFC system of calculated size
- Consideration of ripple-control




### Proposal of a P.F compensation-system

- Summary of the results above
- Principle Drawing of the complete P.F. compensation system
- Listing of the needed components for such a system including controller, fuses, contactors, reactors (when needed) and capacitors with correct power and voltage



## Universal measuring suitcase MC 7000

## Measuring devices

### Technical data

| | |
|---|---|
| **Type** | MC 7000-3 |
| Operating voltage (auxiliary voltage)<br>Power consumption<br>Internal pre-fuse | 110…230V~ +/-15% 50/60Hz<br>< 5VA<br>1 AT |
| Measuring voltage (3-phase) | 3 x 30…440V~ (L-N), 50/60Hz<br>3 x 50…690V~ (L-L), 50/60Hz |
| Measuring current (3-phase) | 30 / 300 / 3000A 50/60Hz<br>“MiniFlex” flexible current clamps (to ordered separately) |
| **Display** | Illuminated, full graphic, 128 x 64 dot |
| Display of grid parameters<br>as real value / in % / as bar diagram | 3- phase<br>Cos-Phi, U, I, f, Q, P, S, THD-V, THD-I |
| Display of 3 grid parameters in large font | Selection in display editor |
| Display of harmonics | 3rd to 51st harmonics of voltage and current<br>also as bar-diagram |
| Oscilloscope-mode | Available |
| Sensitivity | Current / voltage: 1%<br>Active, reactive and apparent power: 2% |
| Integrated help-function with HELP-button | Context dependent, plain text |
| Menu | D / E / ES / RU / TR |
| | |
| **Recording, storage function** | |
| Storage of all grid parameters on SD-card<br>according pre-set measuring interval | 3- phase<br>Cos-Phi, U, I, f, Q, P, S, THD-V, THD-I,<br>single harmonics of V and I, energy |
| Data carrier | Standard SD-Card (included in the delivery) |
| Measuring interval | 1 / 10 / 60 seconds |
| Duration of recording per file at interval<br>1 /10 / 60 seconds | 18 hours. / 7 days / 45 days |
| Additional storage of maximum values in the<br>internal store of the measuring device | Voltage, current, active-, reactive-, apparent power,<br>temperature, THD-V, THD-I |
| Error storage | Error register in plain text with time stamp |
| | |
| **Others** | |
| Casing | Compact light weight plastic suitcase<br>390 x 310 x 147mm (outside dimensions) |
| Weight | Approx. 4 kg |
| Ambient temperature range (operation)<br>Storage temperature range<br>Pollution degree<br>Overvoltage class | -10 … +50°C<br>-20 … +60°C<br>2<br>CATIII |
| Protection degree accord. IEC60529 | IP40 |
| Connection | N connection mandatory, PE in case N not available |
| Security | IEC 61010-1:2001; EN 61010-1:2001 |
| EMV | IEC61000-4-2:8kV; IEC61000-4-4:4kV |
| | |
| **Accessories:** | |
| 3 safety measuring cables 2m (black, red, violet)<br>1000V, CAT IV, incl. high power fuses | included |
| 1 safety measuring cable 2m, blue<br>1000V, CAT III | included |
| 4 safety dolphin clips<br>1000V, CAT III, black, red, violet, blue | included |
| 1 windows software CD | Included |
| 3 flexible current clamps “MiniFlex” 2,8m<br>600Vrms (CAT IV), 1000Vrms (CAT III) | max. 3000A, L=400mm<br>have to be ordered separately |