

## MIKO-10

Small-sized  
microohmmeter



### Features and benefits:



Wide functionality and high accuracy of the measurements  $\pm 0.2\%$



3 modes of resistance measurement



3 ways to fasten the instrument



Test current up to 10 A



Wide range of accessories



Additional automatic functions



Built-in battery, portability and reliability



### Wide functionality and high accuracy of the measurements $\pm 0.2\%$

MIKO-10 is ahead of similar instruments represented in the market due to a number of functional and technical features.

Small-sized wrist-wearable microohmmeter MIKO-10 is designed for instant DC resistance measurements within the range  $1 \mu\Omega \div 0.1 \Omega$ .

MIKO-10 enables measurements at following objects:

- High-voltage or auto circuit breakers;
- Releasing, connecting or disconnecting switches, contactors and relays;
- Bolted, welded and brazed joints of current leads and busbars;
- Rail connections and wagon wheel pairs;
- Electric motors, generators, compensators, and other objects.



### 3 modes of resistance measurement

Different measurement modes are implemented in the instrument:

- **AUTO:** is intended for contact resistance measurement of HV circuit breakers w/o CT and any demountable or nondemountable connections on current 1A or 10 A. The measurement starts automatically by the circuit closing;
- **SINGLE:** is intended for contact resistance measurement of HV circuit breakers w/o CT and any demountable or nondemountable connections on current 1 A or 10 A. The measurement starts by the User's command;
- **BUILT-IN CT:** is intended for contact resistance measurement of HV circuit breakers **with CT** on current 10 A. The measurement starts by the User's command.



AUTO



SINGLE



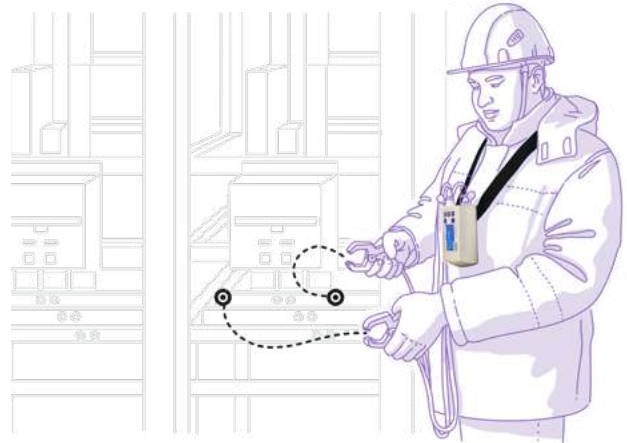
BUILT-IN CT



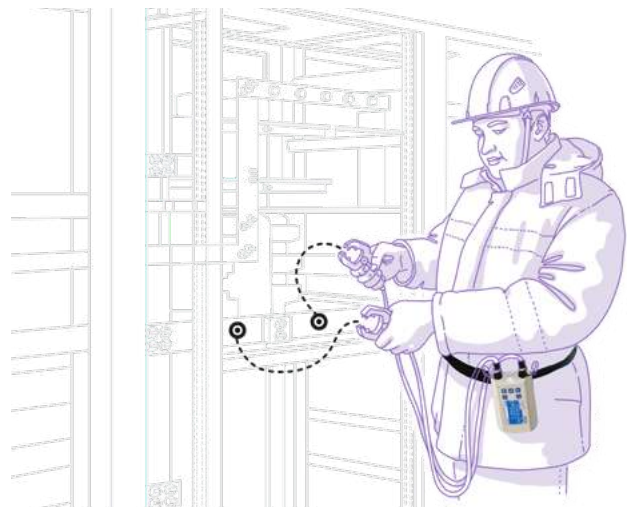
### 3 ways to fasten the instrument

The instrument is placed into an ergonomic case that can be fixed on the wrist by special belts, thus leaving both hands free to facilitate measurement process.

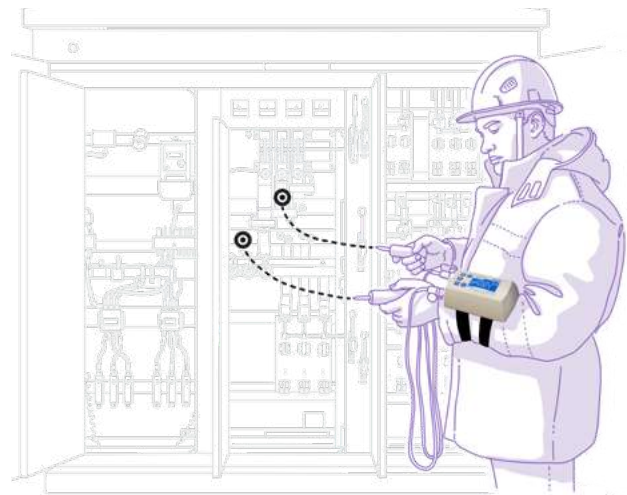
Moreover, the instrument can be easily removed from the wrist and fixed on the waist or on the neck, and also installed on any flat surface.



MIKO-10 fixation on the neck



MIKO-10 fixation on the waist



MIKO-10 fixation on the wrist

### 10A Test current up to 10 A

MIKO-10 is applied in electric networks, power plants or substations, traction substations of electrified transport, as well as in industrial enterprises where 10 A current is sufficient for measurements.

In turn, test current in similar instruments does not exceed 2 A, so that MIKO-10 (with test current up to 10 A and the weight of 0.5 kg) achieves leading positions among microohmmeters of this class.

Address	Resistance	Current
101	995.3uΩ	9.8A
100	999.2uΩ	10.0A
99	997.8uΩ	1.0A
98	999.3uΩ	10.0A
97	995.2uΩ	9.8A

Instrument's built-in archive

### Built-in battery, portability and reliability

The built-in battery of MIKO-10 makes the operation process fully self-contained. One battery charge is enough for more than 1000 measurements at max current. Non-volatile memory up to 100 tests ensures a complex test of a transformer substation.

MIKO-10 can justly be referred to portable instruments due to its light weight of 0.5 kg and small dimensions 165 × 100 × 60 mm.

The above peculiarities ensure complete autonomy of the instrument over the vast territory of substation or facility.

### AUTO Additional automatic functions

MIKO-10 is a modern small-sized microohmmeter that complies up-to-date Users' requirements.

The instrument has a number of important functions:

- Auto thermal EMF balancing in the test circuit;
- Auto power off, if the instrument is not used;
- Circuit continuity test;
- Auto measurement start against the test circuit continuity confirmation;
- Audible indication of the measurement start and stop.



### Wide range of accessories

There are specially designed cables of different length and with different lugs for reliable connection to the measurement object.

Additional items to be purchased:

- Cables with needle-type spring loaded contacts. For instance, can be used to test the resistance of busbars and terminal buses;
- Test cables with crocodile clips;
- Test cables with probes;
- Protective case;
- Multi-function belts;
- Wearproof tool bag.



Application field: for express measurements in electric networks, power plants or substations, traction substations of electrified transport, as well as in industrial enterprises where such measurements are required.

### General features

Power supply (mains adapter input voltage)	AC 176-264 V, 47-63 Hz
Power supply (mains adapter output voltage, that is used to recharge the battery)	DC 11-13 V, 1 A
Consumed power does not exceed	15 W
Battery type	Li-ion battery
Battery lifetime (in continuous operation)	24 hours
Battery recharge time	< 3 hours
Built-in memory	100 tests
Number of measurements on full battery charge	> 1000 tests
Dimensions	165 × 100 × 60 mm
Test block weight	0.5 kg
Accessories weight (standard complete set)	0.9 kg
Warranty	2 years
Calibration period	2 years

### Measurement features

Measurement principle	4-wire Kelvin method
Resistance range	1 μΩ ÷ 0.1 Ω
Resistance resolution	0.1 μΩ
Accuracy	±0.2 %
Test current	1 A / 10 A
Operating mode establishment time	Less than 2 s
Measurement time	2 s w/o CT 2-30 s with CT
Number of digits in the output of the measurement result	4

### Environment

Environmental protection	IP 54
Operating temperature	from -20 °C to +55 °C
Storage temperature	from 0 °C to +55 °C
Transportation temperature	from -20 °C to +55 °C
Relative humidity	95% (non condensing)

### Interface

PC communication	USB
Display	Monochrome graphic 128 x 64 pix
PC software	Windows®-based analysis software
Interface language	English / Russian
User's manual language	English / Russian

### Safety and Certificates

Thermal protection	Protects all sensitive components, avoiding any damage due to overheating
Safety	IEC 61010-1
EMC	IEC 61326-1
Electric shock protection class	Double or reinforced isolation





### High-voltage or auto circuit breakers

(oil-blast, SF6, vacuum, air-blast, electromagnetic)

- DC electrical resistance measurement of contact connections;
- DC electrical resistance measurement of current leads.
- DC electrical resistance measurement of contactors and relays.



### Releasing, connecting, short-circuiting switches

- DC electrical resistance measurement of contact connections.



### Busbars and connecting bars

- Testing of cable and bus connections.



### Bolted, welded or brazed joints of current leads and busbars

- DC electrical resistance measurement of contact connections.



### Fuses and fuse-disconnectors

- DC electric resistance measurement of conducting cartridge of fuse-disconnector.



### Railways

- DC electrical resistance measurement of contacts of HV circuit breakers;
- DC resistance measurement of contacts of auto circuit breakers, contactors, disconnecting and connecting switches;
- DC electrical resistance measurement of contacts of bolted, welded or brazed joints of current leads and busbars;
- Wagon wheel pairs resistance measurement;
- Rail connections resistance measurement.



### Electric motors, generators, compensators

- Metallic bonding resistance measurement.



### Electric installations of buildings and constructions

- DC electrical resistance measurement of contact connections.



MIKO-2.3



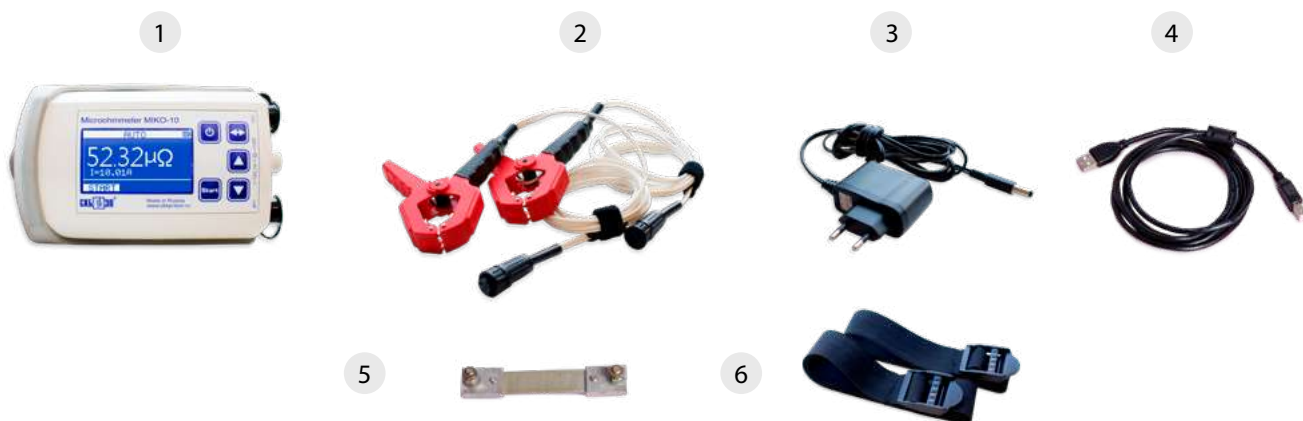
MIKO-21

We recommend you to check our offer for **MIKO-2.3** and **MIKO-21**. More information is available at our website [www.skbecp.com](http://www.skbecp.com)



**Standard complete set**

Nº	Item	Description	Order Nº
1	MIKO-10 test block	Instrument and documents: Calibration Certificate, User's Manual, and Log book.	SKB042.00.00.000
2	Test cable (2 pcs)	Test cable 2 x 1.7 m with crocodile clips (jaw up to 50 mm).	SKB042.04.00.000
3	Mains adapter	Type: MT-IES8-120100-1P (MT-ИЭС8-120100-1П) (12 V, 1 A, 5.5 - 2.1 mm) to charge the built-in battery.	-
4	USB 2.0 A-B Cable	USB cable 1 x 2 m for computer connection and data transfer.	-
5	Shunt	Type 75ShSM M3 (75ШСМ М3) to test the operability of the instrument.	-
6	Stretching belt	Stretching belt (2 pcs) to fix the instrument on the User's hand.	-



**Optional accessories**

Nº	Item	Description	kV	L	W	Order Nº
7	Manipulating rod 35 kV	The rod is designed to ensure convenient connection to contacts of a high-voltage object. The rod is completed with a clamp with current and potential contacts connected by wires with the measurement platform. Test cables are connected to the measurement platform from the ground.	35	2.2 m	3.4 kg	SKB110.41.00.000
	Manipulating rod 110 kV		110	3.7 m	4 kg	SKB110.41.00.000-01
	Manipulating rod 220 kV		220	5.1 m	4.6 kg	SKB110.41.00.000-02



**Recommended complete set**

Nº	Item	Description	Order Nº
8	Test cable with potential spring-loaded contacts (2 pcs)	Test cable 2 x 4.8 m with potential spring-loaded contacts.	SKB042.06.00.000 SKB042.06.00.000-01
9	Protective case	Special case to protect MIKO-10 from shock loads.	OKW7115108
10	Tool bag	Robust, convenient, wearproof bag for transportation of cables, documentation, and other accessories to MIKO-10 instrument. The bag is especially useful when the set is carried to an object, so that all the needed accessories are kept together.	SKB118.01.00.000

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**Optional complete set**

Nº	Item	Description	Order Nº
11	Test cable (2pcs)	Test cable 2 x 4.8 m with crocodile clips (jaw up to 50 mm).	SKB042.05.00.000
12	Test cable (2pcs)	Test cable 2 x 1.5 m with 4 isolated crocodile clips (jaw up to 150 mm) and 2 probes.	SKB042.08.00.000 SKB042.08.00.000-01
13	Multi-function belt	An especial belt for convenient fastening of MIKO-10 instrument on the waist or on the neck.	SKB142.06.00.000

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## SKB EP, LLC is an innovative enterprise founded in 1991 in Russia.

We offer a wide range of test instruments for control and diagnostics of electrical switching equipment, such as high-voltage circuit breakers, transformers, generators, motors, etc. Our instruments are reliable, highly accurate, and user-friendly. They provide fast and complex test result measurements.

### Among our services are:



Calibration and testing



Warranty and post warranty service



Technical support



Trainings and seminars



Implementation of new measurement and analysis methods of the high-voltage equipment condition



Development and manufacture of special fixing units and measuring cables

Innovative approach is one of the basic principles of our development and production cycle. Application of the instruments produced by our company makes it possible:

- to save time for diagnostics and control of high-voltage equipment;
- to simplify working process;
- to reduce the costs for equipment repairs.

# > 13,000

Today we have more than 13 000 loyal customers. Our instruments are successfully applied in:

- energy systems;
- industrial enterprises;
- railways.

Please visit our website to find more information about our company, instruments and provided services.

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