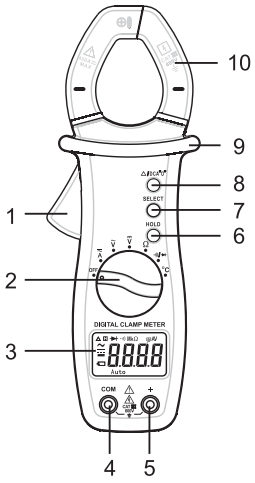
M0400 | MD-410C

GB	Digital Clamp Multimeter
CZ	Digitální klešťový multimetr
SK	Digitálny kliešťový multimeter
PL	Multimetr cyfrowy cęgowy
HU	Digitális lakatfogó multimeter
SI	Digitalni kleščni multimeter
RS|HR|BA|ME	Digitalni kliješta multimetar
DE	Digitales Zangenmultimeter
UA	Цифровий клещі мультиметр
RO	Multimetri digital cleşte
LT	Skaitmeninis skavas multimetras
LV	Digitālais spaiļu multimetrs
EE	Digitaalne klambriga multimeter
BG	Цифров мултицет тип клещи

CE

www.emos.eu



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GB | Digital Clamp Multimeter

Before you begin using the multimeter, read this instruction manual thoroughly. It contains particularly important passages concerning occupational safety principles when using the device. Such passages are highlighted. Reading the manual will prevent potential injury by electric current or damage to the device. The clamp multimeter was designed in accordance with the IEC-61010 standard regarding electronic measuring devices in the category (CAT III 600 V), 2nd pollution degree.
Category CAT III is designed for measuring circuits powered by a fixed output power supply, such as relays, sockets, switchboards, power supplies, short branching circuits and lighting systems in large buildings.

Electrical Symbols

~ alternating current (AC)
⎓ direct current (DC)
≂ direct and alternating current (AC/DC)
⚠ warning – read the manual before use
⚠ risk of injury by electric shock
⏚ earthing
CE declaration of conformity (CE)
⧈ the device is protected by double insulation and thickened insulation

⚠ ATTENTION

Comply with the following instructions in particular:
This device is not intended for use by persons (including children) whose physical, sensory or mental disability or lack of experience and knowledge prevents safe use, unless they are supervised or instructed regarding use of the appliance by a person responsible for their safety. It is necessary to supervise children to ensure they do not play with the device.

- Make sure the device is not damaged before you begin using the multimeter. If you find obvious signs of damage on the device, do not make any measurements! Check that the surface of the multimeter does not have scratches and that the side joints are not coming apart.
- Check the insulation on the measuring probes. Damaged insulation may result in injury by electric current. Do not use damaged measuring probes or jaws!
- Do not measure voltage higher than 600 V, or current higher than 400 A!
- The COM terminal must always be connected to reference ground.
- If you find that the multimeter is making abnormal measurements, stop using it. If you are unsure of the cause of the defect, contact a service centre.
- Do not measure voltages and currents higher than indicated on the front panel of the multimeter and the jaws. Risk of injury by electric current or damage to the multimeter!
- Check that the multimeter is working properly before use. Test on a circuit with known electrical values.
- Before you connect the multimeter to a circuit you intend to measure, turn off the power to the circuit.
- Do not use or store the multimeter in environments with high temperature, dust or humidity. It is also not recommended to use the device in environments with potentially strong magnetic fields or risk of explosion or fire.
- When replacing batteries or other parts of the multimeter, use spare parts of the same type and specifications. Replace only when the multimeter is turned off and disconnected!
- Do not alter or otherwise interfere with the internal circuitry of the multimeter!
- Be extra careful when measuring voltages higher than 30 V AC rms, 42 V peak or 60 V DC. Risk of injury by electric current!
- When handing measuring tips, make sure you are holding them behind the finger barrier.
- To prevent electric shock, do not touch any bare conductors with hand or skin.
- Disconnect the measuring tips from the tested circuit before opening the casing of the multimeter.
- Do not perform measurements if the multimeter's casing is removed or loose.
- Once the screen shows the low battery icon „ ", replace the batteries. Otherwise, subsequent measurements may be inaccurate. Incorrect measurements may then result in injuries by electric current!

⚠ WARNING

Use the MD-410C multimeter only in the manner specified below. Other uses may cause damage to the device or injury to your health. Comply with the following instructions:

- Before measuring resistance, diodes or current, disconnect the circuits from the power supply and discharge the high-voltage capacitors.
- Before measuring, make sure the circular switch for measuring range is in the correct position. Do not under any circumstances make any changes to the measuring range (by moving the circular switch for measuring programmes) while measuring! Doing so could damage the device.
- If you intend to measure current, turn off the power supply to the circuit before you connect the multimeter.

Device Description

Clamp multimeter MD-410C belongs to a series of compact devices with 3 3/4 digit display that are designed to measure direct and alternating voltage, direct and alternating current, resistance, temperature, test diodes and perform audio testing of conductivity and of circuits. The multimeter is fitted with automatic range adjustment for measuring values. It indicates the exceeding of the measuring range. It features an automatic switch-off function.

Specifications

Screen: LCD, 3999 (3 3/4 digits) with automatic polarity indication
Measuring method: dual-slope integration via an A/D converter
Reading frequency: 3× per second
Jaw spread: 33 mm
Max. measurable conductor: Ø 28 mm
Operating temperature and humidity: 0 °C to 40 °C,
relative humidity <75 %
Storage temperature and humidity: -10 °C to 50 °C,
relative humidity <85 %
Power supply: 2× 1.5 V AAA
Low battery: indication via battery symbol on the screen
Indication of exceeded range: shows "OL" on the LCD
Measuring category: CAT III (600 V)
Dimensions and weight: 38 × 71 × 194 mm; 211 g (including batteries)

ACCESSORIES

Manual: 1 pc
Testing conductors: 1 pair
Type K thermocouple: 1 pc

Front View of the Multimeter

1 – Lever
Used to open and close the jaws.

2 – Turn switch
Used to select functions and to turn the meter on or off.
When the meter is not being used, turn the switch to the OFF position.

3 – Screen
3-3/4 digit LCD screen with max. reading of 3999.

4 – COM terminal
Connecting terminal for the black (negative) testing conductor.

5 – ⊣ terminal
Connecting terminal for the red (positive) testing conductor.

6 – HOLD button (hold the value on the screen)
Used to enter or exit hold value mode.

7 – SELECT button
1. Used to switch between diode testing and continuity testing, if the turn switch in the •))) / ⊣ position.
2. Used to switch between measuring direct current and alternating current, when the turn switch is in the $\tilde{\overline{A}}$ position.

8 – △/DCA"0" button
When in direct current measurement mode, the button can be used to reset the screen before beginning measurement.
During other measurement modes, the button can be used to enter or exit relative mode.

9 – Grip barrier
Designed to protect the fingers from contact with the tested conductor. Do not hold the device in places beyond this barrier.

10 – Jaws
Used to grip the conductor when measuring current.

Info for built-in buzzer:
Pressing any button is accompanied by a beep, if the button's function is currently active.
A minute before the device switches off automatically, the device will beep several times. Shortly before switch-off, you will hear a long beep, then the device turns off.

Measurement Accuracy

Accuracy is specified for the duration of one year after calibration and only at temperature of 23 °C ±5 °C with relative humidity of up to 75 %. Unless expressly specified otherwise, accuracy is specified in range between 8 % to 100 %.
Accuracy is specified as follows:
± ([% of reading] + [number of least significant digits])

DC Voltage

Range	Resolution	Accuracy
400 mV	0.1 mV	± (0.8 % + 5)
4 V	1 mV	± (1 % + 5)
40 V	10 mV	
400 V	100 mV	
600 V	1 V	

Input impedance: 400 mV range: >100 MΩ
other ranges: 10 MΩ
⚠ Max. allowable input voltage: 600 V DC

AC Voltage

Range	Resolution	Accuracy
4 V	1 mV	± (1.2 % + 5)
40 V	10 mV	± (1.5 % + 5)
400 V	100 mV	
600 V	1 V	

Input impedance: 10 MΩ
Frequency range: 40 Hz – 400 Hz
⚠ Max. allowable input voltage: 600 V ef.
Response: average, calibrated to the effective value of sine wave

Direct Current (DC)

Range	Resolution	Accuracy
400 A	0.1 A	± (2.5 % + 5)

⚠ Max. allowable input current: 400 A

Temperature coefficient
0.1 × (specified accuracy) / °C (<18 °C or >28 °C)

Alternating Current (AC)

Range	Resolution	Accuracy
400 A	0.1 A	± (2.5 % + 5)

Frequency range: 50–60 Hz
⚠ Max. allowable input current: 400 A
Response: average, calibrated to the effective value of sine wave

Temperature coefficient
0.1 × (specified accuracy) / °C (<18 °C or >28 °C)

Resistance

Range	Resolution	Accuracy
400 Ω	100 mΩ	± (1.2 % + 7)
4 kΩ	1 Ω	± (1.0 % + 5)
40 kΩ	10 Ω	
400 kΩ	100 Ω	
4 MΩ	1 kΩ	± (1.2 % + 5)
40 MΩ	10 kΩ	± (1.5 % + 7)

Overload protection: 250 V peak

Circuit Continuity Test

Range	Resolution	Description	Overload protection
•)))	0.1 Ω	If resistance is lower than approx. 30 Ω, you will hear a buzzer.	250 V peak

Note:
If resistance is between 30 Ω and 150 Ω, the buzzer may or may not sound.
If resistance is higher than 150 Ω, the buzzer will not sound.

Diode Test

Range	Resolution	Description	Overload protection
⊣	1 mV	Displays approximate voltage loss in the current flow direction; Voltage in open circuit: approx. 2 V; Testing current: approx 0.6 mA	250 V peak

Temperature Measurement

Range	Resolution	Accuracy
-20 °C ~ 0 °C	1 °C	± (4 % + 5)
0 °C ~ 400 °C		± (1 % + 5)
400 °C ~ 1 000 °C		± (2 % + 5)

The stated accuracy is valid at ambient temperature stability of ±1 °C. If ambient temperature stability is ±5 °C, the stated accuracy is valid after 1 hour has passed.

Hold Measured Value Mode

Pressing the HOLD button holds the measured value on the screen.
A H symbol will be displayed on the screen as an indicator.
If you want to cancel the mode, press the HOLD button again.
The H symbol will disappear.

Using Relative Mode

Selecting relative mode makes meter save the current measured value as a reference for subsequent measurements and resets the value on the screen.

1. Press the △/DCA"0" button. The multimeter will enter relative mode and saves the current measured value as a reference for subsequent measurements. A △ symbol will appear on the screen as an indicator. The screen will display zero.
2. When you make a new measurement, the screen will display the difference between the reference value and the newly measured value.
3. If you want to cancel relative mode, press the △/DCA"0" button again. The △ icon will disappear.

Obsah je uzamčen

Dokončete, prosím, proces objednávky.

Následně budete mít přístup k celému dokumentu.

Proč je dokument uzamčen? Nahněvat Vás rozhodně nechceme. Jsou k tomu dva hlavní důvody:

1) Vytvořit a udržovat obsáhlou databázi návodů stojí nejen spoustu úsilí a času, ale i finanční prostředky. Dělali byste to Vy zadarmo? Ne*. Zakoupením této služby obdržíte úplný návod a podpoříte provoz a rozvoj našich stránek. Třeba se Vám to bude ještě někdy hodit.

   **) Možná zpočátku ano. Ale vězte, že dotovat to dlouhodobě nelze. A rozhodně na tom nezbohatneme.*

2) Pak jsou tady „roboti“, kteří se přiživují na naší práci a „vysávají“ výsledky našeho úsilí pro svůj prospěch. Tímto krokem se jim to snažíme překazit.

A pokud nemáte zájem, respektujeme to. Urgujte svého prodejce. A když neuspějete, rádi Vás uvidíme!