SPECIAL DESIGN BUREAU OF ELECTRIC INSTRUMENT ENGINEERING
high - voltage circuit breakers and transformers control instruments

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Milliohmmeter MIKO-8M

New development. Modification of Milliohmmeter MIKO-8.

Warranty: 36 months
Service life: 10 years

Planned period early release – II quarter of 2018.
We accept applications for purchase.

The instrument for measuring the electric resistance in the range within 10 mkOhm ÷ 10 kOhm on the currents of up to 10A:

- Measurement of DC electric resistance: of windings of power and measurement transformers, windings of electric motors, generators, linear compensators and windings of other high-inductance equipment; of resistors, wires, buses and of other inductance-free circuits;
- Measurement of transient electric resistance of OLTC selector contacts,of earthing devices, disconnecting switches and other detachable and non-detachable contacts.

The device integrates special-purpose modes for measuring different objects with account of their specific features: resistive and inductance objects; voltage transformers; current and power transformers; generators, motors, compensators, connection filters, and magnets.

OLTC in-place check mode (DRM method): OLTC "in-place" check mode allows carrying out of in-place check and diagnostics of OLTC with current-limiting resistors without removing the contactor tank covers. This mode involves measuring of instantaneous current passing at first through the transformer cover and then through OLTC contracts at switching from one tap to another. A graph of current variance at contacts switching is drawn up and the time of switching as well as the general technical condition of the instrument is checked on its basis.

Measurements in milliohmeter mode and in in-place check mode complement each other and provide a comprehensive picture of the state of transformer.

Automatic measurement data processing:

- Automatic calculation of relative deviation of winding resistance at three phases against each other;
- Automatic recalculation of linear resistance of windings, connected with delta or star connection to the phase winding resistance;
- Automatic recalculation of resistance at current temperature to the resistance at certified temperature (with due regard to winding material);

- Automatic calculation of deviations measured and normalized to the certified temperature of winding resistance in relation to the certified values of resistances;
- Automatic calculation of winding temperature based on its measured and certified value of resistance and certified temperature.

The archive of measurements available in the device allows review, copy or deletion of test results stored in the self-powered memory of the device (up to 1000 measurements)

Personal computer connection through USB or Bluetooth.

Sensor screen and a battery (at Customer's choice).

Specifications

Specifications	Value
Resistance range	10 µOhm ÷ 10 kOhm
Maximum permissible intrinsic error of resistance measurement	± (0.1%+0.5µOhm)
Best resolution	0.1 µOhm
Measuring current intensity, A	0.001 ÷ 10
Amperage measurement range in the DRM mode, A	0.1 ÷ 10
Limits of allowable main and relative error of amperage measurement in the DRM mode	±1 %
Maximum consumed power, W	120
Maximum output capacity, W	60
Mains voltage: AC (valid value)	90 ÷ 253V
Mains voltage: DC	127 ÷ 354V
Period of charging a completely discharged battery, not to exceed (MIKO-8MA)	3 hrs
Dimensions, mm	270×250×130
Operation temperature range, ºC	-20 ÷ +55
IP for transportation	IP64
IP rating in operating state	IP40
Maximum measuring unit weight with battery, kg (MIKO-8MA)	4.0
Maximum measuring unit weight without the battery, kg (MIKO-8M)	2.7
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-8M measuring unit СКБ049.00.00.000	Instrument and accompanying documents, Mains cable, Ground wire, Cable USB 2.0, Zero resistance equivalent, Shunt and Attachment devices set kit.	1
	MIKO-8MA measuring unit СКБ049.00.00.000-01	Instrument and accompanying documents, Mains cable, Ground wire, Cable USB 2.0, Zero resistance equivalent, Shunt and Attachment devices set kit **+ in-built battery.**	-
Additional complete set (on order):			
Select at least one measuring cable:			
	Measuring cable СКБ041.18.00.000	The cable is made in the form of elastic silicone tube resistant to low and high temperatures and corrosive media. Alligator type clamps with the jaw of up to 80 mm. Length – 8.5 m	1
	Measuring cable СКБ041.26.00.000	Cable for connection to transformer leads as an alternative to cables available СКБ041.18.00.000. The cable is made in the form of elastic silicone tube resistant to low and high temperatures and corrosive media. Clamp jaw of up to 103 mm. Length - 8.5 m.	-
	Measuring cable СКБ041.19.00.000	Cable for measuring the transient resistance of contacts; measurement of CT and VT windings resistance. Clamps: current and potential contacts: ‘crocodile’ clamps with 25mm jaws (2 pcs.), and removable probes with a 3mm diameter plug 70mm long (2 pcs.). Length: 3 m.	-
	Test cables for CT and VT СКБ041.21.00.000	For measuring the resistance of CT and VT windings of both in-built and stand-alone transformers / circuit-breakers. Alligator type clamps with the jaw of 25 mm. Length – 4 m.	1
	Measuring cable extension СКБ031.20.00.000	Recommended for application together with measuring cables СКБ041.18.00.000 (throat of up to 80 mm) and СКБ041.26.00.000 (throat of up to 103 mm). The extension is made in the form of elastic silicone tube resistant to low and high temperatures and corrosive media. Length - 6.5 m.	1

For applying the DRM-test one of the short-circuiting cable sets for closing secondary circuits and additional resistor shall be ordered:			
	Short-circuit cable (set of 3 pcs.) СКБ035.31.00.000	**This cable is for OLTC devices of auto transformers.** This set consists of thee short-circuiting wires 12m long each. Both ends of the wire are furnished with welded ‘crocodile’ clamps with 50 mm jaws..	-
	Short-circuit cable (set of 3 pcs.) СКБ041.23.00.000	**This cable is for OLTC devices of power transformers.** This set consists of thee short-circuiting wires 3m long each. Both ends of the wire are furnished with welded ‘crocodile’ clamps with 80 mm jaws.	1
	Additional resistor СКБ032.25.00.000	For in-place OLTCs monitoring at apparent resistance of the winding of no more than 0.5 Ohm	1
	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-8M or MIKO-8MA.	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		-