

**Three-phase Meter  
Test Bench  
SMD-3**

EQUIPMENT CERTIFICATE

MC3.621.010 EC

2019

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## Introduction

This Equipment Certificate describes a Three-phase Meter Test Bench SMD-3 (hereinafter referred to as the Test bench) including its operation, maintenance, warranty, transportation and storage conditions.

The name of the Test bench consists of an instrument name (SMD3) and modification name that reflects the number of racks for positioning electrical energy meters.

SMD3-X

1

1 – number of test positions

## 1 Safety requirements

1.1 When putting the Test bench into operation and during operation, "Interbranch Rules for Labor Safety (Safety Rules) When Operating Electrical Systems" (M, "Energoatomizdat", 2001) must be observed.

1.2 The Test bench provides electrical shock protection according to the safety requirements specified in IEC 61010-1 (Category II, pollution grade 1).

## 2 General description

### 2.1 Scope of application

2.1.1 The test bench is used to position 1, 2, or 3 three-phase electrical energy meters of various types for their quick connection to a meter test system for testing, adjustment or calibration.

2.1.2 The Test bench is typically used as part of test systems used for testing, adjustment or calibration of electrical energy meters.

### 2.2 Operating conditions

Operating Conditions:

Ambient temperature, °C

+10 to +55

Relative humidity, %

up to 90 under 30 °C

Atmospheric pressure, kPa (mm Hg)

70 to 106.7 (537 to 800)

### 2.3 Scope of supply

The scope of supply for a 3-position test bench is given in Table 2.1.

Table 2.1

Name and description	Order #	Qty
Test Bench SMD3		1
Connection wires		12
Connection cable (1.5m)		3
Cable jumper		6
Connection cable (2.2m)		3
Equipment Certificate		1
Package		
Device for fixing an error calculator Calmar-S in a test position		3

### 2.4 Design

2.4.1 The test bench is designed as a standalone rack used in laboratory conditions (see Fig. 1).

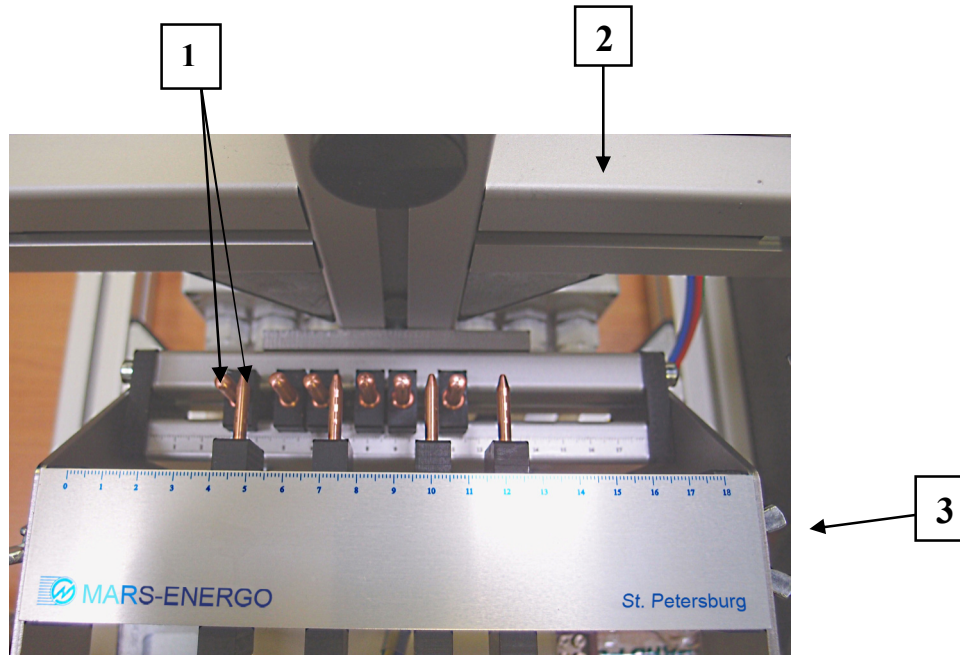
2.4.2 The Adjustable contact panel (width of 180 mm) can accept meters of various types. Located on the front side (Fig.2) of the Test bench, the panel is equipped with the moving contacts (see Fig.2, position 1), screws for fixing the moving contacts (Fig. 2, position 3), meter fixing holders (Fig. 1, position 1) and grounding terminal (Fig.1, position 3). The minimal distance between the current and voltage contacts is 10 mm.

The Contact panel for voltage and current connections to the test system is located on the rear side of the Test bench (see Fig. 3). There are 4 voltage connectors and 6 (3 input and 3 output) current connectors.

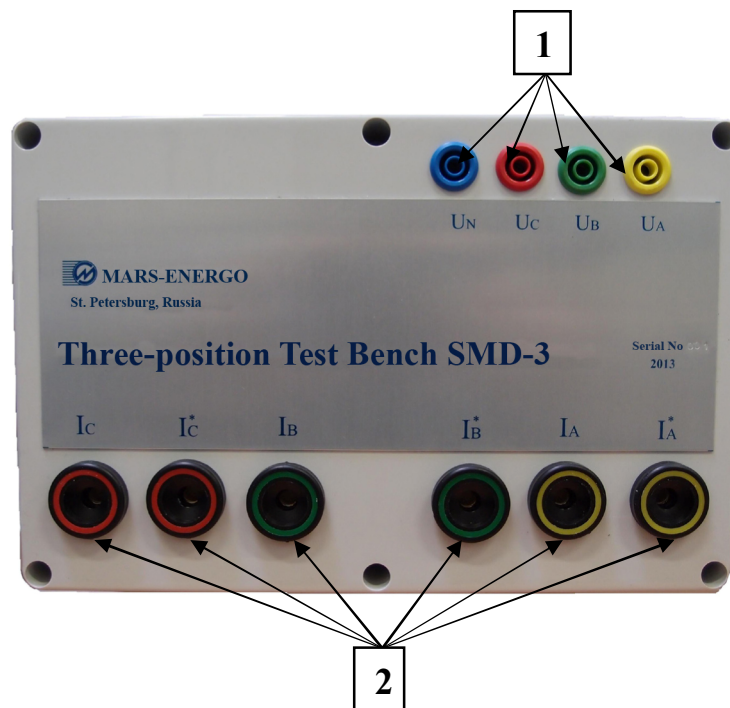


Fig.1 Test bench SMD3-3

1 – Meter fixing holders 2 – Module for connecting to the test system 3 – Grounding terminal



**Fig. 2** Adjustable contact panel for positioning and connecting meters of various types  
 1 – Moving contacts 2 – Horizontal fixing holder 3 – Fixing screw for the moving contacts



**Fig. 3** Contact panel for connecting to the test system  
 1 – voltage connectors 2 – current connectors



**Fig. 4** Holder for fixing the meter in vertical plane

**2.5 Specifications**

2.5.1 Dimensions: 0.5 x 0.5 x 0.85 m

2.5.2 Weight: 28 kg, or less

2.5.3 Mean time to failure: at least 10000 hours

2.5.4 Operating voltage: 380 V

Max current through the contacts: 120 A

Dielectric strength of insulation provides for withstanding a test voltage of 1500 V (RMS), 50 Hz during 1 minute (no breakdown or flash-over)

**3 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 Test bench shall be stored in the manufacturer’s package in a heated storeroom.

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

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

## 5 Transportation

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

5.2 Ambient conditions during transportation:

Ambient temperature .....–50 to 50 °C

Relative humidity.....98 % at 35 °C

## 6 Marking and sealing

6.1 The manufacturer's nameplate bears:

- Model name (SMD3-X)
- Manufacturer's trade mark
- Serial number
- Date of manufacture

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

6.3 The Test bench bears no seals.

## 7 Warranty

7.1 The Test bench of SMD series (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 User's Manual 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 User's Manual 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 User's Manual
- 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 40H, St. Petersburg

Tel: +7 812 327-21-11

E-mail: [mail@mars-energo.ru](mailto:mail@mars-energo.ru)

[www.mars-energo.com](http://www.mars-energo.com)

#### **Estonia**

##### **ESME OU**

Kadastiku 25a, Narva, Estonia 21004

Tel: +372 56809999

E-mail: [mail@esme.ee](mailto:mail@esme.ee)



### 8 Packing Form

Test bench SMD3 \_\_\_\_, serial N \_\_\_\_\_  
has been packed by the Manufacturer in compliance with the Technical Requirements in force.

Packer signature: \_\_\_\_\_ (Initials and Name)

Date: \_\_\_\_\_

### 9 Acceptance Form

Test bench SMD3 \_\_\_\_, serial N \_\_\_\_\_  
has been manufactured in compliance with Technical Specifications  
MS3.621.010 and conforms to the Technical Requirements in force.

Head of Quality Control Department: \_\_\_\_\_ (Initials and Name)

Corporate Seal:

Date: \_\_\_\_\_

Date of sale \_\_\_\_\_

Corporate Seal:

## 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 User's Manual 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).