

**“KB ELECTROMETRY”**



**MULTI-ELECTRODE ELECTRICAL RESISTIVITY & INDUCED  
POLARIZATION IMAGING INSTRUMENTS**

**MODEL: “SibER 64K15”**



CK.64K15.01ПC

## PRODUCT DATA SHEET

### 1. Purpose and scope

Multielectrode electrical exploration equipment "SibER 64K15" is designed for conducting electrical exploration by methods of resistance and induced polarization (IP) in various geological conditions to search for mineral deposits and to survey geological and hydrogeological subsurface strata (hereinafter – the equipment).

### 2. Product specifications and consumable resources

The power supply voltage of the equipment is 12 V DC (from the external battery).

Current and power consumption, max: 22 A, 270 W.

Characteristics of the purchased components, components and elements must meet the applicable regulatory documents.

#### General

Electrodes: 2 x 32 + 2 remote

External power supply: 12V

Backup power: 12V, 2.3 a\*h

Interface: Wi - Fi, Ethernet

Degree of protection: IP67 (transport), IP54 (operation)

Operating temperature: -20 ... +50 °C

Dimensions: 502 x 415 x 246 mm

Weight: 17 kg

#### Source

Type: voltage source

Output voltage: 1 ... 500V

Output current: up to 2A

Output power: up to 220W

The shape of the output pulses: rectangular alternating polarity

Output pulse duration: up to 10 s

The duration of the intervals between output pulses: 20 ms

Output short circuit protection: Yes

External source: VP-1000M

#### Multi-channel meter

Number of channels: 15

Input impedance: 10 MOhm

Number of counts: 1 ... 500

Sample rate: 50, 60Hz

ADC bit rate: 24 bit

Input voltage: -20 ... 20V

Resolution: 1 µv

Industrial frequency interference suppression: at least 90 dB

Overvoltage protection: up to 1kV

#### Power module

Protection against reverse polarity at the entrance: Yes

Supply voltage range: 10.5 ... 15V

Indication of lack of power: sound, led

### 3. Supplied Equipment

#### *Core set of multielectrode electrical exploration equipment «SibER 64K15»*

Equipment "SibER 64K15" including:	1 unit
- a set of programs	1 set
- power cable	2
- battery backup charger	1
- network cable	1

The passport is designed in accordance with the requirements of GOST 2.206. It was put into effect on 27.11.2019.

## PRODUCT DATA SHEET

- the passport of the product	1
- the user manual for	1
<b><i>Possible additional equipment, one supplied with the equipment</i></b>	
Geophysical cable K-32-1 (2 pieces.)	1 set
Geophysical cable K-32-2 (2 pieces.)	1 set
Geophysical cable K-32-5 (2 pieces.)	1 set
Geophysical cable K-32-10-4 (2 pieces.)	1 set
Geophysical cable K-32-15-6 (2 pieces.)	1 set
Geophysical cable K-32-20-8 (2 pieces)	1 set
Stainless steel electrodes (35 cm) complete with two carrying bags (66 pieces)	1 set
Cable carrying reel (2 pieces)	1 set
Electrode connector (clip) (66 Pieces)	1 set
Cables for external power supply	1 set

### 4. Operating instructions

- 4.1. Equipment multi-electrode electrical "SibER 64K15" must be operated in accordance with the requirements of this passport and manual.
- 4.2. Climatic conditions under which the equipment is suitable for operation-HL climate according to GOST 15150 / GOST 15543.1 placement category 1, at ambient temperature from minus 20 to plus 40 °C and relative humidity up to 90% at plus 30°C, atmospheric pressure from 460 to 800 mm Hg.
- 4.3. The equipment is suitable for use in all areas according to GOST 16350.
- 4.4. According to the operating conditions and resistance to external factors, the equipment can be conditionally referred to the groups MS1 and KS3 GOST 26116, or to the groups D1 and L2 GOST R 52931.
- 4.5. The environment when using the equipment is non-radioactive, does not contain aerosols and suspensions, does not destroy the materials of the probe and cable.
- 4.6. Type of atmosphere on the content of corrosive agents-II.
- 4.7. Permissible deviations under the influence of external factors according to GOST 26.205 (magnetic field, supply voltage deviation, ambient temperature deviation) - no more than 0.5 of the basic error.
- 4.8. Instability of readings for 8 hours of operation: 0.25 percent of the basic error.
- 4.9. Pay special attention to the timely charging of the acid sealed batteries enclosed in the equipment.
- 4.10. During the operation, do not expose the equipment to sudden temperature changes and direct sunlight. Do not subject the equipment to sharp shocks and other mechanical influences. Do not allow water and foreign objects inside the generator housing.
- 4.11. The equipment should not be operated during thunderstorms. To avoid damage to the generator by lightning, the load (grounded line or loop) in a thunderstorm must be disconnected from the generator during the thunderstorm.

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## PRODUCT DATA SHEET

### 5. Quality control

5.1. According to the technical regulations in force at the time of the release, multi-electrode electrical exploration equipment "SibER 64K15" is not subject to mandatory certification. Conformity of the production to requirements of the specifications is certified by the manufacture according to GOST R in a voluntary manner.

5.2. The equipment is subject to Declaration according to TR CU 020/2011 "electromagnetic compatibility of technical means".

5.3. According to state regulations in most countries, there are no mandatory metrological requirements for measurements obtained when performing geophysical work. Therefore, this equipment is not subject to the mandatory metrological certification. It is recommended to calibrate the instrument according to the manufacturer's method at the location of the service center in case of aberrant data.

### 6. Storage conditions

6.1. Storage of the equipment is carried out in the packaging of the manufacturer in the conditions of warehouses which exclude the direct impact of precipitation, the possibility of exposure to sunlight, moisture, sudden temperature fluctuations, in conditions 2 (C) according to GOST15150-69:

- 1) at ambient temperature from + 5 to + 35°C;
- 2) relative humidity at a temperature of plus 25°C - no more than 80%.

6.2. Storage of the equipment together with the evaporating liquids, acids and other substances which can cause corrosion of the metal and violation of isolation is not prohibited.

### 7. Transportation conditions

7.1. Equipment can be transported by any type of land, air and sea vehicle, in accordance with the rules applicable to each type of transportation.

7.2. When transported by air, the equipment must be placed in a sealed compartment.

7.3. Transportation of the equipment must be carried out in compliance with the following requirements:

- the equipment must be securely fastened inside the box;
- when loading and unloading do not throw and turn the boxes;
- when transporting, the boxes (and products in the boxes) must be secured from the movement.
- devices must be protected from moisture, dirt, corrosive media and corrosive agents.

7.4. Before unpacking of the boxes after transportation at negative temperatures allow the content to equilibrate to the normal exploitation temperature for at least 24 hours.

7.5. Prepare for the transportation of the products into the Far North and Equator according to GOST 15846.

7.6. Conditions of transportation to minimize the impact of climatic factors must comply with group 5 (OZH4) GOST 15150 for transportation by land, or 6 (OZH2) - for sea and river transport, at ambient temperatures from minus 30 to plus 50°C and relative humidity of no more than 95% at a temperature of 25°C.

## PRODUCT DATA SHEET

7.7. To minimize mechanical impacts, the conditions must comply with the categories according to GOST 23170: medium (C) - for transportation by any means (except by sea);

7.8. During loading and unloading, precautions must be taken to avoid mechanical damage to the products. Loading and unloading operations should be carried out according to GOST 12.3.009.

### **8. Utilization**

8.1. The equipment does not contain harmful substances or components which are hazardous to the health or the environment during the operation, after the service life, and during the disposal, except for the internal battery 12V 2.2 Ah.

8.2. Equipment components are devices containing electronic components and are subject to the disposal methods that are used for products of this type. Dispose them according to the technology adopted by the company operating the device. The built-in battery should be transferred for disposal to a specialized organization.

8.3. The equipment does not contain non-ferrous and precious metals or precious stones.

8.4. Mark about payment of the utilization fee: not applicable.

### **9. Operation period**

9.1. Failure of the equipment is a violation of its working condition associated with the failure of any component, which resulted in a deviation of the parameters beyond the limits established in these technical conditions.

9.2. Established trouble-free operating time - not less than 840 hours.

9.3. The standard service life of the device is 5 years.

9.1. The standard operating life of the geophysical cable and electrode connectors is 2 years (under active exploitation).

### **10. Manufacturer's warranty**

10.1. The manufacturer guarantees that the quality of the equipment meets the requirements of technical specifications No. TU 26.51.12-003-60849411-2018 subject to the consumer's compliance with the rules of use, transportation, storage, installation and operation.

10.2. Established warranty period - 12 months from the date of delivery.

10.3. During the warranty period, the manufacturer carries out free repair (replacement) of the products and their components, except for cases when the failure is caused by a violation of the requirements of the operating instructions.

## PRODUCT DATA SHEET

10.4. The costs associated with the transportation of the defective product during the warranty period are not reimbursed to the Buyer. In case of unfounded claims, the costs of diagnosis and examination of the product are paid by the Buyer.

10.5. Complaints are presented during the warranty period, provided that the consumer complies with the requirements of the operating instructions, with the preparation of the complaint documentst.

10.6. Organization that provides warranty repairs and non-warranty service:

"KB Electrometry" Ltd.

The address of the location of production facilities and service center: 630055, Novosibirsk, ul. Boulevard of Molodezhi, 36B. The manufacturer could not guarantee the possibility of the equipment and accessories repairing with an expired warranty period.

10.7. The warranty does not apply to the purchased finished products not of our own production supplied with the equipment (f.e. battery chargers, etc).

10.8. The warranty does not cover defects caused by:

- dismantling of the equipment by the consumer or third parties, the presence of traces of external interference in the design of the product;
- violations of passport instructions for storage, installation, testing, operation and maintenance of the product;
- improper transportation and material handling;
- presence of traces of exposure to substances aggressive to the materials of the product;
- the presence of damage caused by fire, the elements, force majeure;
- damage caused by improper actions of the consumer;

10.9. The manufacturer reserves the right to make changes to the design that improve the quality of the product while maintaining the basic performance characteristics.

10.10. The manufacturer is not responsible for defects in operation resulting from the connection to the equipment of additional equipment of other vendors if not endorsed and approved by "KB Electrometry" Ltd. .

### **11. Marking and packaging**

## PRODUCT DATA SHEET

11.1. Marking is applied in accordance with GOST 26828. The marking of the case shall be applied by indelible paint, engraving, impact or other suitable method, the marking on the packaging shall be applied by typographic method. The marking of the case contains: the symbol of the product, - the serial number of the product according to the numbering system of the manufacturer;

11.2. Font imprint should provide a clear image after coloring.

11.3. The equipment is delivered packed in a plastic box or wooden box according to GOST 2991. Additional equipment is supplied packed in polyethylene film according to GOST 10354.

11.4. The packaging should protect the devices from atmospheric fallout, mechanical damage and external influences during transportation and storage.

11.5. Packing category - KU-4 according to GOST 23170 / GOST 23216.

## ACCEPTANCE CERTIFICATE

Multielectrode electrical equipment "SibER 64K15" № \_\_\_\_\_ made and adopted in accordance with the design documentation, the requirements of TU26.51.12-003-60849411-2018 and declared serviceable.

The head of quality Department

\_\_\_\_\_ Lonchakov, Oleg Efimovich

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day, month, year