Calibrated coils

KT series

EQUIPMENT CERTIFICATE

Edition 2

MC4.761.008 EC

2017

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This Equipment Certificate describes Calibrated Coils of KT series (the Coil below) including its operation, maintenance, warranty, transportation and storage conditions.

The name of the Coil consists of an instrument name (Calibrated Coil), series name (KT), and modification number:

Calibrated Coil KT-X-X, where
1 2

Position 1 reflects the number of phases:
- 1 – Single-phase
- 3 – Three-phase

Position 2 reflects the number of turns:
- 10 – 10 turns
- 20 – 20 turns
- 100 – 100 turns
- 200 – 200 turns
- 300 – 300 turns

1 Safety requirements

When working with the Coils, “Interbranch Rules for Labor Safety (Safety Rules) When Operating Electrical Systems" (2001) must be observed.

2 Description

2.1 Application

2.1.1 The Coils are employed to boost current used to test various contactless current sensors (clip-on CTs, flexible Rogowski coils etc.) and measuring instruments equipped with such sensors.

2.1.2 The Coils are typically used as the accessories supplied with the test systems MTS ME 3.1KM and MTS ME 3.3.

2.2 Operating conditions

- Ambient temperature, °C ..... +10 to +35
- Relative humidity, % .....up to 80 at 25 °C
- Atmospheric pressure, kPa (mm Hg) ..... 70–106.7 (537–800).

2.3 Scope of supply

2.3.1 The scope of supply for a 10-turn coil is specified in Table 2.1.

Table 2.1

Name and description	Order #	Qty
Calibrated Coil KT-3-10		1
Equipment Certificate		1
Package		1

2.3.2 The scope of supply for a 20-turn coil is specified in Table 2.2.

Table 2.2

Name and description	Order #	Qty
Calibrated Coil KT-3-20		1
Equipment Certificate		1
Package		1

2.3.3 The scope of supply for a 100-turn coil is specified in Table 2.3.

Table 2.3

Name and description	Order #	Qty
Calibrated Coil KT-3-100		1
Equipment Certificate		1
Package		1

2.3.4 The scope of supply for a 200-turn coil is specified in Table 2.4.

Table 2.4

Name and description	Order #	Qty
Calibrated Coil KT-1-200		1
Mains adapter		1
Equipment Certificate		1
Package		1

2.3.5 The scope of supply for a 300-turn coil is specified in Table 2.5.

Table 2.5

Name and description	Order #	Qty
Calibrated Coil KT-1-300		1
Mains adapter		1
Equipment Certificate		1
Package		1

2.4 Specifications

2.4.1 The KT-3-10 and KT-3-20 coils are made of a wire precisely wound in round turns.
NOTE! The current applied to the Coils from the MTS ME 3.1KM-S must not exceed 10A.
The KT-3-20 (or KT-3-10) coils are shown in Fig 2.4.1.

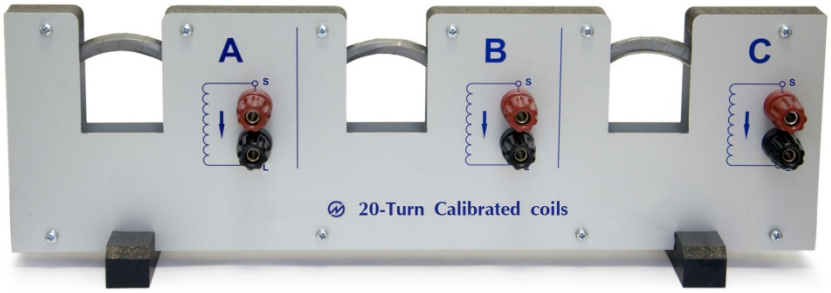

Fig. 2.4.1 KT-3-20

2.4.2 The KT-3-100 coil is made of a wire precisely wound in “figure of eight” turns (to reduce inductance).
NOTE! The current applied to the Coils from the MTS ME 3.1KM-S must not exceed 10A.
The KT-3-100 coil together with current sensors clamped around is shown in Fig 2.4.2.

Fig. 2.4.2 KT-3-100

2.4.3 The KT-1-200 and KT-1-300 coils (see Fig. 2.4.3) provide enhanced heat dissipation and inductance compensation characteristics.

Two fans (powered from the factory-supplied mains adapter) can be installed inside the enclosure to provide forced air cooling. The cooling should be employed if a current of 5 A (or more) is applied to the coil for more than 30 min.

Regarding the inductance compensation, the coils are equipped with built-in power factor correction schemes C1 and (C1 + C2).

The (C1 + C2) option is selected (with the switch on the front panel) when flexible AC current sensors (Rogowski coils) are clamped around the Coil. The C1 option should be selected when testing clip-on CTs with a ferromagnetic core.

NOTE! The current applied to the Coils from the MTS ME 3.1KM-S must not exceed 10A.

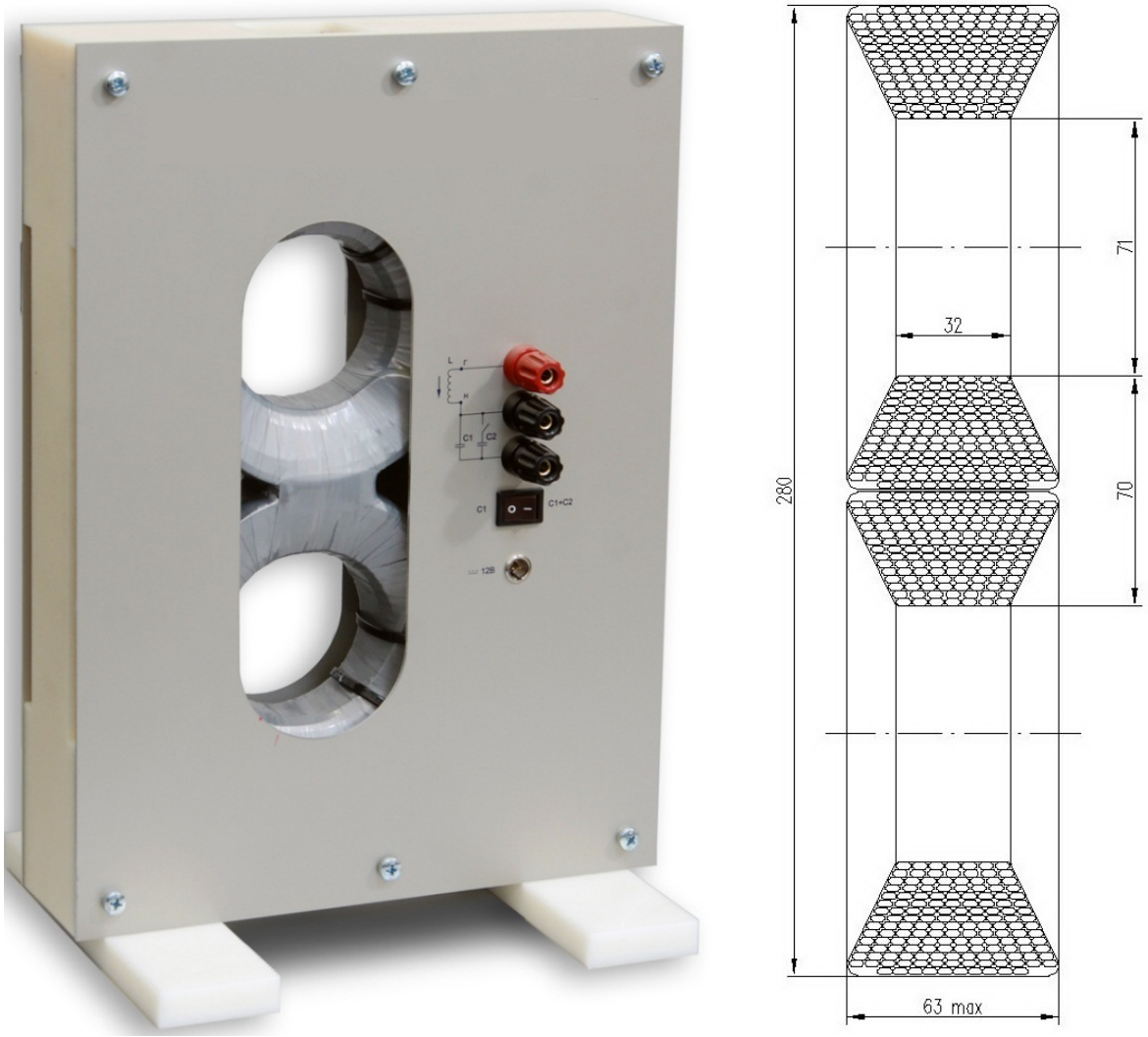

Fig. 2.4.3 KT-1-300 (or KT-1-200)

2.4.4 General specifications are represented in Fig. 2.5.

Table 2.5 **– General Specifications**

Parameter	**Calibrated Coil**				
	KT-3-10	**KT-3-20**	**KT-3-100**	**KT-1-200**	**KT-1-300**
Resistance, Ohm, no more than	0.1	0.2	0.5	0.17	0.26
Inductance, $H \cdot 10^{-3}$, No more than	0.05	0.1	0.5	1.8	4.1
Overall dimensions, mm, no more than	400×128×120		450×248×150	365×248×200	415×260×200
Cross-section diameter, mm, no more than	10	12	50	51	73
Number of turns in a coil	**10**	**20**	**100**	**200**	**300**
Weight, kg, no more than	1.5	1.5	7.1	7.8	10.8

3 User Maintenance

3.1 Maintenance is the care and servicing that the user provides for keeping the equipment operational over its life cycle.

3.2 Every maintenance operation shall meet the safety requirements described in this Equipment Certificate.

3.3 The routine maintenance includes cleaning the work surfaces with a damp cloth, cleaning the oxidized contacts and checking the reliability of their fixing.

4 Storage

4.1 The Coils shall be stored in the manufacturer’s package in a heated storeroom.

4.2 Storage conditions in the manufacturer’s package:

- Ambient temperature .....0 to 40 °C
- Relative humidity .....80 % at 35 °C

Storage conditions without the package:

- Ambient temperature .....10 to 35 °C
- Relative humidity .....80 % at 25 °C

4.3 The storeroom should be free from current-conductive dust, acid or alkali fumes and other aggressive substances.

5 Transportation

5.1 The Coils shall be transported packed in the manufacturer’s box. The Coils can be transported in any enclosed vehicle including air-tight heated plane cargo compartment.

Ambient conditions during transportation:

- Ambient temperature ..... - 30 to + 55 °C
- Relative humidity ..... 90 % at +25 °C

6 Marking

6.1 The manufacturer’s nameplate bears:

- Manufacturer's trade mark
- Model name
- Serial number
- Date of manufacture

6.2 The side and face walls of the transportation box bear handling symbols "Fragile", "Keep dry" and "Top".

7 Warranty

7.1 The Calibrated Coils (the Product below) are warranted against defects in manufacture or material **for a period of 18 (eighteen) months** from the date of purchase from the manufacturer. The Product believed to be defective may be sent within the warranty period to the manufacturer for inspection (the warranty claim enclosed, transportation prepaid). If the inspection confirms that the Product is defective, it will be repaired or replaced (at manufacturer's option) at no charge, within the limitations specified below (paragraph 9.2), and returned prepaid to the location specified in the buyer's warranty claim. All replaced parts become the property of the manufacturer.

7.2 Conditions

In the event of any failure or defect in manufacture or material during the warranty period (provided that the transportation, storage and operating conditions outlined in this Equipment Certificate are fulfilled), send the Product to the Manufacturer along with the sales invoice or other proof of the ownership and date of purchase. If the purchase documents are absent, the warranty period is calculated from the date of manufacture of the Product.

The Manufacturer retains the right to reject a warranty claim in the following cases:

1) The warranty claim is filled out incompletely, incorrectly or illegibly

2) The Product has:

- Serial number altered or removed or illegible
- Broken seal with the calibrator's stamp

This warranty is not applicable for:

1) Damages to the Product caused during shipment to and from the Manufacturer's site

2) Parts requiring regular maintenance or replacement due to natural wear

3) Consumable parts (parts, the nature of which is to become worn or depleted with use)

4) Damages to the Product caused by:

a) Any use other than correct use described in the Equipment Certificate including:

- Handling of the Product resulting in mechanical damages or other defects including any changes or modifications to the Product
- Installation or use of the Product in a manner inconsistent with the technical and safety laws or standards in force in the country where it is installed or used
- Any maintenance other than correct maintenance described in the Equipment Certificate

b) Damages caused by condition or defects of a system or its elements with which or as part of which the Product was used, excluding the other Manufacturer's products intended for use with the Product

c) Damages caused by accessories or ancillary equipment not made or authorized by the Manufacturer with respect to their type, condition or characteristics

d) Damages caused by repairs or attempts to repair the Product executed by an unauthorized person or company

e) Damages caused by adjustments or modifications made to the Product without prior written consent of the Manufacturer

f) Damages caused by negligent handling

g) Damages caused by accidents, fire, ingress of liquids, chemicals or other materials, flood, vibration, heat, improper ventilation, variations of supply voltage, improper power supply or input voltage, electrostatic discharge including lightning, or any other impacts or external actions beyond the reasonable control of the Manufacturer and not covered by the technical documentation for the Product

7.3. The Manufacturer establishes the lifetime for the products outlined above of 4 (four) years from the date of purchase from the Manufacturer. *Please note that the warranty period and lifetime differ from each other.*

7.4. The Manufacturer shall in no circumstances be liable for any direct or indirect damages or losses, whether incidental, consequential or otherwise, including but not limited to loss of profits, loss of use or any deletion, corruption, destruction or removal of data, disclosure of confidential information or infringement of privacy, data recovery expenses, losses arising out of interruption of commercial, production or other activities based on use or loss of use of the Product.

Manufacturer’s address (for warranty claims):

Russia
OOO NPP Mars-Energo
V.O. 13 Line 6 - 8, office 41H, St. Petersburg
Tel: +7 812 327-21-11; +7 812 331-87-35
E-mail: mail@mars-energo.ru
www.mars-energo.com

Estonia
ESME OU
Kadastiku 25a, Narva, Estonia 21004
Tel: +372 56809999
E-mail: mail@esme.ee

8 Packing form

Calibrated Coil КТ- ___ - _____

Serial # _____

has been packed by the Manufacturer in compliance with the Technical Requirements in force.

Packer signature: _____ (*Initials and name*)

Date: _____

9 Acceptance form

Calibrated Coil КТ- ___ - _____

Serial # _____

has been manufactured in compliance with Technical Specifications MS 4.761.008 EC and conforms to the Technical Requirements in force.

Head of Quality Control Department _____ (*Initials and name*)

Corporate Seal:

Дата:_____

Date of sale: _____

Corporate Seal: _____ (*Initials and name*)

10 Warranty Claim

In the event of any failure or defect in manufacture or material during the warranty period (provided that the transportation, storage and operating conditions outlined in this Equipment Certificate are fulfilled), send the Product to the Manufacturer along with the warranty claim containing the following information

1) Model and serial number
2) Date of manufacture
3) Date of putting the Product into operation
4) Condition of the manufacturer’s seals (in place, destroyed, absent)
5) Description of the failure or defect
6) Buyer details (Company name, address, etc., including the name and phone number of a contact person).