

**VDR / SVDR VHF-INTERFACE
VI-116**

Operating manual

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INTRODUCTION

This operating manual (hereinafter referred to as OM) describes VDR / SVDR VHF-interface VI-116 (hereinafter – the Product).

OM describes operating principles, regulations and specifications of the Product.

In addition to the instructions given in this document, the safety regulations and rules applicable in the field shall be observed.

Only those who have read and understood this document and those who have had special training shall be permitted to operate the Product according to the applicable regulations.

TERMS AND ABBREVIATIONS

| | |
|-------|------------------------------------|
| SPTA | Spare parts, tools and accessories |
| VDR | Voyage data recorder |
| RS | Radio station |
| OM | Operating manual |
| CL | Check list |
| TS | Technical service |
| VDC | Direct current voltage |
| VHF | Very high frequency |
| MIC | Microphone |
| S-VDR | Simplified voyage data recorder |
| TLF | Group to connect radio stations |

1 DESCRIPTION AND OPERATION OF THE PRODUCT

1.1 DESCRIPTION

The Product is designed to interface VDR or S-VDR with VHF-radio stations like Sailor RT-2048 (Debeg 6348, Husun2048), Sailor RT-4822 (Debeg 6322, Husun 4822, Sperry 4822, Scanti VHF 1000 DSC), Furuno FM-8500.

1.2 TECHNICAL SPECIFICATIONS

Table 1 describes technical specifications of the Product.

Table 1 – Technical specifications

| Parameter | Value |
|---|-------------|
| Input VDC, V | 10...36 |
| Power consumption, mW | 500 |
| Max. power of analog output signal, mW | 100 |
| Max. amplitude of analog output signal, V | 10 |
| Frequency bandwidth, Hz | 100...15000 |
| Overall dimensions (LxWxH), mm | 180×128×52 |
| Protection degree | IP22 |
| Operating temperature, °C | -20...+55 |
| Limiting temperature, °C | -60...+70 |
| Weight, kg | 1.1 |

1.3 STRUCTURE AND OPERATION OF THE PRODUCT

The Product is manufactured in metal casing and may be mounted on vertical bulkhead or mounting panel.

Correct use of functional elements is described in Table 2. Figure 1 shows functional elements of the Product.

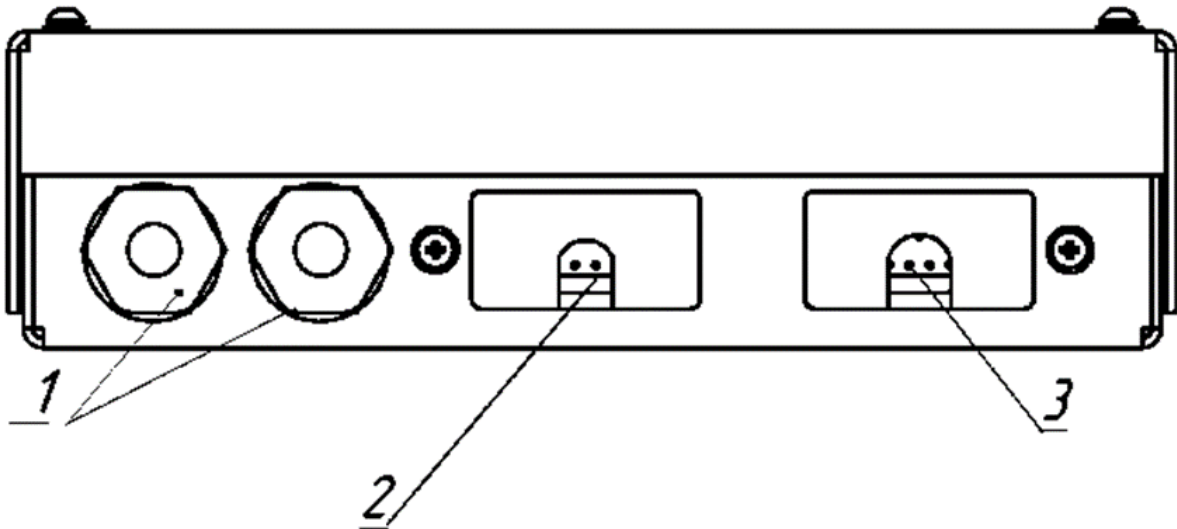


Figure 1 – Functional elements of the Product

Table 2 – Correct use of functional elements

| № | Element | Type, standard size, identifier | Correct use |
|---|-------------|---------------------------------|-----------------------------------|
| 1 | Cable gland | MG-12 | Cable entry |
| 2 | Connector | DRB-9FB | To connect radio station receiver |
| 3 | Connector | DRB-9MA | To connect radio station |
| Note – Positions (№) are shown in Figure 1. | | | |

1.4 MEASUREMENT TOOLS, INSTRUMENTS AND APPLIANCE

Table 3 describes consumables required for TS.

Table 3 – Consumables to carry out TS

| Name and identifier of consumables | Amount of consumables | Note |
|--|-----------------------|---|
| Cleaning cloth | 0.10 kg | 1) To clean surfaces and parts of the system – use clean cloth 2) To clean severe contamination – use alcohol-soaked cloth |
| Rectified hydrolytic technical ethyl alcohol | 0.05 l | To soak cloth while removing contamination |
| Varnish | 0.005 kg | To cover surfaces of the unit in case of paint coating damage |

1.5 MARKING AND SEALING

There is a nameplate on the Product casing indicating name and code, serial number, date of production, weight, IP rating, input voltage and power consumption.

Sealing of the Product is not provided.

1.6 PACKAGING

The Product is packed in corrugated board box protecting it against external damage. Transport packaging is also used as a returnable packaging for transportation of the Product to the repair location and back.

Packaging sealing is not provided.

2 INTENDED USE

2.1 INSTALLATION

Figure 2 shows special mounting holes on the Product casing for its installation.

Mount the Product as follows:

- a) prepare a place for mounting on a vertical bulkhead or mounting panel near VHF-radio station according to dimensional drawing of the Product (see Figure 2);
- b) remove the cover and mount the casing on the vertical bulkhead or mounting panel (use special mounting holes on the casing);
- c) disconnect the handset cable from radio station and connect it to «PHONE» connector on the Product board;
- d) connect cable to the connector in place of the handset; the second end connect to «RT» connector on the Product board;
- e) if the Product is used together with radio station RT-4822 (FM-8500), connect power supply 10 to 36 V DC to the connector «+12V» on the Product board. If the Product is connected to radio station RT-2048 external power supply is not required;
- f) connect cable from VDR to «AUDIO OUT» connector on the Product board; connect positive wire to output «+», and negative wire to output «-» or «GND» depending on the required signal amplitude (if connected to output «GND», output signal amplitude decreases twice than one set by jumpers J6, J7, J8 and J9);
- g) set jumpers of the Product regarding connected radio station, and supply power;
- h) check the Product operation and put the cover back.

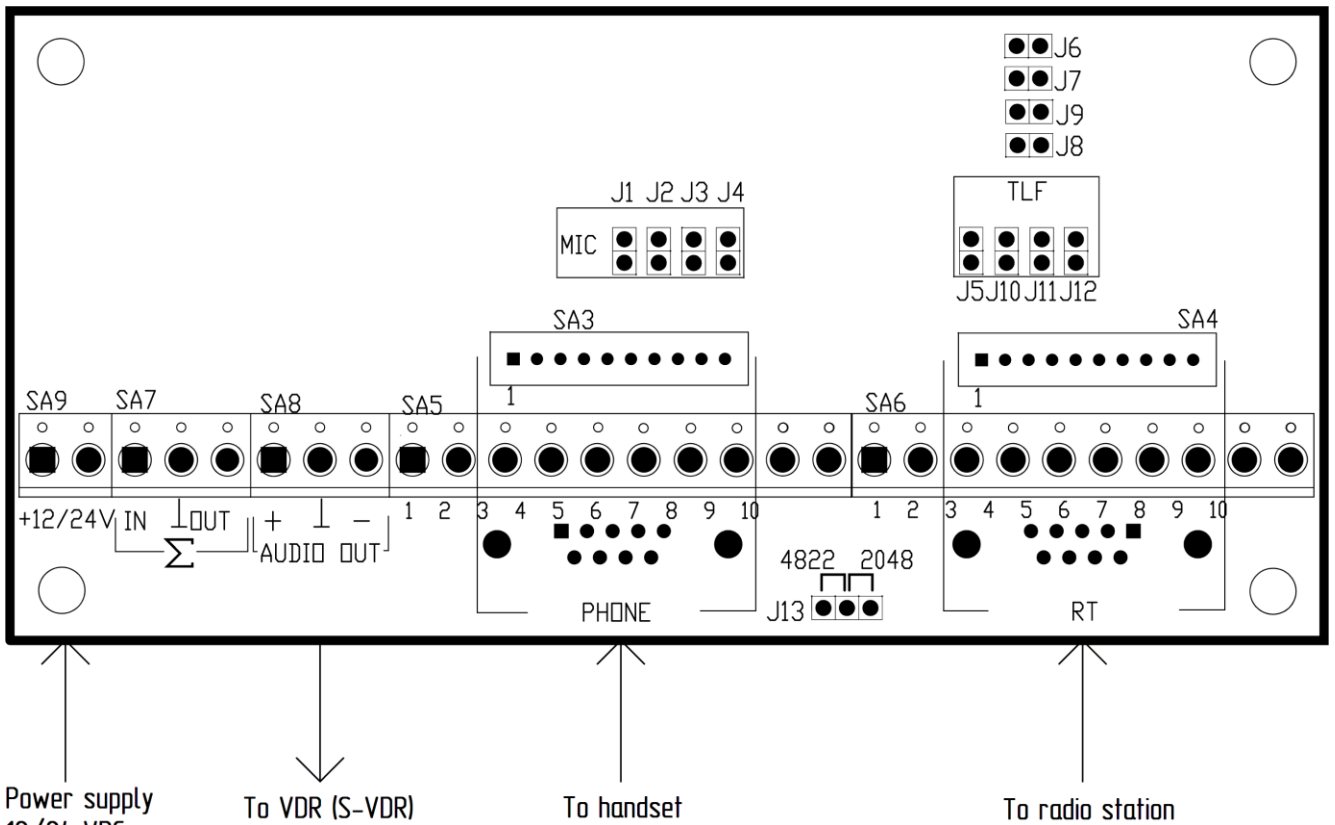


Figure 2 – Connection diagram of the Product and jumpers layout on the printed board.

2.2 OPERATION

The Product receives signals from «PHONE» and «RT» inputs, then the signals are amplified by integrated analog amplifier and transmitted «AUDIO OUT» output. Power supply from V DC, 10 to 36 V.

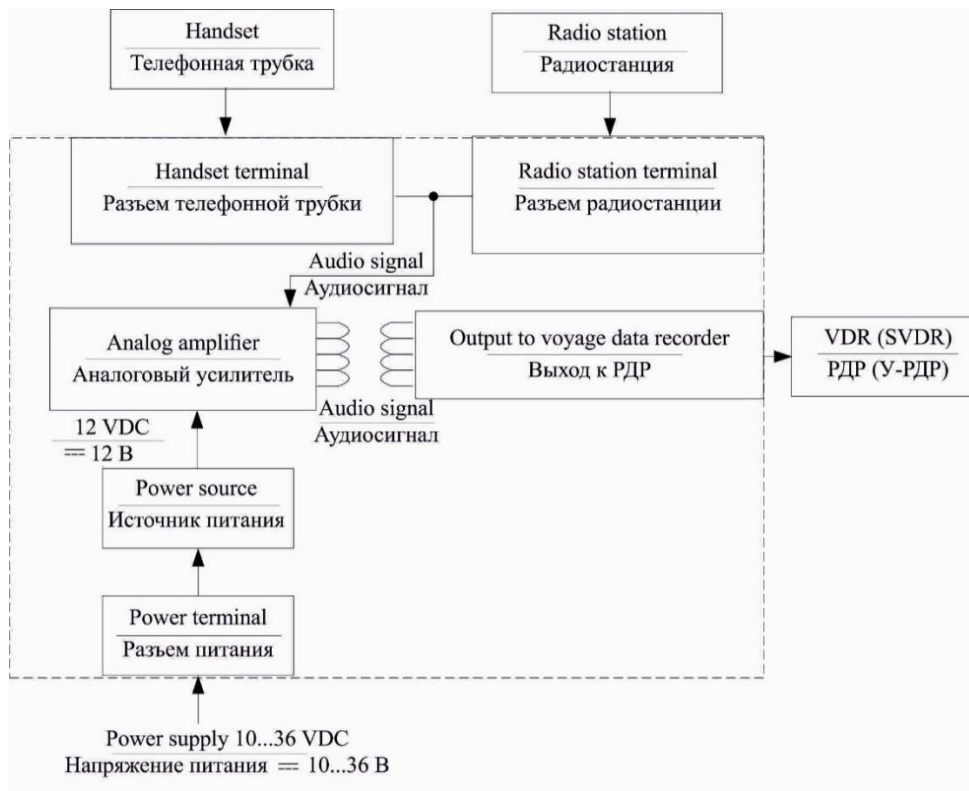


Figure 3 – Connection of the Product

2.3 SETTINGS

Prior to use the Product for the first time, select a type of connected radio station by means of jumpers J1, J2, J3, J4, J5, J10, J11, J12. Set the jumpers according to Table 4.

Table 4 – Jumper settings

| PC | Group «MIC» | | | | Group «TLF» | | | | J13 |
|------------------|-------------|----|----|----|-------------|-----|-----|-----|------|
| | J1 | J2 | J3 | J4 | J5 | J10 | J11 | J12 | |
| RT-4822 (Sailor) | X | | | | | | | X | 4822 |
| RT-2048 (Sailor) | X | | | | X | | | | 2048 |
| FM-8500 (Furuno) | | | X | | X | | | | |

Notes
 1 – X means that jumper was set; empty box means that jumper was removed.
 2 – 2048 and 4822 – jumper position is according to the mark on board.

The Product has stepwise control of output signal level -12dB, -6dB, 0dB, + 6dB for application with different types of VDR (S-VDR). Select jumper position according to OM of VDR (S-VDR).

2.4 CONNECTION TO SCANTY RADIO STATIONS

The handset base of Scanty radio station has a duplicate audio connector (its

pinout complies with handset connector pinout of the radio station).

To connect the Product interface, act as follows:

- a) connect the Product to the duplicate connector of the base with single core shielded wire (see Figure 4);
- b) set jumper of «MIC» group to position J3;
- c) bridge first and second output terminals «RT».

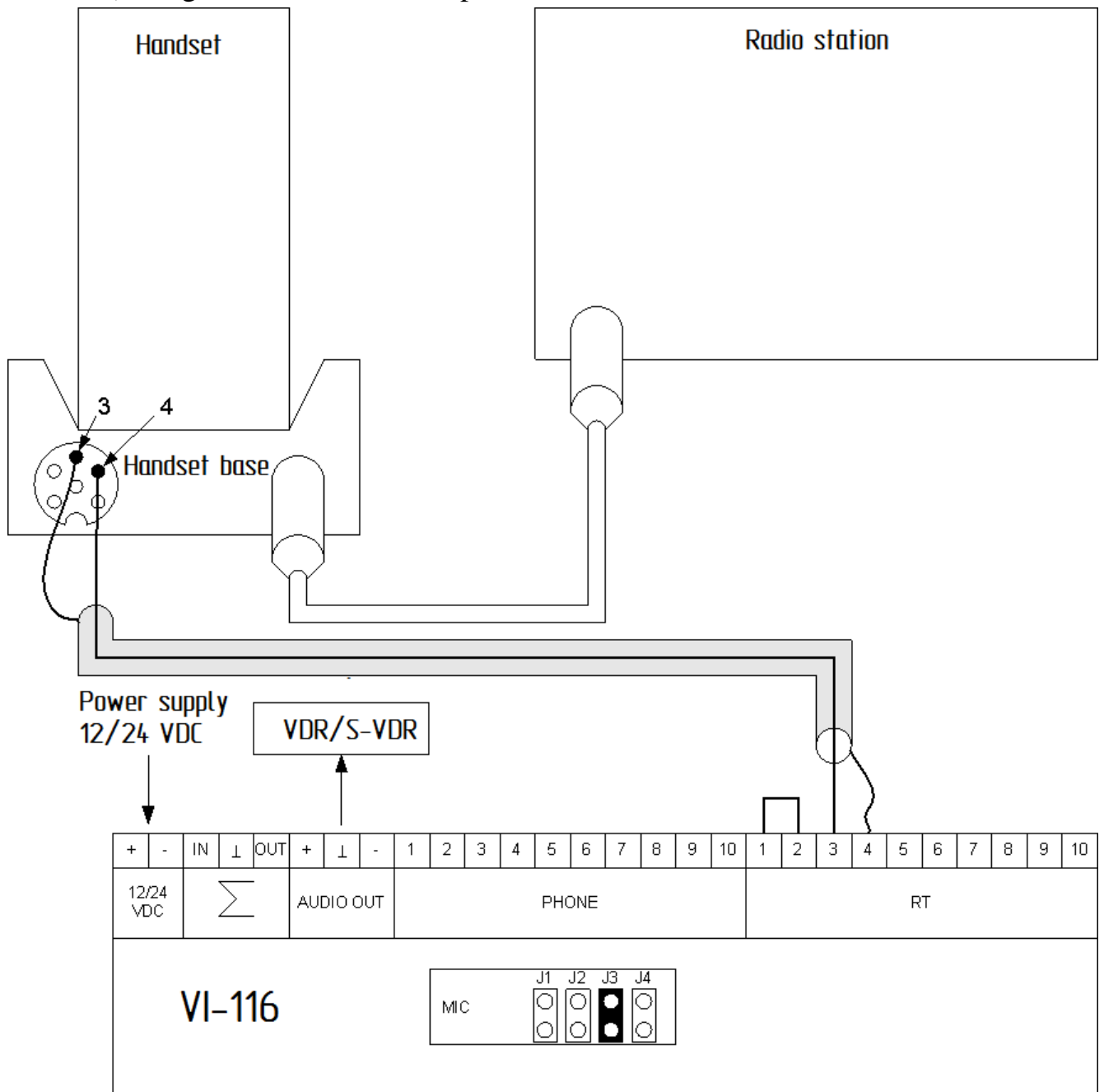


Figure 4 – Connection to SCANTY radio station

3 TECHNICAL SERVICE

3.1 GENERAL DESCRIPTION

Before performing the TS the staff shall familiarize with the Product structure and operation features.

In order to provide safe and reliable operation for the Product, the staff shall maintain all types of TS, as follows:

TS-1 – semi-annual TS;

TS-2 – annual TS.

Both TS-1 and TS-2 are carried out by the company personnel (w/o participation of Manufacturer’s specialists) on the running equipment (in operation).

Table 3 describes recommended amount of consumables for TS.

3.2 SAFETY FEATURES

To learn more about TS maintenance routine, see 3.1.

3.3 MAINTENANCE ROUTINE

Table 5 describes the list of TS works. To learn more about TS procedure, see CL in Tables 6, 7.

Table 5 describes the list of TS works.

Table 5 – TS works

| CL № | Name of work | TS type | |
|---|-------------------------------|---------|------|
| | | TS-1 | TS-2 |
| 1 | Visual check of the Product | + | + |
| 2 | Operation test of the Product | – | + |
| Notes «+» – work is obligatory. «–» – work is not obligatory. | | | |

Table 6 – CL № 1. Visual check of the Product

| To be done | Routine | Man-hours per 1 Product |
|---|--|------------------------------------|
| Visually examine the Product | 1 check completeness and appearance of the Product; mechanical damage, paint defects must be absent; marking plates shall be present; legends shall be read easily; 2 clean up the Product surfaces with clean cloth; 3 remove severe contamination, parts of corrosion, oil spots from the metal surfaces – using ethyl alcohol, avoiding its penetration inside the Product; all surfaces clean dry by clean cloth and dry up; 4 if varnish paint coating is damaged, polish it with sand paper, then clean with alcohol-soaked cloth, cover with varnish AK-113 and dry up | 1 person 5 mins |
| Check cable and bus connection to the Product | 1 remove the cover; 2 check that connectors and attaching screws are tightened; provide further tightening if necessary; 3 check the cable intactness (no mechanical damage) within visibility | 1 person 5 mins |

Table 7 – CL № 2. Operation test of the Product

| To be done | Routine | Man-hours per 1 Product |
|--------------------------------|--|------------------------------------|
| Check operation of the Product | 1 connect radio stations and VDR to the Product according to Figure 2 and Table 4; 2 switch on radio station, the Product and VDR; 3 pick up the handset, press PTT and communicate with other party; 4 release PTT, hang up the handset; 5 retrieve communication data from VDR and playback; 6 make sure that audio playback is correct | 1 person 15 mins |

3.4 PRESERVATION

The Product and set of operational documents are stored in preserved condition in standard packaging boxes.

The preservation is done in full terms, for 2 years, applying protection and packaging.

The representation is done in heated rooms in the same order as the preservation. The Product, SPTA and set of operational documents after representation are placed in package. Storage time – 2 years.

4 STORAGE

The Product must be stored in packaging inside areas complying with the required storage conditions (+5°C...+40°C) with the concentration of dust, oil, moisture and aggressive impurities in the air within the required limits for the working areas of production facilities.

After storage or transportation of the Product below +10°C, it must be unpacked only in heated premises and left in normal climate conditions for 12 hours beforehand.

5 TRANSPORTATION

The Product must be transported in the Manufacturer's transportation package in closed means of transport.

Types of shipment:

- motor vehicle and railroad transportation in closed means of transport (covered cars, multipurpose containers);
- air transportation (in sealed and heated compartments);
- sea transportation (in dry service spaces).

The Product must be transported in compliance with transportation rules applicable for each means of transport.

During loading/unloading operations and transportation, the requirements indicated on warning labels on the boxes/packaging must be observed, and no impacts are permitted since they can affect the safety and performance of the Product.

Inside the means of transport, the packed device must be firmly secured/fastened.

6 DISPOSAL

New equipment, the parts of the Product damaged during operation, and any outage equipment must not be disposed as standard household wastes, since they contain the materials suitable for re-use.

Decommissioned and non-used components of the Product must be delivered to a special waste disposal center licensed by local authorities. You can also send an overage equipment/unit to the manufacturer for its further disposal.

Proper disposal of Product components allows avoiding possible negative environmental and health impacts, and it also allows for proper restoration of components with substantial energy and resources saving.

During operation and upon completion of its service life, the equipment is not hazardous for health and environment

This unit must be disposed according to the rules applied to electronic devices



Any products marked with a crossed trash bin must be disposed separately from standard household wastes

7 WARRANTY

The Manufacturer is under warranty obligations in case of correct System exploitation according to the OM. The Manufacturer will not consider damage claims in case of violation of operating conditions.

More information about warranty terms you can find on the official site of «NPK MSA» LLC, section Support.

Address and contacts of the Manufacturer's service centre:
«NPK MSA», LLC
26E, Kibalchicha str., 192174, St Petersburg, Russia
Tel.: + 7 (812) 602-02-64, 8-800-100-67-19
fax: +7 (812) 362-76-36
e-mail: service@unicont.com

**APPENDIX A
(MANDATORY)
OUTLINE AND INSTALLATION DIMENSIONS**

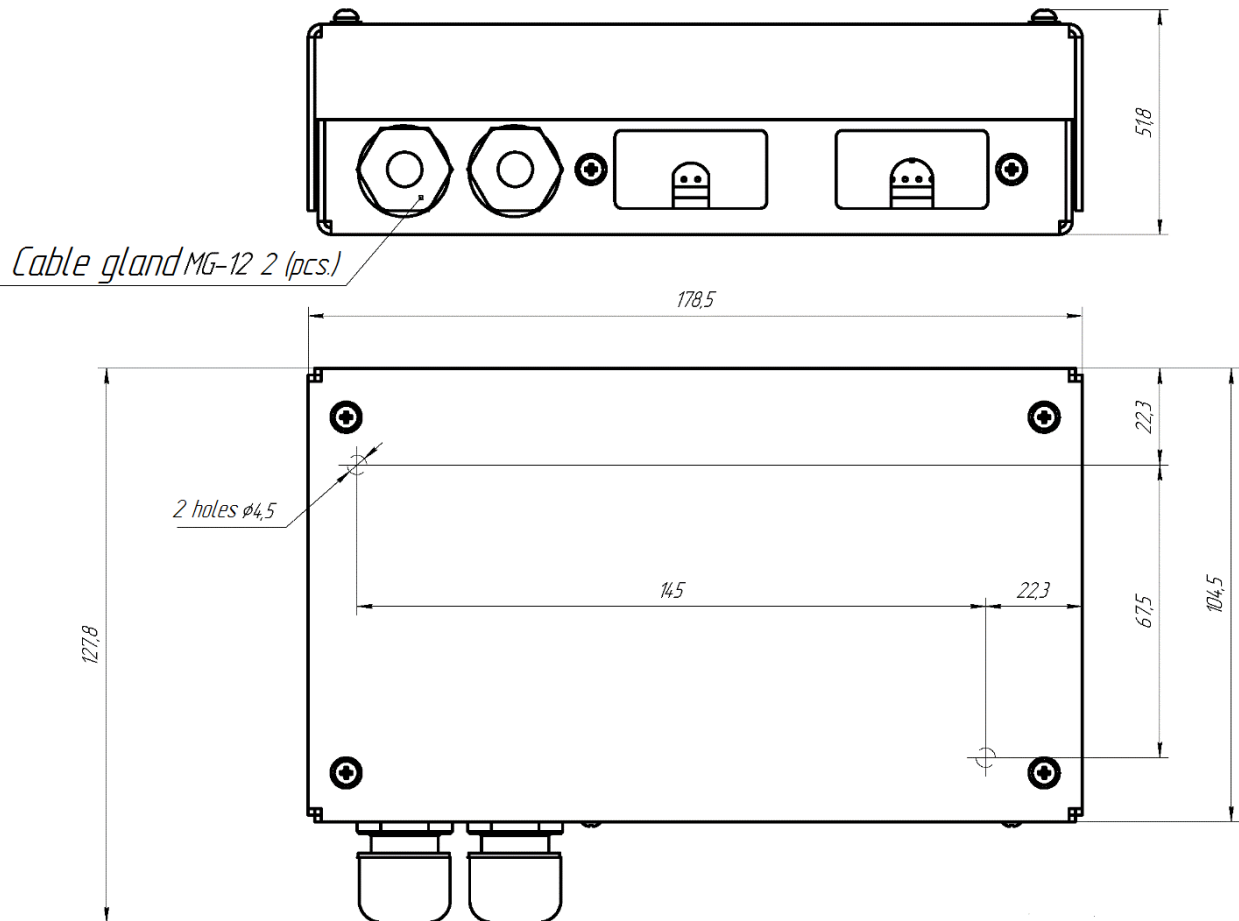


Figure A.1 – Outline and installation dimensions of the Product