

Milliohmmeter MIKO-7 with basic software

Certificates:

Safety Test Certificate IEC 61010-1:2001 on the MIKO-7
EMC Compatibility 61326-1:2005 on the MIKO-7

MIKO-7 is included in Russian Register of Innovative Products under #240, valid until 12.10.2018

MIKO-7 is included in Russian State Register under #55004-13, valid until 30.09.2018

Warranty: 13 months

Service life: 10 years



DC current resistance measurement in inductive and noninductive circuits in the range from 10 μOhm ÷ 1 kOhm for the currents of up to 10A:

- Windings of power transformers, instrument current transformers, electromagnets and electric motors;
- Compensatory, current-limiting and other resistors of high-voltage circuit breakers;
- Contacts and contact connections of power and signal circuits;
- Cables.

Description:

- The instrument ensures the overall automation of resistance measurement process thus simplifying the process of configuring and provides for the knowledge of actual value of resistance of the item subject to diagnostics. Measuring current in the equipment of other manufacturers changes discretely – by huge steps, for instance, of 10A, 1A, 0,1A, while the travel of milliohmmeter MIKO-7 is as smooth as possible;
- Output signal power control (0.3; 1; 5; 20; 62) for the avoidance of excessive resistance of low-power windings of electric motors, electromagnets, etc.;
- Exceptional measuring current stability;
- High level of protection and safety conformance in regard to exceeding of measuring current;
 - exceeding of measuring current;
 - polarity reversal of cable ends in accumulator storage battery;
 - electromotive force (emf) of self-induction;
 - a set of required protective means against superheat of the measuring unit;
 - protection grounding contact in the mains plug and safety earthing terminal on the case of the measuring unit.
- Power from the mains and external accumulator storage battery;
- Cables of different length and the grip of alligator type clamps allowing performance of ground measurement as well as the measurement from the cover of transformers of all voltage types;
- The instrument is easy and convenient to use and has an intuitive interface that has been repeatedly noted by the users.

The instrument can be supplied with two software versions. Advanced software is more sophisticated and mostly functional.

Obtaining **MIKO-7 with standard software** you can activate the advanced version for the evaluation period and get access to new functions. In order to activate this version press “CANCEL” button and input the code “000000000”. After activation the user receives a number of advantages including:








- automatic stop of measuring process – the user does not have to select the time of measuring process completion by itself;
- performance measurement (fault-free/faulty) of transformer – automatic calculation of relative deviation of winding resistance against each other;
- accurate identification of transformer problem area – recalculation of resistance of moving windings with delta or star connection to the phase winding resistance;
- defining of compliance of transformer showings with the certified values – recalculation of resistance at current temperature to the resistance at the certified temperature;
- transformer winding temperature calculation;
- history of measurements stored in the instrument and on computer – connection to the computer through USB cable, copying of measurement results on computer;


Specific transition from standard to advanced software can be performed at any time convenient for the user by entering the unique code.

Specifications

Specifications	Value
Resistance range, Ohm	10 μ Ohm ÷ 1kOhm
Maximum permissible intrinsic error of resistance measurement	\pm (0.1%+0.5 μ Ohm)
Measuring current intensity, A	0,015 ÷ 10
Relative drift of measuring current intensity, %/s	\pm 0.002
Maximum output voltage, V	22
Set output power limits, W	0.3; 1; 5; 20; 62
Power supply:	
network voltage, V	100÷242
power voltage from the battery, V	100÷300
Power supply voltage from the external accumulator storage battery, V	11 ÷ 14
Maximum consumed power, W	120
Dimensions, mm	270x250x130
Operation temperature range, °C	-20 ÷ +50
IP for transportation	IP64
IP rating in operating state	IP20
Maximum measuring unit weight, kg	3.2
Interface language	English
User manuals language	English
Calibration interval, year	3

Recommended package of the Instrument

Photo	Item, Index	Application	Recommended complete set (pcs.)
Standard complete set:			
	MIKO-7 measuring unit CKB031.00.00.000	Instrument with the basic software and accompanying documents, Mains cable, Ground wire, Zero resistance equivalent, Shunt and Attachment devices set kit	1
Additional complete set (on order):			
Select at least one measuring cable:			
	Measuring cable CKB031.18.00.000	Cable for ground measurement of TS – 35kV. Allows control from transformer cover (35kV ÷ 500kV). Alligator type clamps with the jaw of up to 40 mm (length – 8.5 m).	-
	Measuring cable CKB031.21.00.000	Cable for ground measurement of TS – 35kV. Allows control from transformer cover (35kV ÷ 500kV). Alligator type clamps with the jaw of up to 80 mm (length – 8.5 m).	1
	Measuring cable CKB031.19.00.000	Cable for resistance measuring in four-terminal winding in inductive and noninductive circuits. Cable is complete with 2 probes and 4 isolated alligator-type clamps A25C. (length - 3 m).	-
	Measuring cable with a fast-switching ground clamp CKB031.26.00.000	Cable clamp is coupled with a fast-switching ground clamp providing for instant connection to the pins of the inputs with the help of the button at its bottom. Clamp jaw of up to 103 mm.	-
	Measuring cable extension CKB031.20.00.000	For ground measurement of all TS (35kV ÷ 500kV). Recommended for application together with measuring cables SKB031.18.00.000 and SKB031.21.00.000. Length – 6.5 m	1
	Battery power cable CKB031.17.00.000	The cable is made in the form of elastic silicone tube resistant to low and high temperatures and corrosive media. Length - 5 m.	1
-	Code for upgraded software activation	For getting the access to advanced instrument functions (see p. 2)	-
-	Software	For remote control of the analyzer (USB cable is needed).	-
-	Cable USB 2.0 A-B	For connecting the instrument to the computer and its for remote control from PC (length – 1.8 m).	-

	Cable and documentation bag СКБ126.06.00.000	Handy, sturdy and wear-resistant bag for carrying cables, documents and other additional component parts to MIKO-7.	1
-	Manipulating rod for equipment of up to 35kV (2.2 m) СКБ010.41.00.000	The rod is designed to ensure convenient connection to contacts of a transformer inputs. 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.	-
	Manipulating rod for equipment of up to 110kV (3.7 m) СКБ010.41.00.000-01		-
	Manipulating rod for equipment of up to 220kV (5.1 m) СКБ010.41.00.000-02		-

Area of the Instrument application

Test methods	Recommended Instrument
Power cable lines	
Monitoring of cable lines	MIKO-7, MIKO-8, MIKO-9, MIKO-2.3
Current transformers	
Measuring of secondary resistance	MIKO-7, MIKO-8, MIKO-9, MIKO-2.3
Operates in the range of 10 mKohm ÷ 1 kOhm on the current of up to 10A, therefore, when measuring the resistance of the secondary current transformer windings the minimum output power shall be set as low as 0.3W, that will reduce the current amperage.	
Voltage transformers (electromagnetic and capacitive)	
Measuring of secondary resistance	MIKO-7, MIKO-8, MIKO-9, MIKO-2.3
Operates in the range of 10 mKohm ÷ 1 kOhm on the current of up to 10A, therefore, when measuring the resistance of the secondary current transformer windings the minimum output power shall be set as low as 0.3W, that will reduce the current amperage.	
Power transformers, autotransformers and oil-immersed reactors	
Measuring of transformer winding resistance	MIKO-7, MIKO-8, MIKO-9, MIKO-2.3
Synchronous generators, compensators and AC/DC motors	
Measuring of winding resistance of the facility	MIKO-7, MIKO-8, MIKO-9, MIKO-2.3