Power Calibrators

MC133 / MC133i
MC133C / MC133Ci
Models / Parameters

**MC133 / MC133i**
Single phase calibrator

**Both models**
- AC voltage 1 ... 600V
- DC voltage 1 ... 280V
- AC/DC current 8mA ... 30A
- Frequency DC, 15 ... 1000Hz
- Phase 0 ... 360°
- AC power 0 ... 18kVA
- DC power 0 ... 8.4kW
- AC/DC energy
- Built in process multimeter
- RS232, IEEE488 (SCPI)
- Can be extended up to 3 phase system

**MC133 only**
- Harmonic distortion (50 harmonic components)
- Interharmonic distortion
- Modulation and flicker
- Dip/Swell

**MC133C / MC133Ci**
Three phase calibrator

**Both models**
- AC voltage 1 ... 600V
- DC voltage 1 ... 280V
- AC/DC current 8mA ... 30A (90A single phase)
- Frequency DC, 15 ... 1000Hz
- Phase 0 ... 360°
- AC power 0 ... 54kVA
- DC power 0 ... 25.2kW
- AC/DC energy
- Built in process multimeter
- RS232, IEEE488 (SCPI)

**MC133C only**
- Harmonic distortion (50 harmonic components)
- Interharmonic distortion
- Modulation and flicker
- Dip/Swell
Front panel

Front panel is divided into a few sections:

- Large color TFT display with excellent visibility and soft keys
- Keyboard with the rotary knob and cursor keys
- Input terminals (auxiliary inputs, process meter input)
- Power line switch
- Output voltage and current terminals
Rear panel contains:

- Ventilation holes
- Power supply input and fuse holder
- Remote control connectors (Ethernet, RS232, IEEE488)
Colors used on display

- Red color indicates measured value
- Blue color indicates parameter or value that can be modified directly
- Black color indicates fixed value, label, note or parameter that cannot be modified directly

Information line
- Selected function, current time and date

Remote control state
- Remote / Local

Main parameter
- Value
- Unit
- AC / DC

Auxiliary parameters
- Voltage
- Current
- Phase
- Frequency

Process meter
- Voltage
- Current
- Frequency

Soft keys
- Function depends on actual display mode

Output state
- Voltage over 50V
- Output On / Off

Specification
- Main value accuracy

Auxiliary information
- Grounding
- Sense
- Current coil
- Synchronization
- Active channels
There are three terminal areas:

- Input terminals
  - Meter input
  - Auxiliary input
- Voltage output terminals
- Current output terminals

**Meter input**
- Voltage 10V, Frequency 10kHz
- Current 20mA

**Auxiliary input**
- Energy pulses counting
- External synchronization
- Dip/Swell trigger

**Voltage outputs**
- Phases L1, L2, L3
- Common LO terminals floating up to 20Vpk

**Current outputs**
- Phases L1, L2, L3
- Independent LO terminals floating up to 450Vpk
High Current Adapter

Option MC133C-01

- Parallel connection of three current outputs
- Standard option for three phase system

Direct current up to 90A
High Current Adapter

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Direct current up to 90A
Recalibration procedure

All internal calibration data can be changed in CALIBRATION mode.

- Access to the calibration mode is protected by password.
- The entire recalibration can be done from instrument’s keyboard.
- Instrument can be recalibrated completely or in selected functions (points).

### Calibration mode

- **Voltage AC, channel 1**
- **List of calibration point**
- Recalibration is based on two point calibration. Every range is calibrated in the “low” and “high” calibration point.
Remote control

Calibrator can be used in automated measuring systems.

Connectors for remote control are located on the rear panel.

Following interfaces are available for connection to the controller (PC):

- IEEE488 (SCPI) – standard interface
- RS232 – standard interface
- Ethernet – standard interface
- USB – optional using RS232/USB convertor

All device functions can be controlled via the above mentioned interfaces. User’s manual contains description of all commands. Syntax of commands is according to the SCPI standard.
High Current Adapter

Option MC133C-01
- Parallel connection of three current outputs
- Standard option for three phase system

Direct current up to 90A
Software

Caliber (licensed software)

- Easy creation of calibration procedure using procedure wizard
- Automatic calibration of instruments
- Instruments control via USB, RS232, IEEE488, RS485, Ethernet, … (VISA)
- Calculated deviation and uncertainty in each point of test report
- Calibration uncertainty evaluated according to metrology standards
- Up to 20 instruments in one calibration point
- Windows 2000/XP/Vista/7 (32/64 bit)

Instruments scheme
- Instruments used in selected calibration point and their configuration

Information line
- Description of performed operation

User prompt window
- Program messages

Status window
- Active terminals

Camera
- Optional camera module for digital display scanning

Readings
- Particular measured values

Test report
- Measured and evaluated values (measured deviation, maximum allowed deviation, measurement uncertainty)

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