



Shipborne systems 2016



«NPK MORSVYAZAVTOMATIKA», LLC.

«NPK MORSVYAZAVTOMATIKA», LLC. is a most dynamic manufacturing enterprise which possesses its own production base and specializes in manufacturing of the following products:

- ▣ electronic shipborne systems and equipment
- ▣ fabricated metal hardware for switchboard room appliances
- ▣ laser nesting layout complexes

«NPK MORSVYAZAVTOMATIKA», LLC. possesses complete-cycle technological facilities to manufacture electronic and electro-mechanic complexes:

- ▣ research
- ▣ design
- ▣ manufacturing
- ▣ test
- ▣ certification
- ▣ warranty and aftersales service
- ▣ recycling

«NPK MORSVYAZAVTOMATIKA», LLC. was granted manufacturer recognition certificates with Russian maritime register of shipping and Russian river register.

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State Standard Certification ГОСТ РВ 0015-002-2012.

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Talk-back loudspeaking connection equipment, «АДС-131» ЦИУЛ.465200.001



Approved by the Russian maritime register of shipping.



Approved by the Russian river register of shipping.

АДС-131 function

Designed to provide internal shipboard loudspeaking and talk-back command connection on ships at any navigation area.

The system is equipped with speaking appliances and peripheral equipment designed for use in various environmental conditions, incl. environments with high level of noise, dust and moisture content (e.g. on-deck). The digital communication technology used is ISDN.

Specifics and advantages of the system

- Possibility to connect substations both with digital and analogue loop carriers.
- Possibility to combine several central blocks into a common network with interconnect address space.
- Possibility to set priority hierarchy among operator stations.
- Selective and group calling of system subscribers (common circular, on-the-list circular).
- Conjugation to the external systems (command broadcast equipment, voyage data recorders, PBX, emergency signaling, entertainment programs broadcast sources).
- Paired connection arrangement between two substations via direct commutation (without connection to the central block).
- Parallel connection of the analogue stations.
- System set-up and configuring either manually or via computer.

Supervisory consoles [dispatcher control boards]

- Possibility to apply consoles as substations (total amount of consoles is confined to the amount of the digital ports of the central block).
- Connection to the supervisory consoles of the wing communication posts (what allows an operator talking to a subscriber while moving away from the primary console).
- Central block connection indication.
- System state indication.

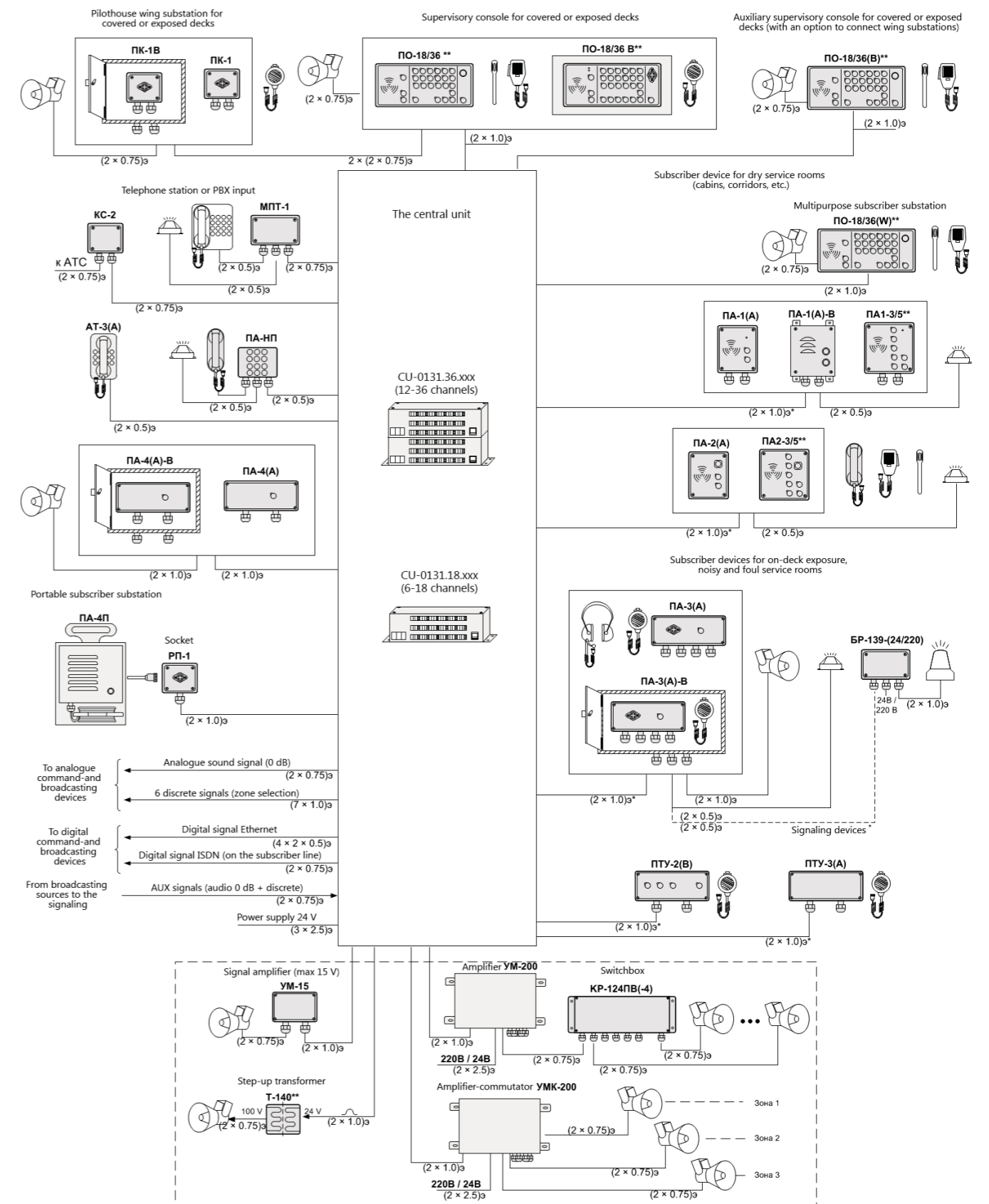
Subscribers

- Possibility to establish "everyone-to-everyone" communication while using consoles and appliances equipped with a dialer.
- Central block connection indication.

System

- Simplicity to commute substations and supervisory consoles to the central block (via parallel-wire line without regard to polarity).
- Enhanced interference immunity, reliability and prime-quality connection.
- A haul over 500 m.
- Possibility to completely replace obsolete connection systems without repeated cable layout.

Overall system connection framework



ПА-1А, ПА-2А, ПА-3А analogue devices connect via 4 screened wires (4 x 1.0) along with the signaling devices being applied, or via two wires (4 x 1.0) along with the signaling devices being applied.

Characteristic	Parameters	
System operating characteristics		
Total amount of subscribers connected	- up to 36* digital (incl. substations and supervisory consoles) or 18 digital and 36 analogue. * up to 126 as an option	
Communication lines used	- digital: parallel-wire line, ISDN type (22 kHz discretization, 16 bit capacity), allows commutation of both supervisory consoles and digital substations - analogue parallel- or four-wire line (to commute analogue substations only)	
A number of supervisory consoles connected	Confined to the number of digital channels of the central block	
Communication modes among devices	Duplex/semiduplex – for digital devices Semiduplex – for analogue devices	
Frequency response [Bandwidth]	100-11000 Hz	
Electrical characteristics		
Power supply voltage	24 (18...36) VDC	
Power consumption	Calculated with the total power consumed with all the devices in the delivery set.	
Operational constraints		
Ingress protection rating	IP22; IP44	IP56
Working temperature	-15°...+55 °C	-40°...+55 °C

Connection framework techniques

- Paired connection (with direct connection of two substations).
- Control room type (single or several consoles and a group of subscribers).
- Combined (a combination of two or more systems into a single one with a common or segregated-into-groups address-space of numbers).



**Central block
(ЦБ-0131.18, ЦБ-0131.36, ЦБ-0131.54)**

Provides commutation among connected devices with subsequent establishment of a communication channel (digital or analogue) for talk-back communication.

- Permits to connect digital and analogue devices.
- Provides conjugation to the external systems (command broadcast equipment, voyage data recorders, PBXs, general emergency signaling, entertainment programs broadcast sources).

Technical characteristics:
 Power supply voltage: 18-36 VDC
 Power consumption:
 ЦБ-18 – up to 20 W
 ЦБ-36 – up to 40 W
 ЦБ-54 – up to 60 W
 Devices to be connected:
 - digital (ISDN type)
 - analogue
 Ingress protection rating: IP22
 Working temperature: -15°...+55°C

Mounting format:
 Hinged (on a mounting panel or a bulkhead).

Supervisory console

ПО-18 supervisory console

Designed for installation on the conning bridge or the central control console to provide an operator with connection to the service facilities.

- Possibility to establish connection with up to 18 subscribers.
- Possible to use as a subscriber substation.
- Implies a possibility to connect a microphone post of the wing conning room, as well with an exterior loudspeaker and a supplementary console.
- Equipped with an embedded in-call annunciators at the relevant channels.
- Provides control elements illumination.
- System state indication.

Technical characteristics:
 Power supply: by a subscriber line
 Power consumption: up to 10 W
 Number of directions: 6/12/18
 Ingress protection rating: IP44
 Working temperature: -15°...+55°C
 Mass: 1.0 kg

Mounting format:
 Into a notch

Accessories:
 MF-1 and MP-2 microphones
 ПК-1 wing substation
 МК-ПО1 mounting bracket
 МК-ПО2 mounting case

ПО-18B supervisory console

Provides connection between an operator and the service facilities; watertight construction.

- Possibility to establish connection with up to 18 subscribers.
- Possible to use as a subscriber substation.
- Implies a possibility to connect a microphone post of the wing conning room, as well with an exterior loudspeaker and a supplementary console.
- Equipped with an embedded in-call annunciators at the relevant channels.
- Provides control elements illumination.
- System state indication.

Technical characteristics:
 Power supply: by a subscriber line
 Power consumption: up to 10 W
 Number of directions: 6/12/18
 Ingress protection rating: IP44
 Working temperature: -15°...+55°C
 Mass: 1.0 kg

Mounting format:
 Into a notch

Accessories:
 MP-3 and MP-3-10 microphones



ПО-36 supervisory console

Designed for installation on the conning bridge or the central control console to provide an operator with connection to the service facilities.

- Possibility to establish connection with up to 36 subscribers.
- Possible to use as a subscriber substation.
- Implies a possibility to connect a microphone post of the wing conning room, as well with an exterior loudspeaker and a supplementary console.
- Equipped with an embedded in-call annunciators at the relevant channels.
- Provides control elements illumination.
- System state indication.

Technical characteristics:

Power supply: by a subscriber line
 Power consumption: up to 18 W
 Number of directions: 24/30/36
 Ingress protection rating: IP44
 Working temperature: -15°...+55°C
 Mass: 1.8 kg

Mounting format:

Into a notch

Accessories:

МГ-1 and МР-2 microphones
 ПК-1 wing substation
 МК-ПО3 mounting cantilever
 МК-ПО4 mounting case

ПО-36В supervisory console

Provides connection between an operator and the service facilities; watertight construction.

- Possibility to establish connection with up to 36 subscribers.
- Possible to use as a subscriber substation.
- Implies a possibility to connect a microphone post of the wing conning room, as well with an exterior loudspeaker and a supplementary console.
- Equipped with an embedded in-call annunciators at the relevant channels.
- Provides control elements illumination.
- System state indication.

Technical characteristics:

Power supply: by a subscriber line
 Power consumption: up to 15 W
 Number of directions: 24/30/36
 Ingress protection rating: IP56
 Working temperature: -40°...+55°C
 Mass: 1.9 kg

Mounting format:

Into a notch

Accessories:

МР-3 and МР-3-10 microphones



Subscriber substations

ПК-1 wing substation

Designed to establish talk-back connection with system substations from the conning room wing (while remote from the supervisory console). Constitutes a remote microphone post connected to the supervisory console (watertight).

- Implies connection of a loudspeaker and a PTT microphone.
- Equipped with a watertight input to connect МР-3, МР-3-10 microphones.
- Used together with the supervisory consoles ПО-18 and ПО-36.
- Permits parallel commutation (not more than 2 posts).

Technical characteristics:

Power consumption: 0,5 W (without loudspeaker connected)
 Mass: 0,6 kg
 Ingress protection rating: IP 56

Mounting format:

Hinged*

* recommended to install into the ЦМ-1 panel, when located on the deck

Accessories:

ГГ-1, ГГ-2, ГГ-3, ГГ-4 loudspeakers
 МР-3, МР-3-10 microphones



ПА-1/ПА-1А subscriber substation

Provides a call set-up and talk-back connection to the supervisory console.

- Equipped with a built-in loudspeaker and a microphone.
- Implies control buttons illumination.
- Equipped with a microphone switch-on and call-in button.
- Permits signaling loops commutation.
- Supplied with a КМ-1 case for a hinge-mounting.

Technical characteristics:

Power supply: by a subscriber line
 Power consumption: 4 W
 Communication channel:
 ПА-1 – digital
 ПА-1А – analogue
 Mass: 0.55 kg
 Ingress protection rating: IP44

Mounting format:

Into a notch,
 Hinged (with the КМ-1 case).

Accessories:

КМ-1 case for hinged mounting
 ЛИ-24, ЛП-24, СЗВ-24 call-on annunciators

ПА-2/ПА-2А subscriber substation

Provides a call set-up and talk-back connection to the supervisory console.

- Equipped with a built-in loudspeaker and a microphone.
- Implies control buttons illumination.
- Equipped with a microphone switch-on and call-in button.
- Permits signaling loops commutation.
- Equipped with an input to commute МГ-1, МР-2 exterior microphones and the phone handset.

Technical characteristics:

Power supply: by a subscriber line
 Power consumption: 4 W
 Communication channel:
 ПА-2 – digital
 ПА-2А – analogue
 Mass: 0.55 kg
 Ingress protection rating: IP 44

Mounting format:

Into a notch,
 Hinged (with the КМ-1 case).

Accessories:

КМ-1 case for hinged mounting
 МГ-1, МР-2 microphones
 ТТ-1 и ТТ-2 telephone handset
 ЛИ-24, ЛП-24, СЗВ-24 call-on annunciators

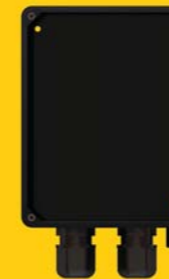


КМ-1 case

Allows hinge-mounting of the substations of the ПА-1, ПА-1А, ПА-2, and ПА-2А types

Technical characteristics:

Material: steel
 Ingress protection rating: IP44 (with installation of a substation)
 Mass: 0.4 kg



ПА-НП subscriber substation

Designed to set up calls with the supervisory console and the other subscribers (substations), portable. May be used while exposed on the deck.

- Portable.
- Equipped with a built-in loudspeaker and a microphone.
- Equipped with a subscriber selection button.
- Equipped with a socket to connect a headset.
- Provided with a socket to connect into the ПП-1 plugs.

Technical characteristics:

Power supply: by a subscriber line
 Power consumption: up to 6 W
 Communication channel: digital (ISDN)
 Cable length: 10 m
 A number of on-called subscribers: up to 99
 Mass: 0.7 kg
 Ingress rating class: IP 56

Mounting format:

Portable

Accessories:

МТТ-1, МТТ-2 headset





PA-1H subscriber substation

Designed to establish talk-back connection with supervisory consoles and system substations.

- Equipped with a dialer to establish connection with the main post.
- An unlimited list of subscribers (posts) available (the connection is established either with an instant button push or dialing a subscriber's number).
- Provides control buttons illumination.
- Equipped with a visual in-call signaling.
- Implies a control buttons illumination adjuster (as an option).

Technical characteristics:

Power supply: by a subscriber line
Power consumption: 6 W
Mass: 0.65 kg
Ingress protection class: IP44

Mounting format:

Into a notch
Hinged

Accessories:

TT-1 watertight telephone handset



PA-3/PA-3A subscriber substation

Establishes calls and talk-back connection with a supervisory console. Primarily applied in noisy and high-humidity premises.

- Provides for headset/microphone connection.
- Equipped with a port to connect the external signaling loops (of incoming calls).
- Provides for a loudspeaker connection.
- Provides for БР-139-220, БР-139-24 relay units connection.

Technical characteristics:

Power supply: by a subscriber line
Power consumption:
- 5 W (without a loudspeaker and in-call annunciators)
Power of the loudspeaker connected:
Up to 15 W (max.)
Communication channel:
PA-3 – digital
PA-3A – analogue
Mass: 0.7 kg
Ingress protection rating: IP 566

Mounting format:

Hinged*
* recommended to install into the ЩМ-1 panel, when located on the deck

Accessories:

MP-3, MP-3-10 microphones
Loudspeakers
БР-139-24 / БР-139-220 relay unit



PA-4/PA-4A

Designed to establish talk-back connection (with a semiduplex mode) via an external loudspeaker. Primarily applied in noisy and high-humidity premises or exposed on deck.

- Equipped with a call button.
- Instant loudspeaker connection to the supervisory console microphone with selection of a substation (the loudspeaker alternates the receive/transfer modes according to the <МКФ> button position).

Technical characteristics:

Power supply: by a subscriber line
Power consumption: 5 W (without a loudspeaker)
Power of the loudspeaker connected:
Up to 15 W (max.)
Communication channel:
PA-4 – digital
PA-4A – analogue
Mass: 0.7 kg
Ingress protection rating: IP 56

Mounting format:

Hinged*
* recommended to install into the ЩМ-2 panel, when located on the deck

Accessories:

ГТ-3 loudspeakers (10 W)



PA-4АП/PA-4ПА portable subscriber substation

Designed to establish talk-back connection (with a semiduplex mode) via an external loudspeaker (portable). May be exposed on deck.

- Portable (with connection to the ПП-1 outlets).
- Equipped with a call button and a 10 m cable.

Technical characteristics:

Power supply: by a subscriber line
Power consumption:
PA-4П up to 15 W
PA-4АП up to 10 W
Communication channel:
PA-4П – digital
PA-4АП – analogue
Cable length: 10 m
Mass: – 7.5 kg for PA-4П
– 7.0 kg for PA-4АП
Ingress protection rating: IP 56

Mounting format:

Portable
Portable – Hinged (while installing (hinged) with preset fastening clamps)

Accessories:

Loudspeakers
A socket to connect ПП-1 portable substation



МПТ-1 subscriber substation

The substation is designed to be connected to the stationary telephone.

- Equipped with a communication line operability indication.
- Provides for a device either with a pulse or tone dialing, or with a PoE interface.

Technical characteristics:

Power consumption: 4 W
Input line type: ISDN
Output line type: FXO, PoE
Mass: 0.9 kg
Ingress protection rating: IP56

Mounting format:

Hinged

Accessories:

Stationary telephone

AT-3, AT-3A telephone set

Designed to establish talk-back connection with supervisory consoles and system substations.

- Equipped with a dialer (instead of instant subscriber-selection buttons), the list of subscribers (posts) available is unlimited.
- Easy to use when setting calls to the PBX [private (automatic) branch exchange] subscribers (if conjugated to the PBX).
- Equipped with a visual in-call signaling.
- Implies a control buttons illumination adjuster (as an option).

Technical characteristics:

Power supply: by a subscriber line
Power consumption: 6 W
Mass: 0.5 kg
Ingress protection class: IP44

Mounting format:

Into a notch
Hinged (when a KM-AT1 case is used)





PA1-3, PA1-5 subscriber substation

Provides a call set-up and talk-back connection to the supervisory console and subscriber substations.

- Equipped with a built-in loudspeaker and a microphone.
- Equipped with subscriber selection buttons (up to 5).
- Implies control buttons illumination.
- Equipped with a microphone switch-on and call-in button.

Technical characteristics:

Power supply: by a subscriber line
 Power consumption: 6 W
 Communication channel: digital
 Number of subscriber selection buttons:*
 for PA1-3 - 3
 for PA1-5 - 5
 Communication channel - digital
 Mass: 0.7 kg
 Ingress protection rating: IP 44

Mounting format:

Into a notch
 Hinged (with KM-2 case)

Accessories:

KM-2 hinged mounting case



PA2-3, PA2-5 subscriber substation

Provides a call set-up and talk-back connection to the supervisory console and subscriber substations.

- Equipped with a built-in loudspeaker and a microphone.
- Equipped with subscriber selection buttons (up to 5).
- Implies control buttons illumination.
- Provides for connection of the call-in annunciators.
- Equipped with a socket to connect an external microphone.

Technical characteristics:

Power supply: by a subscriber line
 Power consumption: 6 W
 Communication channel: digital
 Number of subscriber selection buttons:*
 for PA1-3 - 3
 for PA1-5 - 5
 Communication channel - digital
 Mass: 0.7 kg
 Ingress protection rating: IP 44

Mounting format:

Into a notch
 Hinged (with KM-2 case)

Accessories:

KM-2 hinged mounting case MF-1,
 MP-2 microphones



KM-2 hinged mounting case

Provides for hinged mounting of PA1-3, PA1-5, PA2-3, PA2-5 type substations.

Technical characteristics:

Material: steel
 Ingress protection rating: IP44 (when installing a substation)
 Mass: 0.5 kg



PA-1B/PA-1AB subscriber substation

Provides a call set-up and talk-back connection to the supervisory console (watertight).

- A watertight substation.
- Equipped with a built-in microphone and call-in button.

Technical characteristics:

Power supply: by a subscriber line
 Power consumption: up to 4 W
 Communication channel:
 PA-1B - digital
 PA-1AB - analogue
 Mass: 1.4 kg
 Ingress protection rating: IP56
 Working temperature: -40°...+55°C

Mounting format:

Hinged

Accessories:

BP-139-24/220 relay units and annunciators



Microphone post

PTY-3/PTY-3A voice messaging substation

Designed primarily to transfer messages (unilaterally) via translational lines (while using external amplifier).

- Watertight.
- Provides for messaging via all translational lines accessible.
- Provides for MP-3 and MP-3-10 microphones connection.
- Applied together with YM-15, YM-200 amplifiers.

Technical characteristics:

Power supply: by a subscriber line
 Power consumption: 6 W
 Communication channel:
 PTY-3 - digital
 PTY-3A - analogue
 Mass: 0.71 kg
 Ingress protection rating: IP56

Mounting format:

Hinged*

* recommended to install into the ЦМ-2 panel, when located on the deck

Accessories:

MP-3, MP-3-10 microphones



PTY-2B/PTY-2BA voice messaging substation

Designed primarily to transfer messages (unilaterally) via translational lines (while using external amplifier with particular translational zones).

- Watertight.
- Provides for messaging via particular or all accessible translational lines.
- Provides for MP-3 or MP-3-10 microphones connection.
- Equipped with 3 translation zone selection buttons.
- Applied along with YM-15, YMK-200 amplifiers.
- Used along with MP-3/MP-3-10 microphone.

Technical characteristics:

Power supply: by a subscriber line
 Power consumption: 4 W
 Number of translation zone selection buttons: 3
 Mass: 0.8 kg
 Ingress protection rating: IP 56

Mounting format:

Hinged

Accessories:

MP-3, MP-3-10 microphones

Supplementary devices



A socket to connect PP-1 portable substations

Designed to connect portable substations (ПА-НП, ПА-4П, ПА-4АП) to the subscriber line.

- Equipped with a watertight socket with a protective cover to connect substations.
- Provides for the parallel sockets commutation.

Technical characteristics:

Power consumption: 4 W
 Mass: 0.8 kg
 Ingress protection rating: IP 56

Mounting format:

Hinged



KC-2 signal converter

Designed to conjugate the system (via a subscriber line) to an external PBX.

- Equipped with ports to connect both analogue and digital PBXs.
- Provides for subscriber priority system settings (PBX represents the subscriber).
- Equipped with a communication line operability indication.

Technical characteristics:

Power supply: by a subscriber line
 Power consumption: 4 W
 Signal conversion (depends on a particular setting):
 - ISDN into FXO (and inversely)
 - ISDN into FXS (and inversely)
 - ISDN into PoE /Ethernet (and inversely)
 - ISDN into 0 dB audio signal (input and output) + 6 x of discrete outputs ("dry-contacts" type)
 Mass: 0.71 kg
 Ingress protection rating: IP 44

Mounting format:

Hinged



KP-124PB distribution box

Multipurpose connection device provides for input lines splitting into several output ones.

- Watertight.

Technical characteristics:

Case's material: plastic
 Number of outputs (output terminals): 7
 Loops coupled to a terminal: 3
 Total passing current: 20 A (not exceeding 5 A per terminal)
 Mass: 1.1 kg
 Ingress protection rating: IP 56

Mounting format:

Hinged



T-140PB-H1/H2/H3 matching transformer

12, 24, 48 V/100 V (step-up) matching transformer, watertight.

Technical characteristics:

Working frequencies bandwidth: 50-15000 Hz
 Input voltage: 12 V / 24 V / 48 V
 Maximal power: 60 W
 Mass: 1.95 kg
 Ingress protection rating: IP56
 Output voltage: 100 V

Mounting format:

Hinged



BP-139-24 /BP-139-220 relay unit

Light-acoustic signaling device provides external power supply commutation with the devices connected.

- May be used along with ПА-1(В), ПА-2(В), ПА-3(В), ПА1-3(5), ПА2-3(5) subscriber substations.
- Provides for light- and acoustic signaling devices connection (supplied with either 220 V or 24 V).
- Switches annunciators on.

Technical characteristics:

Case's material: plastic
 Commutation voltage:
 for BP-139-220 - 220 V
 for BP-139-24 - 24 V
 Commutation current: not exceeding 10 A
 Number of output terminals: 2
 Actuating signal – potential-free contact
 Ingress protection rating: IP56
 Mass: 0.9 kg
 Working temperature -40°...+55° C

Mounting format:

Hinged



YM-15 power amplifier

Audio-signal power amplifier (with amplification by 15 W) with power supply by a subscriber line, watertight.

- Provides for the power supply either by mains or by a subscriber line.
- Provides for an external microphone, digital subscriber line, or linear signal (0 dB) connection.

Technical characteristics:

Power supply: by a subscriber line of the (ISDN) system or by an external network (18-50 VDC)
 Working frequency bandwidth: 50 - 10000 Hz
 Output termination: not less than 4 Ohm
 Maximal output power: 15 W
 Mass: 1.2 kg
 Ingress protection rating: IP 56

Mounting format:

Hinged



YM-200/YMK-200 power amplifier

Audio signal power amplifier with an output working potential 100 V.

- 2 operational modes (1-channel or 2-channel).
- Provides for connection of an external microphone, digital subscriber line, linear signal (0 dB).

Technical characteristics:

Power supply voltage: 18-36 VDC
 Output operational voltage: 100 V
 Operational frequency bandwidth: 50-20000 Hz
 No. of output channels (broadcasting zones):
 1 zone – for YM-200
 3 zones – for YMK-200 (commutation is arranged via ПТУ-2В device)
 Inputs (for audio signal reception):
 - digital, ISDN
 - linear, 0 dB
 - microphone, (not isolated)
 Ingress protection grade: IP 22

Mounting format:

Hinge-mounted



ЩМ-1/ЩМ-2 metal board

Void board, watertight, designed for interior installation of devices and supplementary equipment, (applied at the discretion of the customer).

- Equipped with a shutter to access the built-in devices and the interior mounting panel.
- The shutter is equipped with a manual locking/unlocking gear and an open-position fixing device.
- The interlocking device (in a closed position) provides for a possibility to set a padlock.
- Recommended for devices exposed on-board.

Technical characteristics:

Material: steel (dyed)
 Operating angle for the shutter to open - 105°
 Ingress protection grade: IP 67
 Mass: 7 kg

Supplementary devices



MF-1 microphone

Flexible-stem microphone to connect to ПА-2, ПА-2А, ПА2-3, ПА2-5 substations and supervisory consoles.

- Flexible base, with a socket to connect to supervisory consoles and substations.

Technical characteristics:

Type: electret
 Operational frequency bandwidth: 100-20000 Hz
 Impedance: 2 kOhm
 Mass: 0.115 kg

Mounting format:

Into notches of substations and consoles equipped with special notches



MP-2 microphone

A PTT microphone.

- Equipped with a special socket to connect to supervisory consoles and substations.
- Supplied with a fixing corbel. Equipped with an embedded button to connect a microphone to the loop.

Technical characteristics:

Type: dynamic
 Operational frequency bandwidth: 200-4500 Hz
 Impedance: 200 Ohm
 Mass: 0.225 kg
 Cable length: 1.5 m

Mounting format:

Hinge-mounted (with a clip)
 Connects to the following substations:
 ПА-2, ПА-2А, ПА2-3, ПА2-5



MP-3/MP-3-10 microphone

A PTT microphone, watertight. Equipped with a socket to connect to substations.

- Supplied with a fixing corbel.
- Moisture-proof, may be used along with substations most exposed to potential water contact.
- Equipped with an embedded button to connect the microphone to the loop.

Technical characteristics:

Mass: 0.3 kg
Ingress protection grade: IP56
Cable length:
for MP-3 - 3 m
for MP-3-10 - 10 m

Mounting format:

Hinge-mounted (with a clip)
Connects to the following substations:
- ПA-3, ПK-1, ПO-18B, ПO-36B;
- ПTY-3, ПTY-3A, ПTY-2B, ПTY-2BA devices.



ЛA-5 laryngophone

Laryngophone.

- Used together with ТШ-1Л/Ш-1М to operate in a high-noise environment or with a respiratory protection equipment.

Technical characteristics:

Ensures operability in environments with acoustic noise level up to 120 dB
Temperature tolerated: -50°...+50° C
Operational frequency bandwidth: 300-3000 Hz
ЛA-5 laryngophone mass: not exceeding 75 g
Max. power supply voltage: not exceeding 7 V



ТШ-1Л/ТШ-1М

Winter-grade/summer-grade interphone helmet.

- Used together with a laryngophone or a microphone.



KH-1 toe-button

A toe-button used for on/off-switch of the microphone of the ПO18 supervisory console, ПO-36 s/c if not possible to manually manage the microphone.

- May be used together with ПO-18, ПO-36 substations.

Technical characteristics:

Output signal type: voltage-free contact (not exceeding 1 A)
Ingress protection grade: IP44
Working temperature: -15°...+55° C
Mass: 0.4 kg



MГT-1/MГT-2 microtelephone headset

Used together with subscriber substations to communicate in high-noise environments.

- Steel-strip-headband structure.
- Provides for an adjustment for individual setting and comfort.
- MГT-2 is equipped with a switch (<PTT> button) to connect the headset to communication lines.
- Equipped with a watertight socket to connect to subscriber substations.
- Equipped with a built-in anti-noise microphone.

Technical characteristics:

Headset type: passive, monophonic
Operational frequency bandwidth: 200-4000 Hz
Ensures operability in environments with acoustic noise level up to 120 dB
Microphone: hermetic, differential, anti-noise
Working temperature: -15°...+ 55 °C
Ingress protection grade: IP56
Cable length: 3 m or 10 m
MГT-3ПP headset is equipped with a socket



TT-1 telephone receiver with a corbel

TT-1 microphone-telephone receiver designed to maintain talk-back radiotelephone communication.

- Designed for use in the mid-range noise environments.
- Connects to ПA-2, ПA-2A, ПA-1H devices.
- Equipped with a button for speech-circuit connections.

Technical characteristics:

Power supply voltage: 24 VDC
Operational frequency bandwidth: 200-6000 Hz
Power: 4 W
Mass: 0.315 kg
Ingress protection grade: IP44

Mounting format:

Mounted on wall or table with a cantilever bracket



TT-2 telephone receiver with a corbel

TT-2 microphone-telephone receiver designed to maintain talk-back radiotelephone communication.

- Suits for environments with a noise level up to 120 dB.
- Equipped with folding "flap-shut" microphone handset.
- Connects to ПA-2, ПA-2A, ПA-1H devices.

Technical characteristics:

Power: 4 W
Operational frequency bandwidth: 300-3400 Hz
Mass: 0.35 kg
Ingress protection grade: IP44

Mounting format:

Mounted on wall or table with a cantilever bracket



ГT-1 loudspeaker

Ceiling-mounted loudspeaker in a plastic casing, watertight, designed to broadcast and for speech transmission.

- Equipped with a pressure-seal lead-through.
- Equipped with holding clamps.
- Hinge-mounted, embedded.

Technical characteristics:

Operational voltage: 30 V
Operational frequency bandwidth: 200-15000 Hz
Power: 6, 15, 30 W
Sound pressure level: 90 dB
Mass: 0.8 kg
Ingress protection grade: IP22
Casing material: aluminum, plastic
Color: grey



ГT-2 loudspeaker

Speech annunciator designed to broadcast and for speech transmission.

- Provides for a volume control and a program switch included (ГPП-4) or excluded (ГPП).
- Hinge-mounted

Technical characteristics:

Operational voltage: 30 V
Operational frequency bandwidth: 160-12500 Hz
Power: 6, 10, 25 W
Sound pressure level: 89 dB
Mass: 1.5 kg
Ingress protection grade: IP22



ГT-3 loudspeaker

General-purpose horn-type on-deck loudspeaker. Designed for voice message reproduction via translational [relaying] networks and annunciator systems. May be combined with acoustic systems and two-way communication stations.

- Corbel-mounted.
- Supplied together with a cable (the length may be chosen as an option).

Technical characteristics:

Power supply voltage: 18-36 VDC
Operational frequency bandwidth: 300-9000 Hz
Power: 10, 15, 30, 50 W
Sound pressure level: 108 dB
Ingress protection grade: IP56
Cable length: 0.5 m



ГГ-4 loudspeaker

General-purpose horn-type loudspeaker, may be combined with acoustic systems and two-way communication stations. Designed for use exposed on deck sites, in the machinery room, etc. The 2.5 m cable is included by supplement.

- Corbel-mounted.

Technical characteristics:

Power supply voltage: 18-36 VDC
 Sound pressure level: 118 dB
 Power: 15 W
 Material: plastic
 Mass: 1.9 kg
 Ingress protection grade: IP67

ЛП-24/ЛП-220 revolving flashing lamp.

Flashing (revolving) lamp to provide an in-call light signaling in high-noise environments.

- Supplied together with the bulb-cover globes of the following colors: red, orange, green, blue.
- Connects to the БР-139-24 or БР-139-220 relay unit.
- May be supplemented with a corbel.

Technical characteristics:

Power supply voltage:
 for ЛП-24 - 24 VDC
 for ЛП-220 - 220 V 50/60 Hz
 Power: 45 W (ЛП-220), 65 W (ЛП-24)
 Light source:
 Halogen lamp (24 B) – for ЛП-24
 Halogen lamp (220 B) – for ЛП-220
 Revolution rate – 180 rpm
 Working frequency: -40°...+55 °C
 Ingress protection grade: IP56
 Mounting format – vertically only



ЛИ-24 flashing impulse lamp.

A flashing impulse lamp for in-call light signaling in high-noise environments.

- Watertight construction.
- Connects to БР-139-24 relay unit or subscriber substations with a ПА-1(В), ПА-2(В), ПА-3(В), ПА1-3(5), ПА2-3(5) embedded relay.

Technical characteristics:

Power supply voltage: 10-100 VDC
 Power: 3 W
 Flashing frequency: 75 times per minute
 Lamp type: Xenon, 26 cd
 Ingress protection grade: IP 56
 Working temperature: -40°...+55°C
 Mass: 0.13 kg



СЗВ-24/СЗВ-220 annunciator

Sound signaling device designed for in-call signaling in high-noise environments.

- Watertight construction.
- 10 alarm tonalities of the emitted signal.
- The annunciator suits for connection to:
- - БР-139-24 or БР-139-220 relay units
- - substations with ПА-1(В), ПА-2(В), ПА-3(В), ПА1-3(5), ПА2-3(5) relay outputs.
- Delivered in the casings of the following colors:
- grey, red.
- Supplied together with PG-13.5 gland.

Technical characteristics:

Casing material – plastic, shockproof (red, green)
 Power supply voltage:
 for СЗВ-24 - 24 VDC
 for СЗВ-220 - 220 V 50/60 Hz
 Emitted-signal frequency: (depending on the settings)
 for СЗВ-24 over 420-1200 Hz
 for СЗВ-220 over 420-2900 Hz
 Sound pressure – max. 105 dB (with an adjustment option in the range of 30-105 dB)
 Working temperature: 40°...+55°C
 Ingress protection grade: IP56
 Mass: 0.3 kg



СЗС-24/СЗС-220 annunciators

Sound-and-light signaling device designed for in-call signaling in high-noise environments.

- Watertight construction.
- 10 alarm tonalities of the emitted signal.
- The annunciator suits for connection to:
- - БР-139-24 or БР-139-220 relay units
- - substations with ПА-1(В), ПА-2(В), ПА-3(В), ПА1-3(5), ПА2-3(5) relay outputs.
- Delivered in the casings of the following colors:
- grey, red, white.
- Bulb-cover globe color: amber, blue, green, red, yellow.
- Supplied together with PG-13.5 gland.
- The cable is input through an inlet equipped with a «knock-out» choke-plug (with an impressed contour on the case reserved for a possible cable inlet therein).

Technical characteristics:

Casing material – plastic, shockproof
 Power supply voltage:
 for СЗС-24 - 24 VDC
 for СЗС-220 - 220 V 50/60 Hz
 Working temperature: 40°...+55°C
 Ingress protection grade: IP56



Approved by the Russian maritime register of shipping.



Approved by the Russian river register of shipping.

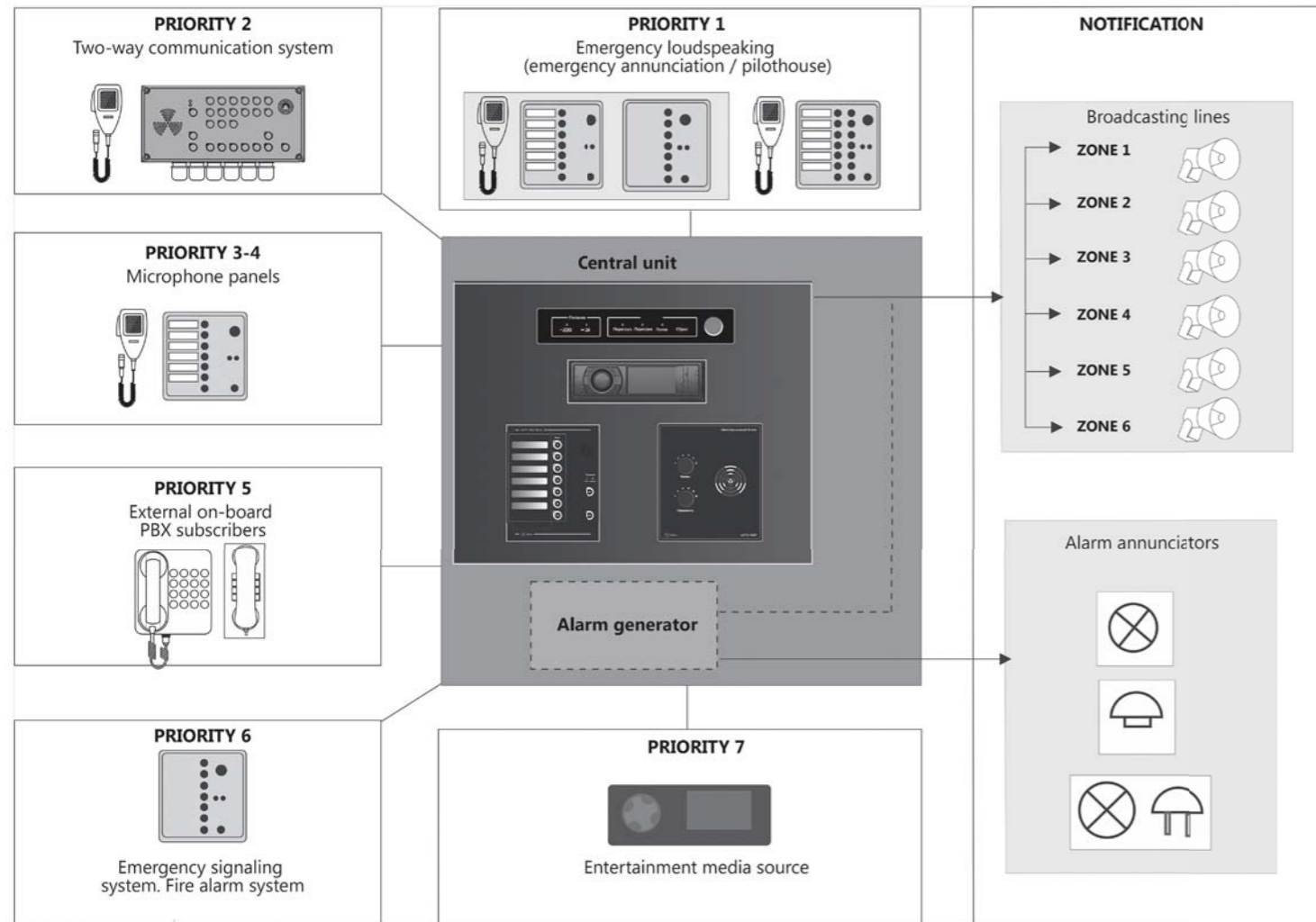


The AKTS-1007 command and loudspeaker system equipment (hereinafter referred to as the system) is designed to be applied in marine and river vessels as voice communication, public address and intra-vessel two-way communication devices.

Peculiarities and advantages of the system

- 6 detached zones for speech command transmission, alarm annunciation and entertainment media broadcasting.
- Built-in duplex amplifier (with 2x200 W or 1x400 W working mode).
- A possibility to connect over 6 microphone panels.
- An obvious ease of microphone panel connection (via a double-wire commutation link regardless of polarity).
- Voice message transmission over the broadcasting zones from the local and remote microphone posts (selectively or via all communication lines simultaneously).
- Voice message priority over the alarm signaling and entertainment media broadcasting.
- Audial transmission-quality control of each broadcast interconnection line.
- Light indication occurring when the microphone is connected to the broadcast interconnection lines.
- Conjugated with PBX.
- Emission of a signal switching the entertainment media broadcasting off (while the voice messages are being transmitted).
- Emission of signals to the vessel control system and the voyage data recorder.
- Sonic-pressure level adjustment of sound- and sound-and-light alarm annunciators.
- Entertainment media broadcasting from an integral or external entertainment media source.
- Loudspeaker volume adjustment locking with an emitted annunciator signal.
- Random selection of broadcast interconnection lines for entertainment media broadcasting.
- Loudspeaker (АДС-131 devices) application and two-way communication.
- The system may be equipped with loudspeakers of dust-ignition-proof construction.

Priority assignment order of the system.

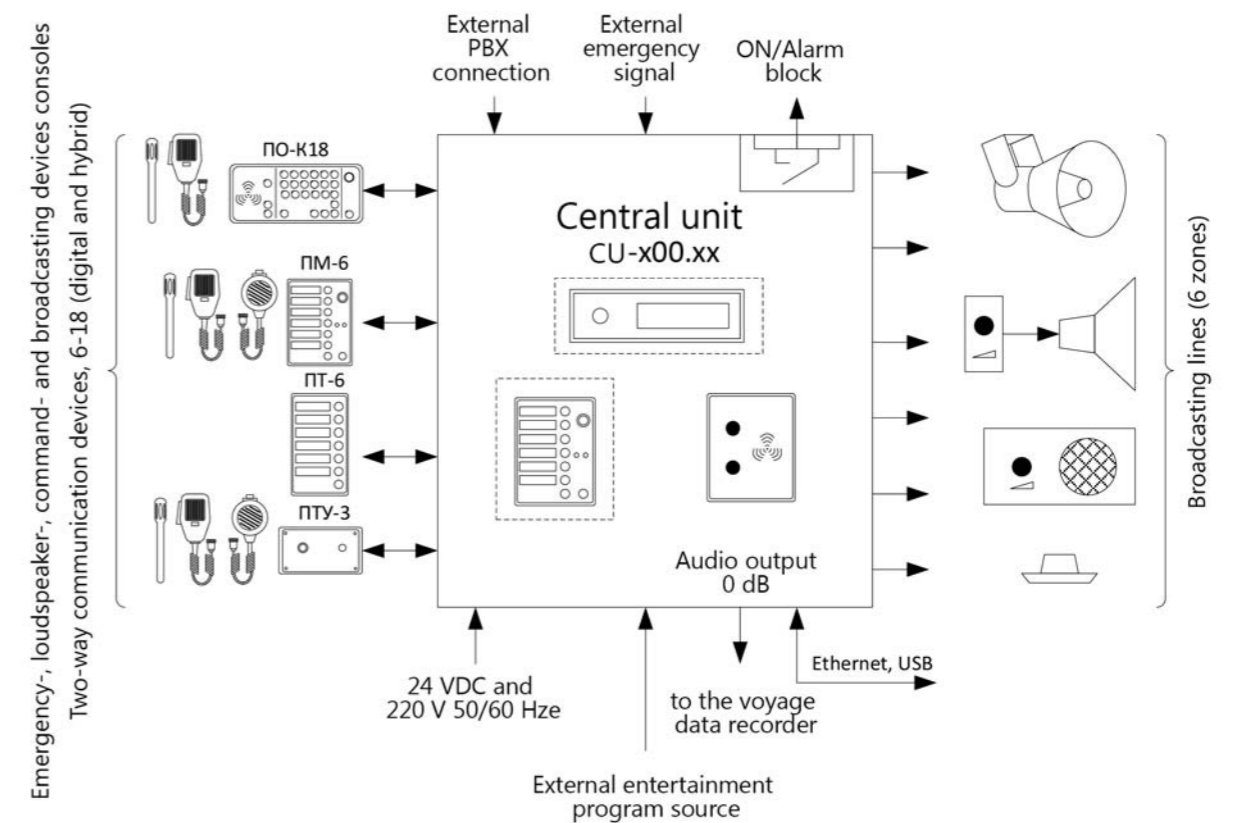


System working characteristics:	
Amplifier power	200 W / 400 W (200x2)
No. of control consoles and loudspeaker devices connected	over 6
No. of broadcasting zones	6
Possibility to connect external broadcasting and sound-recording devices	+
Output voltage	100 V (50 V, 70 V – as an option)
Embedded system options	Media player, Alarm generator, Emergency signaling

Operational characteristics			
	Central unit		
Ingress protection rating:	IP44	IP22, IP44	IP56
Working temperature:	-15..+55°C	-15..+55°C	-40°C .. + 55°C
Storage temperature:	-60..+70°C		

Electrical characteristics	
Power supply:	220 V 50/60 Hz 18...36,0 VDC with a 24 V standby-network mode available.
The overall power consumption	is summed up with all the separate units involved in the system.
Galvanic isolation apart from the power supply network	+

General device connection circuitry





Central interconnecting devices

ЦБ-200, ЦБ-400 central unit

Designed for audio signal reception/ amplification/commutation/transmission to broadcast interconnection lines.

- Voice message transmission to broadcast interconnection lines.
- Provides for two-way communication (with the loudspeakers connected).
- Provides for a possibility to apply as a general on-board emergency alarm system when conjugated with the alarm generator.
- Provides for entertainment media broadcasting when conjugated with the entertainment media record-player.

Technical characteristics:

Power supply voltage: 220 V, 50/60 Hz, or 24 VDC
 Efficiency coefficient of the amplifier: 80%
 The overall power consumed with the central system unit comprises:
 - inherent power consumption of the central system unit – not exceeding 60 W
 - power of the loudspeakers connected (incl. efficiency coefficient of the amplifier)
 - power of the loudspeaker devices and annunciators
 - power of the emergency signaling devices
 Output voltage of the amplifiers: 50/70/100 V
 Broadcasting lines: up to 6
 No. of microphone posts: 6 / 12
 No. of subscriber channels:
 - 6/12 digital
 - 6/12 analogue
 Ingress protection grade: IP22

Mounting format:

Hinge-mounted

Microphone panels



ПМ-1/ПМ-3/ПМ-6 microphone panel

The microphone panel was designed for voice message transmission via broadcast interconnection lines.

- Provides for an emergency alarm emission button.
- Requires MP-1, MP-2 microphones to be connected.

Technical characteristics:

No. of broadcasting-zone selection buttons:
 for ПМ-3 - 3
 for ПМ-6 - 6
 * ПМ-1 provides simultaneous selection of all broadcasting zones together.
 Power consumption:
 for ПМ-6 - 5 Bm
 for ПМ-3 - 4.6 Bm
 for ПМ-1 - 4 Bm
 Ingress protection grade: IP44
 Mass: 0.4 kg

Mounting format:

Mounted on table with МК-ПМ1 cantilever bracket;
 Hinge-mounted with МК-ПМ1Н casing;
 Into a notch

ПМ-1В/ПМ-3В/ПМ-6В microphone panel (watertight)

The microphone panel was designed for voice message transmission via broadcast interconnection lines.

- Watertight.
- Provides for an emergency alarm emission button.
- Includes a cap-cover for the watertight socket

Technical characteristics:

No. of broadcasting-zone selection buttons:
 for ПМ-3В - 3
 for ПМ-6В - 6
 * ПМ-1 provides simultaneous selection of all broadcasting zones together.
 Power consumption:
 for ПМ-6В - 5 Bm
 for ПМ-3В - 4.6 Bm
 for ПМ-1В - 4.6 Bm
 Ingress protection grade: IP56

Mounting format:

Hinge-mounted



ПМ-3.3/ПМ-6.3/ПМ-6.6 microphone panel (combined)

A combined microphone panel designed for voice message transmission and alarm signal emission via broadcast interconnection lines and annunciators circuitry.

- Provides for an emergency alarm emission button. The alarm signals defined by the Ship Damage Control Instructions or LSC Code of the MSC.48(66) resolution are emitted by the alarm generator of the central system unit.
- Stray-keystroke protection.
- Provides for supplementary inclusion of alarm types not present by default.

Technical characteristics:

Power consumption:
 for ПМ-3.3 - 5.6 Bm
 for ПМ-6.3 - 6.3 Bm
 for ПМ-6.6 - 6.6 Bm
 No. of emergency buttons available:
 for ПМ-3.3 и ПМ-6.3 - 3
 for ПМ-6.6 - 3 (+ 3 reserved)
 No. of broadcasting-zone selection buttons:
 for ПМ-3.3 - 3
 for ПМ-6.3 и ПМ-6.6 - 6
 Mass:
 for ПМ-3.3 - 0.6 кг
 for ПМ-6.3 - 0.7 кг
 for ПМ-6.6 - 0.8 кг
 Ingress protection grade: IP44

Mounting format:

Mounted on table with МК-ПМ2 cantilever bracket;
 Hinge-mounted with МК-ПМ2Н casing;
 Into a notch

Accessories:

МК-ПМ2 cantilever bracket for mounting on table
 МК-ПМ2Н casing for hinge-mounting
 MF-1, MP-2 microphone



ПМ-3.3В/ПМ-6.3В/ПМ-6.6В combined microphone panel (watertight)

A combined microphone panel designed for voice message transmission and alarm signal emission via broadcast interconnection lines and annunciators circuitry.

- B Watertight.
- The alarm signals defined by the Ship Damage Control Instructions or LSC Code of the MSC.48(66) resolution are emitted by the alarm generator of the central system unit.
- Provides for an emergency alarm emission button.
- Includes a cap-cover for the microphone socket connection.

Technical characteristics:

Power consumption:
 for ПМ-3.3В - 5.6 Bm
 for ПМ-6.3В - 6 Bm
 for ПМ-6.6В - 6.6 Bm
 No. of emergency buttons available:
 for ПМ-3.3В и ПМ-6.3В - 3
 for ПМ-6.6В - 3 (+ 3 reserved)
 No. of broadcasting-zone selection buttons:
 for ПМ-3.3В - 3
 for ПМ-6.3В и ПМ-6.6В - 6
 Mass: 1.7 kg
 for ПМ-3.3В - 1.7 kg
 for ПМ-6.3В - 1.8 kg
 for ПМ-6.6В - 1.9 kg
 Ingress protection grade: IP56

Mounting format:

Hinge-mounted

Accessories:

A cap-cover for the watertight socket connection.
 MP-3, MP-3-10 microphone.

Emergency signaling panel

ПТ-3/ПТ-6 emergency alarm panel

Emergency signaling panel designed for alarm signal emission via broadcast interconnection lines and annunciators circuitry.

- The alarm signals defined by the Ship Damage Control Instructions or LSC Code of the MSC.48(66) resolution are emitted by the alarm generator of the central system unit.
- Provides for supplementary inclusion of alarm types not present by default.

Technical characteristics:

Power consumption:
 No. of emergency buttons available:
 for ПТ-3 - 3
 for ПТ-6 - 3 (+ 3 reserved)
 Ingress protection grade: IP44
 Mass: 0.4 kg

Mounting format:

Mounted on table with МК-ПМ1 cantilever bracket;
 Hinge-mounted with МК-ПМ1Н casing;
 Into a notch

Accessories:

МК-ПМ1 cantilever bracket for mounting on table
 МК-ПМ1Н casing for hinge-mounting





ПТ-3В/ПТ-6В emergency alarm panel

Designed for alarm signal emission via broadcast interconnection lines.

- The alarm signals defined by the Ship Damage Control Instructions or LSC Code of the MSC.48(66) resolution are emitted by the alarm generator of the central system unit.
- Watertight.
- Provides for supplementary inclusion of alarm types not present by default.

Technical characteristics:

Power consumption:
for ПТ-3В - 4.6 W
for ПТ-6В - 5 W
No. of emergency buttons available:
for ПМ-3В - 3
for ПМ-6В - 3 (+ 3 reserved)
Mass:
for ПТ-3В - 1.3 kg
for ПТ-6В - 1.4 kg
Ingress protection grade: IP56

Mounting format:

Hinge-mounted

Combined supervisory console

ПО-K18 combined supervisory console

A combined supervisory console designed for two-way loudspeaker communication and voice message transmission.

- Provides for supplementary inclusion of alarm types not present by default.

Technical characteristics:

Power consumption:
ПО-K18 - 10 W
No. of emergency buttons available:
ПО-K18 - 0
No. of broadcasting-zone selection buttons: 3 or 6
No. of subscriber-selection buttons:
ПО-K18 - 6 (or 12)
Mass: 1.1 kg
Ingress protection grade: IP44

Mounting format:

Into a notch;
Mounted on table (with МК-ПО1 cantilever)
Hinge-mounted (with МК-ПО2 cantilever bracket)

Accessories:

MP-1, MF-2 microphones



ПО-K18A combined supervisory console

A combined supervisory console designed for two-way loudspeaker communication, voice message transmission, and emergency alarm emission via broadcast interconnection lines (depending on a particular console structure).

The supervisory console has loudspeaker subscriber- and broadcasting zones selection buttons, as well as emergency alarm signaling button cluster.

- The alarm signals defined by the Ship Damage Control Instructions or LSC Code of the MSC.48(66) resolution are emitted by the alarm generator of the central system unit.
- Provides for supplementary inclusion of alarm types not present by default.
- Provides for an emergency alarm emission button.

Technical characteristics:

Power consumption: 12 W
No. of emergency selection buttons:
3 (+ 1 reserved)
No. of broadcasting-zone selection buttons: 3 or 6
No. of subscriber-selection buttons: 6 (or 12)
ПО-K18A - 6
Mass: 1.1 kg
Ingress protection grade: IP44

Mounting format:

Into a notch;
Mounted on table;
Hinge-mounted.

Accessories:

A casing for mounting on table
A casing for hinge-mounting
MP-1, MF-2 microphones



Subscriber substations

Subscriber substations
The system provides for «АДС-131 ЦИУЛ.465200.001» system devices connection

Peripheral equipment

MF-1 microphone

A flexible-stem microphone for connection to the following consoles: ПМ-1, ПМ-3, ПМ-6, ПМ-3.3, ПМ-6.3, ПМ-6.6, ПО- K18, ПО-K18A, and to the loudspeaker devices.

- Flexible base, with a socket for connection to the control panels.

Technical characteristics:

Type: electret
Operational frequency bandwidth: 100-20000 Hz
Impedance: 2 kOhm
Mass: 0.115

Mounting format:

Into notches of substations and consoles



MP-2 microphone

PTT-microphone.

- Equipped with a special socket for connection to substations.
- Equipped with a built-in button for microphone connection to the circuitry.

Technical characteristics:

Type: dynamic
Operational frequency bandwidth: 200-4500 Hz
Impedance: 200 Ohm
Mass: 0.225 kg
Cable length: 1.5 m

Mounting format:

Hinge-mounted (with a clip)
Connects to the following substations:
ПМ-1, ПМ-3, ПМ-6, ПМ-3.3, ПМ-6.3, ПМ-6.6, ПО-K18, ПО-K18A, and to loudspeakers.



MP-3/MP-3-10 microphone

PTT-microphone, watertight

- Equipped with a socket for connection to substations.
- Moisture-proof, may be used along with substations most exposed to potential water contact.
- Equipped with an embedded button to connect the microphone to the loop.

Technical characteristics:

Mass: 0.3 kg
Ingress protection grade: IP 56
Cable length:
for MP-3 - 3 m
for MP-3-10 - 10 m

Mounting format:

Hinge-mounted (with a clip)
Connects to the following substations:
ПМ-1В, ПМ-3В, ПМ-6В, ПМ-3.3В, ПМ-6.3В, ПМ-6.6В; ПТУ-3, ПТУ-3А, ПТУ- 2В, ПТУ-2ВА devices, and to loudspeakers.



Loudspeakers and signaling devices

ГГ-1/100 loudspeaker

A ceiling-mounted watertight loudspeaker designed for broadcasting and voice message transmission.

- Equipped with a pressure-seal lead-through.
- Ceiling-mounted, embedded.

Technical characteristics:

Operational voltage: 100 V
Operational frequency bandwidth: 200-15000 Hz
Power: 6, 15, 30 W
Sound pressure level: 90 dB
Mass: 0.8 kg
Ingress protection grade: IP22
Casing material: aluminum, plastic
Color: grey





ГПН-4

A speech annunciator designed for broadcasting and voice message transmission.

- Provides for construction together with a volume control and a program switch (ГПН-4), or without it (ГПН).
- Hinge-mounting.

Technical characteristics:

Operational voltage: 100 V
Operational frequency bandwidth: 160–12500 Hz
Power: 3, 10, 25 W
Sound pressure level: 89 dB
Mass: 1.5 kg
Ingress protection grade: IP22

ГГ-3/100 loudspeaker

General-purpose horn-type on-board loudspeaker. Designed for broadcasting and voice message transmission.

- Corbel-mounted.
- Supplied together with a 0.5 m cable.

Technical characteristics:

Operational voltage: 100 V
Power: 10, 15, 30, 50 W
Sound pressure level: 108 dB
Ingress protection grade: IP56
Cable length: 0.5 m



ГГ-5/100 loudspeaker

Ensheathed loudspeaker. Designed for broadcasting and voice message transmission.

- Hinge-mounting.

Technical characteristics:

Operational voltage: 100 V
Operational frequency bandwidth: 160–12500 Hz
Power: 3, 10, 25 W
Sound pressure level: 89 dB
Mass: 1.5 kg
Ingress protection grade: IP22



ГГ-6/100 ensheathed loudspeaker

An ensheathed loudspeaker for exposed on-board sites, designed for broadcasting and voice message transmission.

- Watertight.
- Corbel-mounted (moving along the special slider-slot through the loudspeaker's case).

Technical characteristics:

Operational voltage: 100 V
Operational frequency bandwidth: 140–16000 Hz
Power: 4 W, 6 W, 10 W
Sound pressure level: 90 dB
Casing material: aluminum
Color: grey
Mass: 1.9 kg
Ingress protection grade: IP56



ГГ-7/100 loudspeaker

An ensheathed miniature loudspeaker for exposed on-board sites, designed for broadcasting and voice message transmission.

- Watertight.
- Corbel-mounted.

Technical characteristics:

Operational voltage: 100 V
Operational frequency bandwidth: 300–20000 Hz
Power consumption: 8 W, 15 W
Sound pressure level: 101 dB
Mass: 0.7 kg
Ingress protection grade: IP 56



Loudspeakers and signaling devices

ГГ-8/100 loudspeaker

A horn-type metal loudspeaker for exposed on-board sites, designed for broadcasting and voice message transmission.

- Watertight.
- Corbel-mounted.

Technical characteristics:

Operational voltage: 100 V
Operating frequency bandwidth: 300-5000 Hz
Power consumption: 10, 15, 20, 25, 50 W
Sound pressure level: 109 dB
Mass: 2.7 kg
Ingress protection grade: IP 56



ГГ-9/100 loudspeaker

A horn-type metal loudspeaker for exposed on-board sites, designed for broadcasting and voice message transmission.

- Watertight.
- Corbel-mounted.

Technical characteristics:

Operational voltage: 100 V
Operating frequency bandwidth: 140-16000 Hz
Power consumption: 25, 50 W
Sound pressure level: 104 dB
Casing material: plastic
Casing color: grey
Mass: 4.1 kg
Ingress protection grade: IP 56



HS-15 (Ex) loudspeaker

A horn-type metal loudspeaker for exposed on-board sites, designed for broadcasting and voice message transmission.

- B Watertight.
- Corbel-mounted.

Technical characteristics:

Operational voltage: 100 V
Operating frequency bandwidth: 140-16000 Hz
Sound pressure level: 105 dB
Power consumption: 15 W
Mass: 2.8 kg
Ingress protection grade: IP 67
Explosion-protection class: 2 ExdemIIBT6/H2.



DSP-15 (Ex) loudspeaker

A horn-type metal loudspeaker for exposed on-board sites, designed for broadcasting and voice message transmission.

- Watertight.
- Corbel-mounted.

Technical characteristics:

Operational voltage: 100 V
Operating frequency bandwidth: 330-7000 Hz
Power consumption: 15 W
Sound pressure level: 109 dB
Mass: 2.8 kg
Ingress protection grade: IP 56
Explosion-protection class:
– 2 ExdemIIBT5/H2
– 2 ExdemIIBT4/H2
– 2 ExdemICT5/T4
– 2 ExdemIIBT5/H2



ГCY-1 signaling loudspeaker

A horn-type signaling loudspeaker with an amplifier for annunciation with monotone, interruptive or undulating signals.

- Watertight.

Technical characteristics:

Operational voltage: 100 V
Operating frequency bandwidth: 200-5000 Hz
Power consumption: 50 W, 100 W
Sound pressure level: 112 dB
Mass:
Amplifier – 2.4 kg
Loudspeaker (horn) – 5.2 kg
Ingress protection grade: IP 56



PC-24/PC-220 howler

Provides a loud acoustic signaling while emitting warning or in-calling signals.

- Watertight.

Technical characteristics:

Power supply:
for PC-24 - 24 V
for PC-220 - 220 V 50 Hz
Mass: 1.1 kg
Sound pressure level: 108 dB
Ingress protection grade: IP 56





3PC-24 / 3PC-220 bell-howler

Provides a loud acoustic signaling while emitting warning or in-calling signals.

- Watertight.

Technical characteristics:

Power supply voltage:
for 3PC-24 - 24 VDC
for 3PC-220 - 220 V 50 Hz
Power consumption:
for 3PC-24 - 10 W
for 3PC-220 - 22 W
Sound pressure: 92 dB
Mass: not exceeding 3.6 kg
Класс защиты: IP 56

Mounting format:

Hinge-mounted

Supplementary devices

PF-10/PF-25/PF-50 volume control

Designed to control the volume emitted with the 10, 25, 50 W loudspeakers.

- Provides an option to transmit voice messages (at a maximal sound intensity regardless of the current volume-control knob position).
- Requires a three-wire connection scheme to actuate the volume-control-bypass mode.

Technical characteristics:

Operating voltage: 150 V
Power of the loudspeakers connected:
for PF-10 - 10 W
for PF-25 - 25 W
for PF-50 - 50 W
Mass:
for PF-10 - 0.2 kg
for PF-25 - 0.29 kg
for PF-50 - 0.34 kg
Ingress protection grade: IP 22

Mounting format:

Built-in; Hinge-mounted



ПП-4 program switch

Provides for a possibility to connect the loudspeaker to one of the four entertainment media broadcasting loops.

- Provides for a possibility to transmit voice messages regardless of the current position of the program switch.

Technical characteristics:

Commutated voltage: up to 150 V
Max. power handling: 100 W
No. of switch positions: 4 plus "OFF"
Mass: 0.35 kg
Ingress protection grade: IP 22

Mounting format:

Built-in; Hinge-mounted (as an option)



БКП-120T power supply commutation unit

Designed to commute input power supply circuits (mains/standby and standby/emergency) according to the current loading mode.

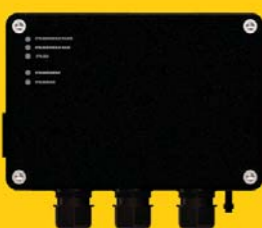
- Watertight.
- Provides indication thus: via three input circuits (of the mains, standby, and emergency power supply) and via two output ones (via the mains and the standby one).

Technical characteristics:

No. of inputs:
1 - to the main power supply network
2 - to the standby network (for 24 V and 220 V)
1 - to the emergency p/s network
No. of outputs:
1 - to the main / standby power supply network
1 - to the standby / reserved power supply network
Commutated voltage: up to 300 V
Max. power handling: 1000 W
No. of outputs: 2
Max. current: 40 A
Mass: 1.4 kg
Ingress protection grade: IP 56

Mounting format:

Hinge-mounted



ПТТ-2В/ПТТ-3 voice message transmission substation

ПТТ-3 - designed to transmit messages via broadcast interconnection lines (through the external amplifier).

ПТТ-2В - designed to transmit messages via three broadcast interconnection lines (selectively or simultaneously).

- Watertight.
- Equipped with a port to connect MP-3, MP-3-10 handheld microphone.
- Equipped with 3 broadcasting-zone-selection buttons (only with ПТТ-2В).

Technical characteristics:

Power consumption: 4 W
No. of the broadcasting-zone-selection buttons - 3 (only for ПТТ-2В)
Mass: for ПТТ-3 - 0.8 кг
for ПТТ-2В - 0.9 кг
Ingress protection grade: IP 56

Mounting format:

Hinge-mounted

Accessories:

MP-3, MP-3-10 microphones

ЩМ-3/ЩМ-4 metal board

Designed for interior installation of devices and supplementary equipment, (applied at the discretion of the customer), watertight.

- Provides for a possibility to set a padlock.

Technical characteristics:

Mass:
for ЩМ-3 - 6.4 кг
for ЩМ-4 - 6.9 кг
Ingress protection grade: IP 56

Mounting format:

Hinge-mounted



T-140ПН-60/120 matching transformer

Designed to transform a sound signal of particular amplitude into a sound signal of different amplitude through a wide frequency transmission bandwidth.

- Watertight.

Technical characteristics:

Primary-circuit voltage: 100 V
Output voltage: 120-70-50-30 V
Working frequency bandwidth: 100-20000 Hz
Power consumption:
for T-140-ПН60 - 60 W
for T-140-ПН120 - 120 W
Ingress protection grade: IP 56
Mass: 1.5 kg

Mounting format:

Hinge-mounted



M3M-1 microphone-panels parallel-bridging device

Provides parallel connection of the microphone panels in the case as an insufficient number of the digital ports remains available at the central system unit.

- Admits connection of the digital substations and АДС-131 two-way communication supervisory consoles.

Technical characteristics:

Power supply voltage: 18...36 VDC
Power consumption: not exceeding 20 W
No. of ports for supplementary panels connection: up to 12
Mass: 3.3 kg
Ingress protection grade: IP 56

Mounting format:

Hinge-mounted





Approved by the Russian maritime register of shipping.



Approved by the Russian river register of shipping.

The televisionary surveillance system is designed to provide a remote surveillance over the relevant zones and vessel rooms with an automatic registration of the data received to the built-in data storage device.

General system characteristics

Video camera type	Parameter	
	Video signal recorder	
	PB-8	PB-16
System register type	Digital video signal register, DVR-type	
Type of video cameras connected	Analogue-output signal cameras, Composite-video-type (composite color signal)	
No. of video signals	8 (1Vp-p 75 Ω), BNC slot	16 (1Vp-p 75Ω), BNC slot
Record rate (common / single-channel)	(200 / 25) κ/c (352x288, CIF) (100 / 12) κ/c (704*288, HD1) (50 / 6) κ/c (704*576, D1)	
Video-archive disk capacity	2 x HDD SATA 3.5 (1 Tbyte/2 Tbyte)	2 x HDD SATA 3.5 (1 Tbyte /2 Tbyte)
Record format	H.264 compression standard	
Video-archive playback	The integral video-archive record-player; video-archive export to the USB-storages supporting H.264, AVI, WAVE formats	
Autoview (No. of channels)	8	16
Screen division (No. of windows)	8, 4, PIP, ZOOM	16, 9, 4, PIP, ZOOM
Video outputs	1 x VGA (D-Sub / DBH-15), 1280*1024 1 x Composite Video (BNC), 720*576 or more (when using special ports expansion devices)	
Alarm inputs/outputs	8 (H3, HP) / 1	16 (H3, HP) / 4
Control	USB-mouse, video-register control console (RS-485 interface), AF- and PTZ-cameras control console (RS-485 interface)	
Power supply	24 B (18-36 VDC), or by the mains 220 V, 50/60 Hz – by BPS-114-24 power supply unit, or by another power supply unit approved by the Register	
Operational constraints		
Ingress protection	IP22, IP44, IP56, IP66	
Working temperature	-15 °C ... +55 °C or -40 °C ... +55 °C	

General connection scheme

Specific features:

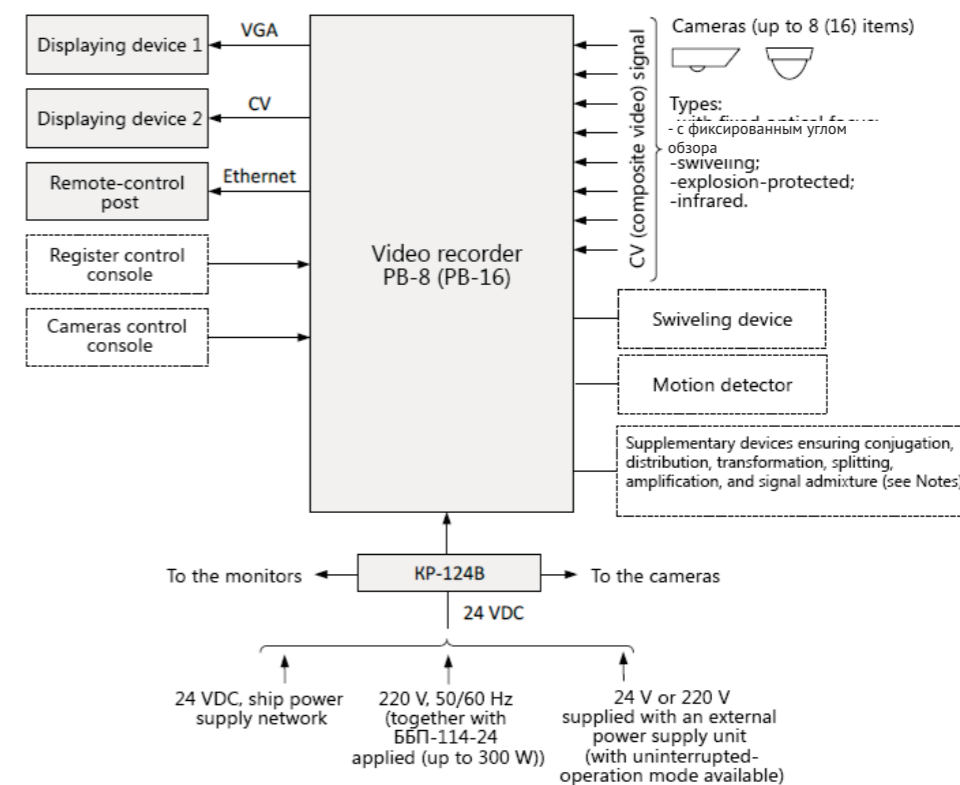
- The cameras applied: stationary (with one of the listed angles of view) / with zoom (AF, Zoom) / Pan/Tilt/Zoom swivel-type (PTZ) / thermal-imaging (infrared) / explosion-protected (1Exd IIB T6X, 1Exd IIC T6) / equipped with a lens-washer and a lens-wiper / equipped with heating (for exposed on-deck sites).
- Screen sizes of the system monitors used: 4:3 - 15", 21.3", 23" и 10,4 " (when used as an emergency one) / 5:4 - 17", 19" / 16:9 - 24".
- Mechanical cameras and recorders control: provided by camera-control console, trackball/mouse, remote control (via Ethernet), with the recorder-control console (with the relevant buttons).
- The cameras may be located both indoors and exposed on-deck.

The system ensures the following:

- Remote surveillance within the secured perimeters;
- Video image transmission to two (and more) surveillance consoles as well as to the remote control station;
- Playback of the video-stream received from the cameras;
- Video-data record and storage in the register-archive.
- Both local and remote access to the register-archive.
- Search, playback (review), copy and transmission of the data recorded (extracted from the archive).
- An automatic switch to the night-vision mode under the dimming light with concomitant activation of the black-and-white mode.

Optional equipment:

- Presence detector (motion detector);
- Infrared projector (nocturnal illumination);
- Uninterrupted power supply (UPS) device with an integral accumulator battery (ББП-114-24);
- Other ancillary devices (splitters, amplifiers, signal converters, etc.)



Nomenclature and specific features of the vice cameras

Type of video camera	Characteristics								Angle of view	Protection class	Working temperature
	Zoom	PTZ	Ex	ИК	T	HC	CO	CC			
KB-1KAB									F*	IP66	-40 ... +55 °C
KB-1KABH							+		F*	IP66	-40 ... +55 °C
KB-1KABX									F*	IP66	-40 ... +55 °C
KB-1KABФ	+			+					2..55°	IP66	-40 ... +55 °C
KB-1KABФ-Н	+					+			2,8 .. 48°	IP66	-40 ... +55 °C
KB-1KABФ-Ч	+					+	+	+	2,8 .. 48°	IP66	-40 ... +55 °C
KB-1KABП		+		+					2..55°	IP66	-40 ... +55 °C
KB-1УАВП		+							2..55°	IP66	-40 ... +55 °C
KB-3УА									F*	IP44	-15 ... +55 °C
КВА-3УАН							+		F*	IP66	-40 ... +55 °C
KB-1KAB(Ex)			+						F*	IP66	-40 ... +55 °C
KB-2KAB(Ex)			+						F*	IP66	-40 ... +55 °C
КТ-1KAB					+				-	IP66	-15 ... +55 °C

Notes:
 Zoom – a camera with variable optical zoom;
 PTZ – swiveling camera with a remote-control function;
 Ex – explosion-protected camera;
 ИК – a camera equipped with an infrared illumination
 T – thermal-imaging camera;
 HC – a camera with a stainless-steel casing.
 CO – a lens-wiper included (the lens-washer liquid tank is not supplied)
 CC – both the lens-wiper and the lens-washer are included
 F* – a fixed angle of view, may be pre-set prior to the order completion

Nomenclature and primary parameters (of the video display monitor)

Display type	Diagonal (format)	Overall dimensions	Resolution	Ingress protection grade	Working temperature
ДС-1004	10,4" (4:3)	313 × 288,5 × 117	800 × 600	IP56/IP22*	-15 °C ... +55 °C
ДС-1504	15" (4:3)	371 × 340,5 × 77	1024 × 768		
ДС-1704	17" (5:4)	411,5 × 388 × 75	1280 × 1024		
ДС-1904	19" (5:4)	449 × 418 × 75	1280 × 1024		
ДС-2104	21" (4:3)	510 × 443 × 81	1600 × 1200		
MV 23	23" (4:3)	602x543x81	1600x1200		
MV 24	24" (16:10)	530x447,5x81,5	1920x1200		

Notes – * front / rear side of the display

Video recorders and commutators

PB-8, PB-16 video-signal recorders

A video-signal recorder constitutes a device with a pre-installed camera- and video stream-management system/software.

Technical characteristics:
 Power supply voltage: 18...36 VDC
 Power consumption:
 for PB-8 – not more than 45 W
 for PB-16 – not more than 60 W
 No. of video channels:
 for PB-8 - 8
 for PB-16 - 16
 Protection methods available: galvanic separation throughout the power supply network, against overvoltage, against accidental polarity reversal
 Working temperature: -15...+55 °C
 Mass:
 for PB-8 - 2.9 kg
 for PB-16 - 4.9 kg
 Ingress protection grade: IP22
Mounting format:
 Hinge-mounted; mounted on table



ВП3-1 CV-signal video-commutator

The commutator switches CV-signal from three video cameras to a single display.

Technical characteristics:
 Inputs: x3 (signal type – CV)
 Outputs: x1 (signal type – CV)
 Switching modes:
 - with buttons of the front panel
 - remote control (with a voltage-free signal type)
 Signal/noise: 73 dB
 Amplitude: 0,7 – 1,8 В (1Vpp/75Ω)
 Power supply voltage: 18...36 VDC
 Power consumption: 2 W
 Working temperature: -15...+55 °C
 Ingress protection grade: IP22
 Mass: 0,3 кг



Encased cameras

KB-1KAB video camera

An encased analogue color video camera with a fixed focal distance for exposed on-deck application.

Technical characteristics:
 Power supply voltage: 18...36 VDC
 Power consumption: 7 W
 "Cold-start" preventive protection, heating till -10 °C
 Working temperature: -40...+55 °C
 Ingress protection grade: IP66
 Signal type: analogue PAL
 Resolution: 700 television lines
 Mass: 1.27 кг
 Casing material: aluminum



- Pre-set with a fixed angle of view (specified prior to the order completion).
- Equipped with integral heating.

KB-1KABH video camera

An encased analogue color video camera (made of stainless steel) with a fixed focal distance for exposed on-deck application.

Technical characteristics:
 Power supply voltage: 9...36 VDC
 Power consumption: 12 W
 Heating power: 10 W
 "Cold-start" preventive protection, heating till -10 °C
 Working temperature: -40...+55 °C
 Mass: 3,1 кг
 Ingress protection grade: IP66
 Signal type: analogue PAL
 Resolution: 700 television lines
 Casing material: stainless steel
 Built-in heating



- Pre-set with a fixed angle of view (specified prior to the order completion).
- Equipped with integral heating.

KB-1KABX video camera

An external-type encased analogue color video camera for exposed on-deck application.

Technical characteristics:
 Power supply voltage: 18...36 VDC
 Power consumption: 35 W
 Working temperature: -40...+55 °C
 Mass: 2,5 кг
 Heating power: 31 W
 Ingress protection grade: IP66
 Signal type: analogue PAL
 Resolution: 700 television lines
 Casing material: aluminum



- Pre-set with a fixed angle of view (specified prior to the order completion).
- Equipped with integral heating.



KB-1KABΦ video camera

An encased analogue color video camera with a regulated optical zoom and variable focal distance (angle of view).

- Angle of view: 2...55°. Regulated zoom: 30-X optical zoom.
- Equipped with integral heating and infrared illumination.

Technical characteristics:
 Power supply voltage: 18-36 VDC
 Power consumption: 28 W
 Heating power: 20 W
 "Cold-start" preventive protection, heating till -10 °C
 Working temperature: -40...+55 °C
 Mass: 2,1 кг
 Ingress protection grade: IP66
 Angle of sight: 2°... 55°
 Zoom: 30x, optical
 Infrared illumination range: up to 60 m
 Control: via digital RS-485
 Signal type: analogue PAL
 Resolution: 700 television lines



KB-1KABΠ video camera

An encased analogue color video camera (swiveling).

- Angle of view: 2...55°. Regulated zoom: 30-X optical zoom.
- Equipped with integral heating and infrared illumination.

Technical characteristics:
 Power supply voltage: 18-36 VDC
 Power consumption: 87 W
 "Cold-start" preventive protection, heating till -10 °C
 Working temperature: -40...+55 °C
 Ingress protection grade: IP66
 Angle of sight: 2°... 55°
 Slewing angle: 0... 355°
 Tilting angle: -10... 80°
 Zoom: 30x, optical
 Infrared illumination range: up to 60 m
 Control: via digital Pelco-D channel



KB-1KABΦ-H video camera

An encased analogue color video camera (made of stainless steel) with a regulated optical zoom and variable focal distance (angle of view).

- Angle of view: 3...86°. Zoom: 360-X.
- When ordering KB-1KABΦ-Ч the lens-washer is included in the supply set.

Technical characteristics:
 Power supply voltage: 18-36 VDC
 Power consumption: 38 W
 Heating power: 30 W
 Working temperature: -40...+55 °C
 Resolution: 700 television lines
 Angle of sight: 3...86°
 Zoom: 360X
 Optical: 36X
 Digital: 10X
 Signal type: analogue PAL
 Ingress protection grade: IP66
 Casing material: stainless steel



KT-1KAB video camera

An encased thermal-imaging analogue color video camera.

- Focal distance (horizontal/vertical angle of views): 13 mm (45;37), 25 mm (25;20), 35 mm (18;14) – specified prior to the order completion.

Technical characteristics:
 Power supply voltage: 14-32 VDC
 Power consumption: 20 W
 Heating temperature: 15 W
 Working temperature: -40...+55 °C
 Mass: 2,1 кг
 Control: Pelco-D
 Ingress protection grade: IP66
 Sensor resolution: 640x480
 Video output: PAL composite video signal



Dome cameras

KB-1YABΠ video camera

A dome color analogue swivel video camera.

- Angle of view: 2°... 69,5°.
- Equipped with a heating module.
- Admits permanent-axial-rotation mode.

Technical characteristics:
 Power supply voltage: 18-36 VDC
 Power consumption: 45 W
 Heating power: 30 W
 Zoom: 30x optical, 10x digital.
 Slewing angle: 360° (permanent rotation)
 Tilting angle: 180°
 Control: Pelco-D
 Resolution: 700 television lines
 Working temperature: -40...+55 °C
 Ingress protection grade: IP66
 Mass: 1,5 кг



KB-3YA video camera

A dome analogue color video camera.

Technical characteristics:
 Power supply voltage: 18-36 VDC
 Power consumption: 3 W
 Working temperature: -15...+55 °C
 Ingress protection grade: IP44
 Mass: 0,96 кг
 Resolution: 700 television lines



KBA-3YAH video camera

A dome analogue color video camera (made of stainless steel) for on-deck exposed application.

- Equipped with an integral heating and infrared illumination

Technical characteristics:
 Power supply voltage: 18-36 VDC
 Power consumption: 33 W
 Heating power: 25 W
 Infrared illumination power: 5 W
 Infrared illumination range: up to 60 m
 Casing material: stainless steel
 Working temperature: -40...+55 °C
 Signal type: analogue PAL
 Resolution: 700 television lines
 Power consumption: 3 W
 Ingress protection grade: IP66

Explosion-protected cameras



KB-1KAB (Ex) video camera

An ensheathed color analogue explosion-protected video camera 1Exd IIB T6X.

Technical characteristics:
 Power supply voltage: 18-36 VDC
 Power consumption: 28 W
 Heating power: 21 W
 Working temperature: -40...+55 °C
 Ingress protection grade: IP66
 Mass: не более 3,5 кг
 Explosion-protection grade: 1ExdIIBT6X



KB-2KAB (Ex) video camera

An ensheathed color analogue explosion-protected video camera 1Exd IIC T6.

Technical characteristics:
 Power supply voltage: 18-36 VDC
 Power consumption: 27 W
 Heating power: 20 W
 Working temperature: -40...+55 °C
 Ingress protection grade: IP66
 Mass: not more than 14 kg
 Explosion-protection grade: 1Exd IIC T6



Remote control panel

PY-1K camera control panel

PTZ-cameras remote control panel. LCD.

- There are a joystick and a keyboard for an efficient control over up to 255 devices.
- "Point-motion" software control [PTZ-function auto-preset.]

Technical characteristics:
 Power supply consumption: 18-36 VDC
 Power consumption: 10 W
 Interface: RS-485
 Working temperature: -15...+55 °C
 Ingress protection grade: IP44
 Mass: 0,8 кг

Mounting format:
 Into a notch; mounted on table



PY-1BP video-recorder control panel

Remote video-recorder control panel.

Technical characteristics:
 Power supply consumption: 18-36 VDC
 Power consumption: 10 W
 Interface: RS-485
 Working temperature: -15...+55 °C
 Ingress protection grade: IP44
 Mass: 0,5 кг

Mounting format:
 Into a notch; mounted on table



MШ-1-50B trackball.

MШ-1-50B trackball with strain adjustment. Primary application focuses on high-humidity and intense-vibration environments.

Technical characteristics:
 Power consumption voltage: 5 VDC (with USB port)
 Power consumption: 2 W
 Mechanical durability: 1·10⁶
 Operating time to failure: 80 000 h
 Working temperature: -15...+55 °C
 Ingress protection grade:
 - IP66 (front side)
 - IP22 (rear side)
 Mass: 0,15 кг
 Connection interface – USB (PS/2 – as an option)
 Target tracking system – laser-based.
 Ball pull-push force applied – able to be adjusted (free rotation completely fixed).



PY-1 rotary device

The rotary device is designed for slewing angle measurement and video camera tilting.

Technical characteristics:
 Power supply voltage: 18-36 VDC
 Slewing angle: 0...355°
 Tilting angle: -10...80 °C
 Slewing rate: 7.5°/c
 Tilting rate: 6°/c
 Power consumption: 60 W
 Working temperature: -40...+55 °C
 Ingress protection grade: IP66
 Mass: 6,9 кг
 Admissible load tolerated: 4 kg

Supplementary equipment



PY-2 rotary device

The rotary device is designed for slewing angle measurement and video camera tilting.

Technical characteristics:
 Power supply voltage: 18-36 VDC
 Power consumption: 70 W
 Slewing angle: 0...355°
 Tilting angle: -20...70°
 Slewing rate: 0...20 °/c
 Tilting rate: 0...5 °/c
 Working temperature: -40...+55 °C
 Ingress protection grade: IP66
 Mass: 15 кг
 Admissible load tolerated: 15 kg



ПИ-1 infrared projector

An infrared projector.

Technical characteristics:
 Power supply voltage: 18-36 VDC
 Power consumption: 32 W
 Range of sensitivity (together with the camera) 0.003 lx with range of remoteness up to 200 m
 Radiation angle: 14°
 Irradiation of the neighboring zone (within the 80° angle): up to 15 m
 Emission wavelength: 850 nm
 Working temperature: -40...+55 °C
 Ingress protection grade: IP66
 Mass: 2,3 kg



ДП-1 presence detector.

Motion detector indicates any unauthorized presence within the secured sectors.

Technical characteristics:
 Power supply voltage: 18-36 VDC
 Power consumption: 3 W
 Assembly height: 1.8-2.4 m
 Detection method: IR + SHV
 Detection range: 15 m
 Working temperature: -40...+55 °C
 Ingress protection grade: IP66
 Mass: 0,5 кг

Other supplementary devices

МОД-1	Modulator	CV-signal interposition/conversion to the TV-signal
ВУ-1	VGA-signal amplifier	VGA-input-signal amplification up to 1.5 V level
УС-1	CV-signal amplifier	CV-input-signal amplification up to 2.5 V level
ДЭИ-1	Display image slicer	Displays the input signal onto two monitors
ПС-1	CV-to-VGA-signal converter	For CV-to-VGA conversion
РС1-2	VGA-signal splitter	VGA-signal splitter into 2 directions
РС1-3	CV-signal splitter	CV-signal splitter into 3 directions
ББП-114-24	Power supply unit	With an integral accumulator battery of 20 ampere-hour capacity
АВП1-1	Loop extender transmitter	Loop extender transmission device with 1.5 km transmission range.
АВП1-2	Loop extender transmitter	Loop extender transmission device with 1.5 km transmission range.
АВП1-3	16-channel loop extender receiver	Loop extender transmission device with 1.5 km transmission range.



Approved by the Russian Maritime Register of Shipping

On-board meteorological station “Periscope”

Designed for environment climate characteristics measurement, acquisition and presentation of statistical and current climatic data with subsequent transmission to the display and other external systems.

Special features:

- One may select any of the 5 meteosensors, 1 water temperature sensor, and 2 LCD-indicators equipped with touchscreen (8” or 10.4”).
- A possibility of simultaneous use of several indicators within the system.
- Several sensors are equipped with GPS receiver (it is not required to connect the log and the gyrocompass to verify the vessel velocity and course, and to compute the absolute wind parameters).
- System control executes with a touchscreen, trackball (with strain adjustment)/mouse.
- Information output to the external systems executes via NMEA format.
- Data import from the meteosensors via NMEA, ASCII formats.
- A possibility to operate in frost (provides for sensor heating).

System advantages

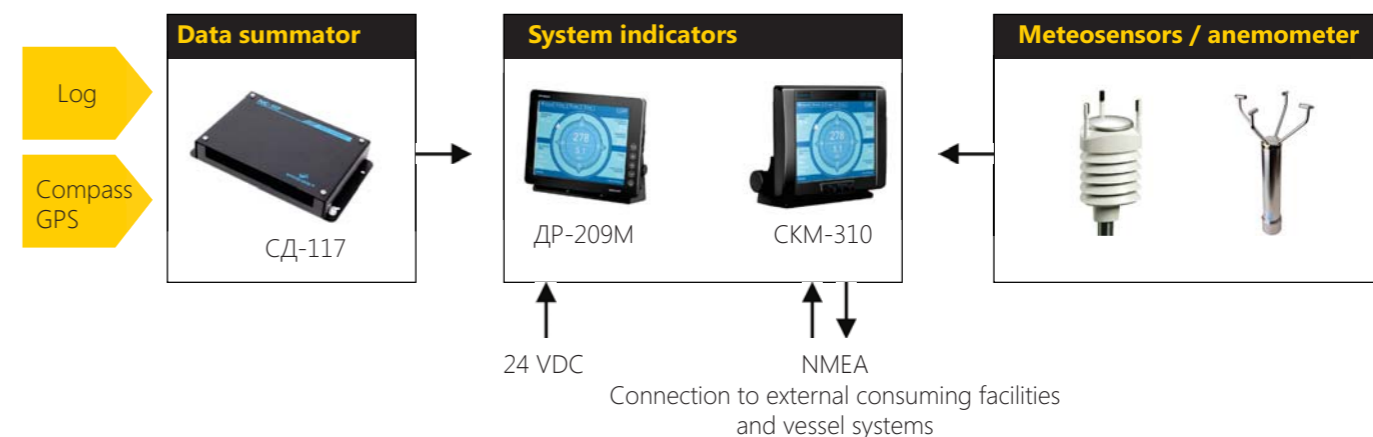
Acquired data registers in the e-logbook (repeater’s data storage) with its subsequent export to XLS format.

Presentation of information in the form of : digital, analog and graphs. You can select the units of measurement display weather data. Built-in heater (possibility of using sensors cold conditions).






Technical characteristics

Parameter	Denotation
Measurable atmosphere (environmental) parameters *	- air temperature - atmospheric pressure - velocity and bearing of (apparent) wind - air humidity - amount of precipitation (rain, hail)
Supplementary-information import from external devices	- vessel course (from the gyrocompass) - vessel velocity (from the log) (NMEA data according to the МЭК 61162-1 standard, 2)
Information displayed *	- air temperature - atmospheric pressure - velocity and bearing of (absolute, true, and apparent wind gusts) wind - air humidity - amount of precipitation (rain, hail) Data representation: digital, analogue, charts/plots (Data updating interval: 3-60 s)
Meteorological data record	- present, records to the system repeater [indicator] storage log - recording interval: 3-3600 s - storage volume: 2 Gbyte SSD
Data export to external devices	- present (via RS-422/RS-232 interfaces) - data transfer rate: 4800-115200 [?]
System indicator screen size	- 8” (1024 × 768, 4 : 3) (when using ДР-209M device) - 10,4” (800 × 600, 4 : 3) (when using СКМ-310 device)
System control devices **	Trackball (mouse), keyboard, touchscreen
Power supply voltage	9.5-36.0 VDC
Power consumption (incl. heating)	Not exceeding 55 W (when ДР-209M device is used) Not exceeding 75 W (when СКМ-310 device is used)
Ingress protection rating	for system indication devices (within the temperature range of -15 °C .. +55 °C): IP22 for on-deck exposed devices: IP66.
Units of measurement	Atmospheric pressure – heptaPa, Pa, mm Hg, bar, in.Hg. Air temperature - °C, °F Relative humidity - % Wind velocity – m/s, km/h, miles per hour, knots Bearing of wind – degrees Amount of precipitation (rain, hail) – mm/h, inches per hour
* - The value, accuracy and limits of the characteristics measured with the climatic station differ and depend on particular meteosensor applied (see the table below). ** - at least one of the following devices is necessary for operation.	

Meteorological station composition



The type and scope of the measured values of the atmospheric system

Sensor characteristics					
Quantity / sensor	WXT520 (weather sensors)	WindObserver 65 (anemometer)	100WX (weather sensors)	150WX (weather sensors)	300WX (weather sensors)
Sensor display					
Atmospheric pressure (heptaPa)	600..1100 ± 0,5	–	800..1100 ± 2		
Air temperature (°C)	-52 .. +60 ± 0,3	-40..+70	-25..+55 ± 1 (при ск. ветра >2,2 м/с)		
Relative humidity (%)	0 .. 90 ± 3 90 .. 100 ± 5	–	–	–	+
Wind speed	0 .. 60 ± 0,3 или 2%	0 .. 65 ± 2%	0 .. 5 (± 0,6 + 10%) 5 .. 40 (± 1,3 или 5%)		
Bearing of apparent wind (deg., with reference to the mark)	0 .. 359 ± 2	0 .. 359 ± 2	0 .. 359 ± 2 RMS (0..5,5) м/с ± 5° RMS		
True wind (with reference to the North)	- /+ (*)	- /+ (*)	- /+ (*)	+	+
Amount of precipitation	rain, hail	–	–	–	rain, hail
Heating	+	+	+	+	+
Size, mm	115 × 115 × 238	213 × 213 × 381	72 × 72 × 130		
mass	0,8	1,4	0,3		

* If the course and velocity information are acquired with the log and the gyrocompass. (150WX and 300WX sensors are equipped with an integral GPS receiver and do not require any external information concerning the vessel velocity and course).

System units

System indicators	ДР-209М	Multipurpose digital NMEA-transponder
	СКМ-310	Data terminal (monoblock computer)
Meteosensors and anemometers	100WX	Meteosensor (requires external data on velocity and course of the vessel, connection to the gyrocompass system and log, or to GPS receiver)
	150WX	Meteosensor (equipped with an integral GPS receiver)
	300WX	Meteosensor (equipped with an integral GPS receiver)
	WXT520	Weather sensors (requires external flow of information about speed and direction of the vessel - connection to the gyro system and the log , or the GPS - receiver)
	WindObserver 65	Anemometer (requires external data on velocity and course of the vessel, connection to the gyrocompass system and log, or to GPS receiver)
Supplementary equipment	СД-117	Standard digital signal summator (NMEA propositions)
	МДУ-102	Amplifier-multiplier of NMEA 0183 signals
System control devices	Touchscreen	Order together with the set of system indicators prior to the order termination
	Trackball	ШМ-1-50В – trackball with strain adjustment
Power supply units	Keyboard	УКТ-801 (S1T) - keyboard combined with trackball
	БПП-114	220 VAC / 24 VDC
	БП-203	220 VAC / 24 VDC
	БП-103	220 VAC / 24 VDC
	БП-303	24 VDC / 24 VDC or 220/24 VDC
	ППТ-108	24 VDC / 24 VDC



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СПВЗС-201 external-audio-signal reception system is designed to receive external audio signal arriving from all emission directions within the frequency bandwidth of 70 – 820 Hz (as an option extends up to 2100 Hz) with subsequent transmission of these signal to the pilothouse along with concomitant direction indication of the emission source.

Specific features and advantages of the system

The basic system includes the receiver (the microphone unit) and the indicator.

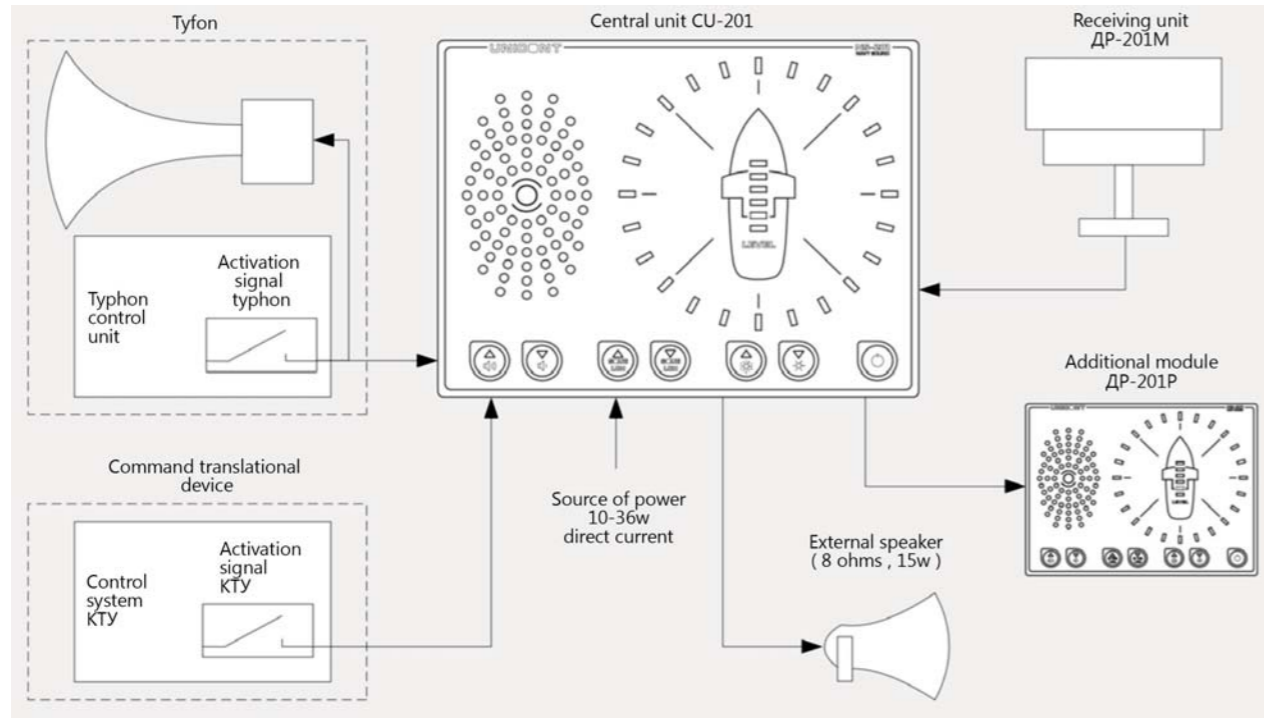
- The microphones of the reception unit are structurally combined into a compact device (the spacing of the microphones is not necessary).
- The system provides for reception of the signals within the frequency bandwidth of 70 – 820 Hz (as an option extends up to 2100 Hz), the signals beyond this range are ignored with the system.
- The emission direction of the signal is detected due to the application of the phase-temporal computing method.
- The system may be utilized in frost (it provides for the microphone unit heating).
- The system provides for connection of additional indicator (“displaying repeater”).
- The system provides for connection of addition external loudspeaker.

Adjustments provided with the indicator:

- Operation threshold (exceeding the noise level).
- Loudspeaker volume control.
- Illumination level of the control and indication devices.

Operational characteristics	
Loudspeaker power (of integral/external one)	5 W / 15 W
No. of microphones active	3 (omnidirectional) structurally combined
Circular measuring interval	15°

Performance specifications		
Working temperature	-15 °C .. + 55 °C	-40 °C .. + 55 °C
Storage temperature	-60 °C .. + 70 °C	-60 °C .. + 70 °C



System devices



<ЦБС> [central system unit], <БИД> [auxiliary indication unit]

The central- and the auxiliary system modules.

- *СПВЗС-201 central module is a digital module (equipped with a microcontroller), equipped with an integral speaker, LED indicators (indicators of emission direction and sound intensity), and control buttons (for settings and operation).*



МБ-1

Receiving module.

- *The receiving module of the СПВЗС-201 system constitutes a set of electrodynamical microphones combined into a single watertight structure designed for exposed on-deck mounting. Equipped with a heating module.*



ГГ-15

Loudspeaker

- *Material: plastic (grey).*
- *Power consumption: 15 W*
- *Mass: ≈ 1400 g.*
- *Ingress protection rating: IP67*
- *Sound pressure level (SPL) 108 dB (1 W at 1 m)*



Ecobalt

Pneumatic horn Ecobalt with a hand pump.

- *A hand-held reusable Typhone-imitator, may be applied on yachts, motorboats and boats as a sound-signaling device.*
- *Assists with operability tests of the microphone units and of the system in general.*



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Designation

БТС-1006 batteryless telephone commutation set with a loudspeaker-mode is designed for batteryless telephone commutation among multiple posts and vessel rooms both with and without vessel mains power supply

Specific features

- Provided with a dual, circular, selective and conference-mode communication among posts (up to 24 subscribers and more).
- A possibility to apply the system as a loudspeaker when connected to the power supply network.
- Communication and addressed calling from any device of the system.
- Light indication of the power supply availability, calling activity, and inductor operability.
- A possibility to connect a headset and external in-call light signaling devices.
- An instant auto-switch to the standby power supply as the main power supply interrupts.
- A possibility to configure diverse telephone networks (with subsequent connection of the subscribers either via an individual (dedicated) or via multiple [bridged] communication channels.
- Various device structures for on-deck and internal in-room installations (incl. high-noise environments) with hinged, table-, and console mounting.

Technical characteristics

Parameter	Denotation
Power supply voltage	- autonomous (provided with the energy supplied with the generator and the energy accumulated) - external, from the mains 24 V (18...36 VDC), loudspeaker-mode
No. of subscribers	2 - 24 (expandable) Parallel-connection devices: 1-channel- БТ-1У, БТ-1, БТ-1Р, БТ-1РВ. 12-channel - БТ-12, БТ-12Р, БТ-12РВ, БТ-12ВП. 24-channel - БТ-24, БТ-24Р, БТ-24РВ, БТ-24ВП. Commutation devices (with isolated channels). 6-channel - БТ-6К, БТ- 6КУ. 12-channel - БТ-12К, БТ- 12КУ. 20-channel - БТ-20К, БТ- 20КУ.
Operational mode	Broadcast-communication unit, loudspeaker (with the mains power supply available)
Communication session duration (during the autonomous power supply mode active):	for a duplex communication not less than 10 min (after 1 revolutionary cycle of the generator with the rate of rotation 3 rev/s within 3-5 s)
Communication line length	Up to 200 m
Functional capabilities	- two in-call tonality modes - in-call number identification (for the devices equipped with LCD) - calling mode selection (with or without camp-on)
Working temperature	-15...+55 °C – for devices installed into internal vessel rooms; -40...+55 °C – for exposed on-deck devices.

Telephone sets

No. of channels	Telephone set designation	Connection			Type of protection	Notes
		head headset	complement. ringing alarms	relay unit		
1	БТ-1У (с усилителем)	+		+	IP44	possible connection of the relay unit
	БТ-1	+			IP44	
	БТ-1Р	+	+	+	IP44	
	БТ-1РВ	+	+	+	IP56	waterproof
12	БТ-12	+			IP44	
	БТ-12Р	+	+	+	IP44	
	БТ-12РВ	+	+	+	IP56	waterproof
	БТ-12ВП	+			IP56	portable, waterproof
24	БТ-24	+			IP44	1
	БТ-24Р	+	+	+	IP44	
	БТ-24РВ	+	+	+	IP56	waterproof
	БТ-24ВП	+			IP56	portable, waterproof
Commutator phones						
6	БТ-6К	+	+	+	IP44	commutators
	БТ-6КУ (amplifier)	+	+	+		
12	БТ-12К	+	+	+	IP44	commutators
	БТ-12КУ (amplifier)	+	+	+		
20	БТ-20К	+	+	+	IP44	commutators
	БТ-20КУ (amplifier)	+	+	+		
Notes: The working temperature of the telephone sets (depending on particular structure) covers the following ranges: - for the telephone sets of IP44 ingress protection grade - (-15...+55)°C - for the telephone sets of IP56 ingress protection grade - (-40...+55)°C						

Commutation devices

КБ-12У – Switching center, with an integral power supply unit (18-36 V/24 V) and an amplifier, for telephone sets connection, for 12 subscriber lines, IP22.

КБ-24У – Switching center, with an integral power supply unit (18-36 V/24 V) and an amplifier, for telephone sets connection, for 24 subscriber lines, IP22.

РБ-3-ABC-220 – Relay unit (220 V, 50 Hz) to connect calling annunciators with a call-stop button. IP56.

РБ-3-ABC-24 – Relay unit 24 VDC to connect calling annunciators with a call-stop button. IP56.

Р-МГГ – Headset connection socket.

Р-БТ-24ВП – A socket to connect a portable telephone set (12- and 24-channel).

Rackmount cabinets and enclosures

БТ-МК – An enclosure for hinge-mounting, metal, for БТ-xx, БТ-xxP, БТ-6Kx telephone sets

БТ-ДК – A wooden enclosure for hinge-mounting of БТ-xx, БТ-xxP, БТ-6Kx telephone sets.

БТ-МК2 – An enclosure for hinge-mounting, metal, for БТ-12Kx, БТ-20Kx telephone sets.

БТ-ДК2 – A wooden enclosure for hinge-mounting of БТ-12Kx, БТ-20Kx telephone sets.

ЦМ-1 – A watertight panel, IP56 to arrange telephone sets (for БТ-xx, БТ-xxP telephone sets and БТ-6KY, БТ-6K, БТ-12KY, БТ-12K, БТ-20K, БТ-20KY commutators).

Supplementary equipment

МГГ-3П - Handset with a handswitch, 1,5 m and 10 m cable.

МГГ-3ПР - Handset with a handswitch, 1,5 m and 10 m cable, and a connector to connect to the P-МГГ socket.

Supplementary equipment

ЛИ-24 – Impulse lamp (beacon), IP56.

ЛП-24 – Flashing lamp, rotary (power supply 24 VDC), IP56.

ЛП-220 – Flashing lamp, rotary (power 220 В, 50 Гц), IP56.

СЗВ-24 – Audible warning device (24 VDC), watertight, IP56.

СЗВ-220 – Audible warning device (220 V, 50 Hz), watertight, IP56.

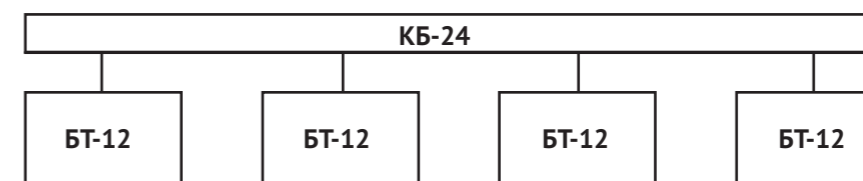
СЗС-24 – Warning light, sound signaling (24В fast. current) watertight, IP56

СЗС-220 – Warning light, sound signaling (220В, 50Гц) watertight, IP56.

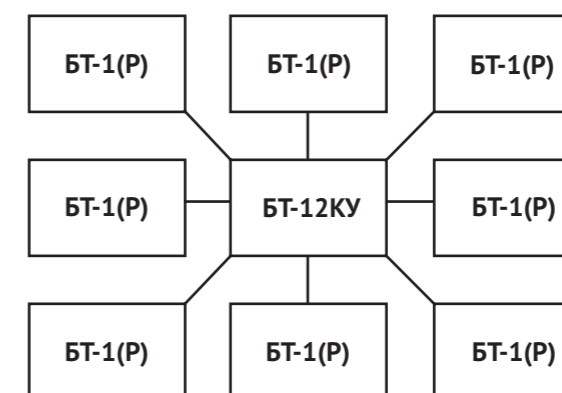
Coupled [paired] connection arrangement example



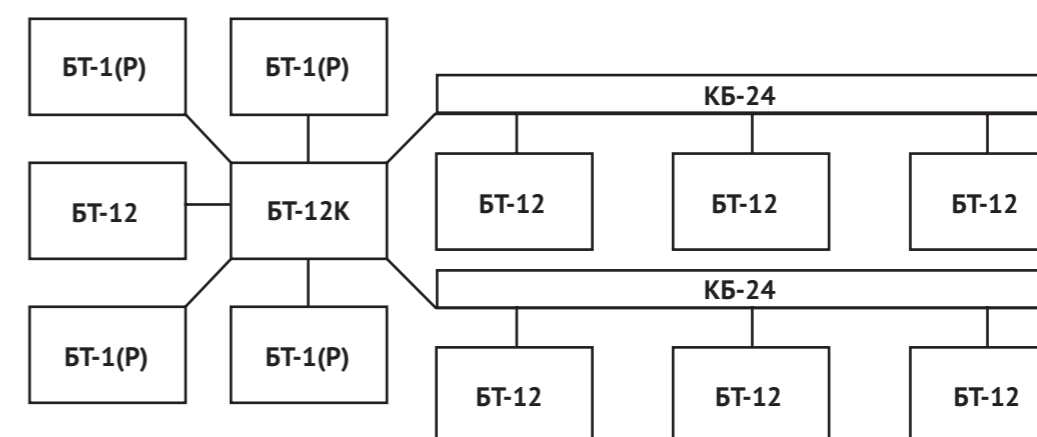
Parallel connection arrangement example



Commutation connection arrangement example



Combined connection arrangement example





BT-1Y telephone set

Unidirectional device (with an amplifier) for application with batteryless coupled [paired] (direct) connection systems.

- Ensure operation as a batteryless telephone set and a loudspeaker.
- Equipped with an integral amplifier.
- Provide for LCD and control devices illumination.
- Equipped with in-call indicators, inductor operability indicators, external power supply (24 V) availability indicators.
- Provide for connection of external calling annunciators.
- Provide for headset connection

Technical characteristics:

Power consumption: up to 6 W
No. of directions: 1
Ingress protection grade: IP44
Working temperature: -15...+55 °C
Mass: 1.7 kg

Mounting format:

Into a notch
Hinge-mounted with BT-MK, BT-ДК casings
Mounted on table with BT-ДК casing



BT-1, BT-12, BT-24 telephone sets

Devices with 1/12/24 direction expansion for combination with batteryless communication systems.

- Ensure operation as a batteryless telephone set and a loudspeaker.
- Equipped with an integral amplifier.
- Provide for LCD and control devices illumination.
- Equipped with in-call indicators, inductor operability indicators, external power supply (24 V) availability indicators.
- Provide for connection of external calling annunciators.
- Provide for headset connection.

Technical characteristics:

Power consumption: up to 3 W
No. of directions: 1 / 12 / 24
Ingress protection grade: IP44
Working temperature: -15...+55 °C
Mass: 1.7 kg

Mounting format:

Into a notch
Hinge-mounted with BT-MK, BT-ДК casings
Mounted on table with BT-ДК casing



BT-1P, BT-12P, BT-24P telephone sets

Devices with 1/12/24 direction expansion for combination with batteryless communication systems (with an option of external annunciation loops connection).

- Ensure operation as a batteryless telephone set and a loudspeaker.
- Equipped with an integral amplifier.
- Provide for LCD and control devices illumination.
- Equipped with in-call indicators, inductor operability indicators, external power supply (24 V) availability indicators.
- Provide for connection of external calling annunciators.
- Provide for headset connection.

Technical characteristics:

Power consumption: up to 3 W
No. of directions: 1 / 12 / 24
Ingress protection grade: IP44
Working temperature: -15...+55 °C
Mass: 1.7 kg

Mounting format:

Into a notch
Hinge-mounted with BT-MK, BT-ДК casings
Mounted on table with BT-ДК casing



BT-1PB, BT-12PB, BT-24PB telephone sets

Devices with 1/12/24 direction expansion for combination with batteryless communication systems (with an option of external annunciation loops connection), watertight.

- Ensure operation as a batteryless telephone set and a loudspeaker.
- Equipped with an integral amplifier.
- Provide for LCD and control devices illumination.
- Equipped with in-call indicators, inductor operability indicators, external power supply (24 V) availability indicators.
- Provide for connection of external calling annunciators.
- Provide for headset connection.

Technical characteristics:

Power consumption: up to 3 W
No. of directions: 1 / 12 / 24
Ingress protection grade: IP57
Working temperature: -15...+55 °C
Mass: 2.5 kg

Mounting format:

Hinge-mounted
Exposed on deck
Hinge-mounted
Mounted into the ЦМ-1 box

Accessories:

МГТ-3П headset
РБ-3-ABC-24, РБ-3-ABC-220 external signaling device
ЦМ-1 metal box



BT-12BP, BT-24BP portable telephone sets

Portable devices with 12/24 direction expansion for combination with batteryless communication systems.

- Ensure operation as a batteryless telephone set and a loudspeaker.
- Equipped with an integral amplifier.
- Provide for LCD and control devices illumination.
- Equipped with in-call indicators, inductor operability indicators, external power supply (24 V) availability indicators.
- Provide for connection of external calling annunciators.
- Provide for headset connection.

Technical characteristics:

Power consumption: up to 3 W
No. of subscribers: 12 / 24
Cable length: 10 m
Ingress protection grade: IP56
Working temperature: -40...+55 °C
Mass: 2.5 kg

Mounting format:

Portable

Accessories:

МГТ-3П headset
РП-БТ-24BP socket



BT-K6, BT-K6Y telephone commutator set

Commutator device with 6 direction expansion (with isolated [individual] subscriber commutation) for combination with batteryless communication systems.

- Ensure operation as a batteryless telephone set and a loudspeaker.
- Equipped with an integral amplifier.
- Provide for LCD and control devices illumination.
- Equipped with in-call indicators, inductor operability indicators, external power supply (24 V) availability indicators.
- Provide for connection of external calling annunciators.
- Provide for headset connection.

Technical characteristics:

No. of subscribers: 1-6
Ingress protection grade: IP44
Working temperature: -15...+55 °C
Mass: 2.7 kg

Mounting format:

Into a notch
Hinge-mounted with BT-MK, BT-ДК casings
Mounted on table with BT-ДК casing



BT-K12, BT-K12Y telephone commutator set

Commutator device with 12 direction expansion (with isolated [individual] subscriber commutation) for combination with batteryless communication systems.

- Ensure operation as a batteryless telephone set and a loudspeaker.
- Equipped with an integral amplifier.
- Provide for LCD and control devices illumination.
- Equipped with in-call indicators, inductor operability indicators, external power supply (24 V) availability indicators.
- Provide for connection of external calling annunciators.
- Provide for headset connection.

Technical characteristics:

No. of subscribers: 1-12
Ingress protection grade: IP44
Working temperature: -15...+55 °C
Mass: 3.2 kg

Mounting format:

Into a notch
Hinge-mounted with BT-MK2, BT-ДК2 casings
Mounted on table with BT-ДК2 casing



BT-K20, BT-K20Y telephone commutator set

Commutator device with 20 direction expansion (with isolated [individual] subscriber commutation) for combination with batteryless communication systems.

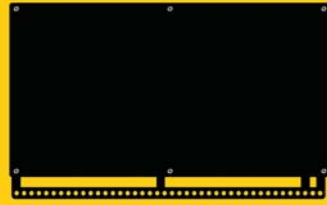
- Ensure operation as a batteryless telephone set and a loudspeaker.
- Equipped with an integral amplifier.
- Provide for LCD and control devices illumination.
- Equipped with in-call indicators, inductor operability indicators, external power supply (24 V) availability indicators.
- Provide for connection of external calling annunciators.
- Provide for headset connection.

Technical characteristics:

No. of subscribers: 1-12
Ingress protection grade: IP44
Working temperature: -15...+55 °C
Mass: 3.2 kg

Mounting format:

Into a notch
Hinge-mounted with BT-MK2, BT-ДК2 casings
Mounted on table with BT-ДК2 casing



KB-12Y, KB-24Y switching center

Designed for centralized power-supply distribution to the telephone sets and communication circuits, also for convenient device interconnection, and telephone interconnection arrangement.

- Equipped with an integral amplifier.
- Ensures external power supply distribution to the telephone sets (via galvanic isolation).
- Convenient-to-use with networks involving more than 2 devices.

Technical characteristics:

Power supply voltage:
 Input – 18-36 VDC
 Output – 24 VDC
 No. of clamps for telephone set connections:
 for KB-12Y - 12
 for KB-24Y - 24
 Galvanic separation of the output voltage from the power supply network – 1.5 kV
 Power consumption: 75 W
 Ingress protection grade: IP22
 Mass: 1.4 kg

Supplementary equipment

PБ-3-ABC-24, PБ-3-ABC-220 relay unit

Ensures external power supply commutation to the calling signaling devices.

- Used together with БТ-xxP, БТ-xxPB, БТ-xxK, БТ-xxKY devices.
- Provides for connection of light-and-sound signaling devices (supplied with 220 VAC or 24 VDC).
- Equipped with a call-reset button and an in-call indicator.
- Ensures in-call announcement (incl. announcements on previously terminated calls set by a subscriber) in the following modes:
- permanent (until the reception has been acknowledged), with a 10 s reset-delay, with an instant reset.

Technical characteristics:

Casing material: plastic
 Voltage commutated:
 for PБ-ABC-220 – 220 V
 for PБ-ABC-24 – 24 V
 Current commutated – not exceeding 10 A
 No. of connecting terminals – up to 3
 Actuating signal – potential-free contact is equipped with a port for remote acknowledgement of the external devices
 Power consumption: 75 W
 Ingress protection grade: IP56
 Mass: 1.4 kg
 Working temperature: -40...+55 °C



P-MГГ socket (for headset connection)

Provides remote connection of the headset to the telephone set.

- Watertight structure.
- Equipped with a watertight socket with a cap-cover.

Technical characteristics:

Casing material: aluminum
 Ingress protection grade: IP56
 Working temperature: -40...+55 °C
 Mass: 0.6 kg



РП-БТ-24ВП socket (for portable telephone set connection)

Provides connection of БТ-xxBP portable telephone sets to the telephone network or to the telephone set of the commutator [switching center].

- Watertight structure.
- Equipped with a watertight socket with a cap-cover.

Technical characteristics:

Casing material: aluminum
 Ingress protection grade: IP56
 Working temperature: -40...+55 °C
 Mass: 0.8 kg



MГГ-3П, MГГ-3ПP microtelephone headset

Combined with telephone sets for communication in high-noise environments.

- Steel-strip-headband structure.
- Provides for an adjustment for individual setting and comfort.
- Equipped with a switch (<PTT> button) to connect the headset to communication loops of the telephone sets.
- Equipped with a watertight socket to connect to telephone sets.
- Equipped with a built-in anti-noise microphone.

Technical characteristics:

Headset type: passive, monophonic
 Working frequency bandwidth: 200-4000 Hz
 Operation in noisy environment: up to 120 dB
 Microphone: hermetically sealed, differential, anti-noise.
 Working temperature: -15...+ 55 °C
 Ingress protection grade: IP56
 Mass: 0,64 кг
 Cable length: 1.5 m and 10 m
 MГГ-3ПP headset is equipped with a socket for connection to portable devices
 БР-12ВП, БР-24ВП socket

ЛП-24, ЛП-220 flashing lamp, rotary

Provides in-call light signaling in high-noise environments.

- Supplied together with the bulb-cover globes of the following colors: red, orange, green, blue.
- Connects to PБ-3-ABC-24, PБ-3-ABC-220 relay unit.

Technical characteristics:

Power supply voltage:
 for ЛП-24 – 24 VDC
 for ЛП-220 – 220 V 50/60 Hz
 Power: 45 W (ЛП-220), 65 W (ЛП-24)
 Light source:
 for ЛП-24 – Halogen lamp (24B)
 for ЛП-220 – Incandescent lamp (220B)
 Revolution rate: 180 rev/min
 Working temperature: -15...+55 °C
 Ingress protection grade: IP56
 Mass: 0.9 kg (ЛП-24), 1.1 kg (ЛП-220)
 Mounting – vertical, with cantilever



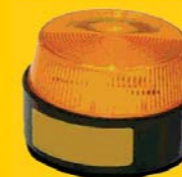
ЛИ-24 impulse flashing lamp

Provides in-call light signaling in high-noise environments.

- Watertight structure
- Connects to PБ-3-ABC-24 relay unit and БТ-xxP, БТ-xxPB, БТ-xxK, БТ-xxKY telephone sets.

Technical characteristics:

Power supply voltage: 10-100 VDC
 Power: 3 W
 Flashing frequency: 75 times per min
 Lamp types: Xenon, 26 candles
 Ingress protection grade: IP56
 Working temperature: -40...+55 °C
 Mass: 0.13 kg



C3B-24, C3B-220 signaling devices, watertight

In-call light signaling device applied in high-noise environments.

- Watertight structure
- 10 emitted-signal tonalities
- Signaling device connection:
- C3B-220 – to PБ-3-ABC-220 relay unit.
- C3B-24 – to PБ-3-ABC-24 relay unit and to БТ-xxP, БТ-xxPB, БТ-xxK, БТ-xxKY telephone sets
- Supplied together with the casings of the following colors: grey, red

Технические характеристики:

Material material - plastic, impact-resistant (red, gray)
 Power:
 for C3B-24 - 0.6 W
 for C3B-220 - 3.0W
 Supply voltage::
 for C3B-24 - 10...30 W current post
 for C3B-220 - 220 В ±10%, 50/60Hz
 The frequency of the signal issued by: - (depending on settings)
 for C3B-24 - 420-1200 Hz
 for C3B-220 - 420-2900 Hz
 Sound pressure - max. 105 dB (with the possibility of adjusting the level within the 30-105 dB)
 Working temperature: -15...+55 °C
 Ingress protection grade: IP56
 Mass: 0.3 кг





C3C-24, C3C-220 light-and-sound signaling devices

In-call light signaling device applied in high-noise environments.

- Водозащищенное исполнение
- 10 emitted-signal tonalities
- Signaling device connection:
- C3B-220 – to РБ-3-АБС-220 relay unit.
- C3B-24 – to РБ-3-АБС-24 relay unit and to БТ-ххР, БТ-ххРВ, БТ-ххК, БТ-ххКУ telephone sets
- Supplied together with the casings of the following colors:
- grey, red
- Colors of the bulb-cover globes:
- amber, blue, green, red, yellow.

Technical characteristics:

Casing material – plastic, shock-proof
 for C3C-24 - Мощность: 8 Вт
 for C3C-220 - 11 Вт
 Power supply voltage:
 for C3C-24 - 24 VDC
 for C3C-220 - 220В 50/60Гц
 Frequency of the signal emitted: -
 (depending on settings)
 for C3C-24 - 420-1200Гц
 for C3C-220 - 420-2900Гц
 Flashing frequency: - 1 Hz
 Flashing brightness – 200 cd (xenon)
 Sonic pressure – max. 105 dB (with an adjustment option to set the level within 30-105 dB)
 Working temperature: -15...+55 °C
 Ingress protection grade: IP56
 Mass: 0.3 кг



БТ-МК, БТ-МК2 casing for hinge-mounting (metallic)

Designed to have telephone sets mounted on a vertical bulkhead.

- БТ-МК is used together with БТ-1У, БТ-хх, БТ-ххР, БТ-6Кх telephone sets.
- БТ-МК2 is used together with БТ-12КУ, БТ-12К, БТ-20КУ, БТ-20К commutator telephone sets.

Technical characteristics:

Material: steel
 Ingress protection grade: IP44
 Mass: 1.4 кг



БТ-ДК, БТ-ДК2 casing for hinge-mounting (wooden)

Designed to have telephone sets mounted on a vertical bulkhead and on a horizontal plane.

- БТ-ДК используется с телефонными аппаратами, БТ-1У, БТ-хх, БТ-ххР, БТ-6Кх.
- БТ-ДК2 предназначен для использования с телефонными аппаратами БТ-К12У, БТ-К12, БТ-К20У, БТ-К20.

Technical characteristics:

For БТ-ДК
 Material: wooden (oaken)
 Ingress protection grade: IP22
 Mass: 0.8 кг
 For БТ-ДК2
 Material: wooden (oaken)
 Ingress protection grade: IP22
 Mass: 1.0 кг

ЩМ-1

A watertight board designed for interior installation of devices and supplementary equipment, (applied at the discretion of the customer).

- Equipped with a shutter to access the built-in devices and the interior mounting panel.
- The shutter is equipped with a manual locking/unlocking gear and an open-position fixing device.
- The interlocking device (in a closed position) provides for a possibility to set a padlock.
- Recommended for devices exposed on-board.

Technical characteristics:

Material: steel (painted)
 Operating angle for the doorlet to open - 105°
 Ingress protection grade: IP67
 Mass: 7 кг



Approved by the Russian Maritime Register of Shipping

The automatic shipboard telephone station is designed for application with river and marine ships, as well it may be applied at industrial facilities.

Specific features

- Specific features:
- Up to 64 analogue subscribers, up to 16 external lines.
- A huge selection of internal- and external line combinations.
- Automatic switch to the standby network.
- Integration with loudspeaker systems, command and broadcasting system equipment (АДС-131 и АКТС-1007) manufactured by “NPK Morsvyazavtomatika”.
- The station is programmed with a computer via a direct LAN-interface.
- Communication may be set both via wire connection lines and radio channels.

Technical characteristics

Electrical characteristics

Mains power supply	220 VAC 50/60 Hz
Standby power supply	24 VDC (automatic switch)
Power consumption	Not more than 90 W

Operational characteristics

Ports	64 internal- and 16 external lines
	AUX-input (for audio media)
	External annunciation output
	Relay ports

General characteristics of the central unit

Ingress protection grade	IP 22
Mass	17 kg
Storage temperature	-25..+70°C
Working temperature	-15..+55°C

ATC-ЦБ- 0632



Central unit type	No. of external lines	No. of internal lines	Notes
ЦБ – 0308	3	8	8r (2)
ЦБ – 0316		16	8r / 8a (2)
ЦБ – 0324	3 (6)1	24	8r / 16a (2)
ЦБ – 0632	6 (9)1	32	16r / 16a (2)
ЦБ – 0640		40	16r / 24a (2)
ЦБ – 0648	6 (12)1	48	16r / 32a (2)
ЦБ – 0656		56	22r / 32a (3)
ЦБ – 0664	6 (16)1	64	22r / 32a (3)

z – lines for digital- and analogue telephone sets connection
 a – lines for analogue telephone sets connection only

NOTES

- 1 – as an option the number of external lines may be electively increased (to 6, 9, 12, 16 respectively)
- 2 – among the specified there are hybrid ports included, there is a port which does not provide for connection with an analogue telephone set (see the network scheme).
- 3 – among the specified there are hybrid ports included, there are two ports which do not provide for connection with an analogue telephone set (see the network scheme).

ЦБ ATC-1004 central unit

The central unit is a commutation center of the automatic shipboard telephone station, which configures a common telephone network with the automatic telephone, which is connected to it via wired connection lines.

- A possibility to administer with a computer.
- Equipped with a locking device (locked with a key) and an open-door limiter.
- A possibility to connect digital and analogue (both push-button and dial ones) with [dc]/pulse- or DTFM relay
- A possibility to set telephone communication via a radio channel (of a DECT station).
- Non-volatile memory.
- Equipped with an integral music trackplay source.
- Flexible and scalable (intergrable) architecture.

Technical characteristics:

Power supply voltage:
 220 V (47-63 Hz) or 24 VDC
 Power: not exceeding 90 W
 Overall dimensions: 643 x 406 x 96 mm
 Mass: not more than 15 kg
 Working temperature: -15...+55 °C.
 Ingress protection grade: IP44

Mounting format:

Hinge-mounted



ТН-СИКА digital telephone set

Provides telephone connection via digital line.

- Three-row LCD.
- Equipped with programming buttons.
- Provides for headset connection.
- Provides for loudspeaker-mode communication (equipped with an integral loudspeaker).
- Provides basic and expanded service-and-maintenance warranty options

Technical characteristics:

Display: three-row (3 x 24).
 Menu language: Ru/En.
 No. of programmable buttons: 24.
 Programmable-buttons light indication: available.
 Headset connection socket: TRS 2.5 mm.
 Working temperature: -15...+55 °C.
 Ingress protection grade: IP22
 Mass: 0.98 kg.

Mounting format:

Hinge-mounted with cantilever;
 Mounted on table



ТН-СИКА1 (2/3/4) subscriber terminal with a КДФК-48 direct subscriber call console.

Direct subscriber call console.

- Three-row LCD.
- Equipped with programming buttons.
- Provides for headset connection.
- Provides for loudspeaker-mode communication (equipped with an integral loudspeaker).
- Provides basic and expanded operational configuration options.

Technical characteristics:

Display: three-row (3 x 24).
 Menu language: Ru/En.
 No. of programmable buttons:
 for ТН-СИКА1 - 72;
 for ТН-СИКА2 - 120;
 for ТН-СИКА3 - 168;
 for ТН-СИКА4 - 216;
 Programmable-buttons light indication: available.
 No. of digital ports employed:
 for ТН-СИКА1 - 2;
 for ТН-СИКА2 - 3;
 for ТН-СИКА3 - 4;
 for ТН-СИКА4 - 5;
 Maximum no. of КДФК-48 consoles in the system – 4.
 Headset connection socket: TRS 2.5 mm.
 Working temperature: -15...+55 °C.
 Ingress protection grade: IP22
 Mass: 0.98 kg.

Mounting format:

Hinge-mounted with cantilever;
 Mounted on table





TH-1A telephone set

Provides telephone connection via analogue line for internal premises.

- In-call signal volume control.
- Call hold.
- Last-number redial.
- Provides basic and expanded (special code entry needed) operational configuration options.

Technical characteristics:
 Dialing model: tonal/impulse
 Color: black
 Working temperature: -15...+55 °C
 Mass: 0.5 kg
 Ingress protection grade: IP22

Mounting format:
 Hinge-mounting;
 Mounted on table



TH-2A analogue telephone set

Provides telephone connection via analogue line.

- TThree-row LCD.
- In-call signal volume control.
- Call hold.
- Last-number redial.
- Headset connection option.
- Single-push dial.
- Calendar, clock.
- Telephone book.
- Provides basic and expanded (special code entry needed) operational configuration options.

Technical characteristics:
 Automatic number identifier: available.
 Display: three-row.
 Dialing model: tonal/impulse
 Loudspeaking mode: available.
 No. of programmable buttons: 10.
 Headset connection socket: TRS 2.5 mm
 Color: black.
 Working temperature: -15...+55 °C.
 Ingress protection grade: IP22
 Mass: 0.98 kg.

Mounting format:
 Hinge-mounted with cantilever;
 Mounted on table



TH-3A telephone set

Provides telephone connection via analogue line.

- Compact, for internal premises, hinge-mounted.
- Provides basic and expanded (special code entry needed) operational configuration options.

Technical characteristics:
 Microphone OFF-mode button: available.
 Volume control: available.
 HOLD function: available.
 Re-call: available.
 Dialing model: tonal/impulse
 Color: grey
 Working temperature: -15...+55 °C
 Ingress protection grade: IP22.
 Mass: 0.3 kg.

Mounting format:
 Hinge-mounted with cantilever;
 Mounted on table



TH-2AB telephone set

Provides telephone connection via analogue line, watertight.

- Applied exposed on-deck and in the internal premises.
- Tolerates high-noise and high-vibration environments.
- Equipped with a protective shutter (casing) to protect against accident damages and minimize contacts with marine atmosphere.
- Shock-proof protection.
- Provides basic and expanded (special code entry needed) operational configuration options.

Technical characteristics:
 Microphone OFF-mode button: available.
 Volume control: available.
 HOLD function: available.
 Re-call: available.
 Color: grey
 Working temperature: -40...+55 °C
 Ingress protection grade: IP66.
 Mass: 3.9 kg.

Mounting format:
 Hinge-mounted



TH-KMA telephone set

Provides telephone connection via analogue line.

- Equipped with keyboard illumination (adjustable, requires 24 VDC).
- Telephone receiver equipped with magnetic fixation.
- Provides for separate volume control of the microphone and the speaker.

Technical characteristics:
 No. of numbers memorized: 10
 Speed dialing: available
 Re-call option: available
 Keyboard illumination: active
 Color: black
 Working temperature: -15...+55 °C
 Mass: 0.5 kg
 Ingress protection grade: IP22

Mounting format:
 Into a notch;
 Hinge-mounted with cantilever



TH-ADK telephone set (radio telephone)

Provides telephone connection via analogue line and radio channel. Comprises the base unit and a portable handset.

- Provides for communication with the loudspeaker-mode active (equipped with an integral loudspeaker).
- Radio-telephone broadcasting radius up to 200 m remoteness ensured with the base unit.
- Along with concomitant active use of two (and more) attached-to-the-base-unit (registered) handsets (up to 6) it is possible to communicate without seizure of the telephone line as the latter remains vacant.
- The base unit is equipped with an integral charger to charge the batteries of the handset.
- Handset buttons illumination provided.
- Provides basic and expanded (special code entry needed) operational configuration options.

Technical characteristics:
 Power supply voltage: 220 VAC 50-60 Hz.
 Working frequency: 1880-1900 MHz.
 Standard: DECT/GAP.
 Display: available.
 Automatic number identifier: available.
 No. of call melodies: 40.
 Alarm clock: available.
 Stray-keystroke-prevention lock: available.
 Conference-call: available.
 Telephone book: available, contains up to 120 phone numbers.
 No. of telephone handsets connected to a single base: 6.
 Intercommunication among handsets: available.
 Running time resource:
 - active-call mode: 15 h
 - waiting mode: 170 h.
 No. of accumulators: 2, Ni-MH, AAA.
 Working temperature: -15...+55°C.
 Ingress protection grade: IP22.
 Mass: 0.5 kg.

Mounting format:
 Mounted on table.



TH-ADKB telephone set (radio telephone), watertight

Provides telephone connection via analogue line and radio channel. Comprises the base unit and a portable handset.

- Provides for communication with the loudspeaker-mode active (equipped with an integral loudspeaker).
- Radio-telephone broadcasting radius up to 200 m remoteness ensured with the base unit.
- Along with concomitant active use of two (and more) attached-to-the-base-unit (registered) handsets (up to 6) it is possible to communicate without seizure of the telephone line as the latter remains vacant.
- The base unit is equipped with an integral charger to charge the batteries of the handset.
- Handset buttons illumination provided.
- Provides basic and expanded (special code entry needed) operational configuration options.

Technical characteristics:
 Power supply voltage: 220 V 50-60 Hz.
 Working frequency: 1880-1900 MHz.
 Standard: DECT/GAP.
 Display: available, 1.8".
 Automatic number identifier: available.
 No. of call melodies: 27.
 Alarm clock: available.
 Accident-push lock: available.
 Conference-call: available.
 Telephone book: available, contains up to 120 phone numbers.
 No. of telephone handsets connected to a single base: 6.
 Intercommunication among handsets: available.
 Running time resource:
 - active-call mode: 20 h
 - waiting mode: 250 h.
 No. of accumulators: 2, Ni-MH, AAA.
 Working temperature: -15...+55°C.
 Ingress protection grade: IP22.
 Mass: 0.5 kg.

Mounting format:
 Mounted on table.



ЯК-16 switching box for 16 subscribers

The switching box is designed for transition of 16 main paired cables into single paired cables.

Technical characteristics:
 Total no. of output terminals: 16
 Maximum permissible current: 20 A
 Cable cross-section: up to 1,5 mm²
 Working temperature: -15...+55 °C
 Mass: 2 kg
 Ingress protection grade: IP56

Mounting format:
 Hinge-mounting



ББП-114-24 power supply unit

Applied as an uninterruptable power supply unit with a total line current consumption of 10 A and the voltage supplied 24 VDC with autonomous operation duration 1 h.

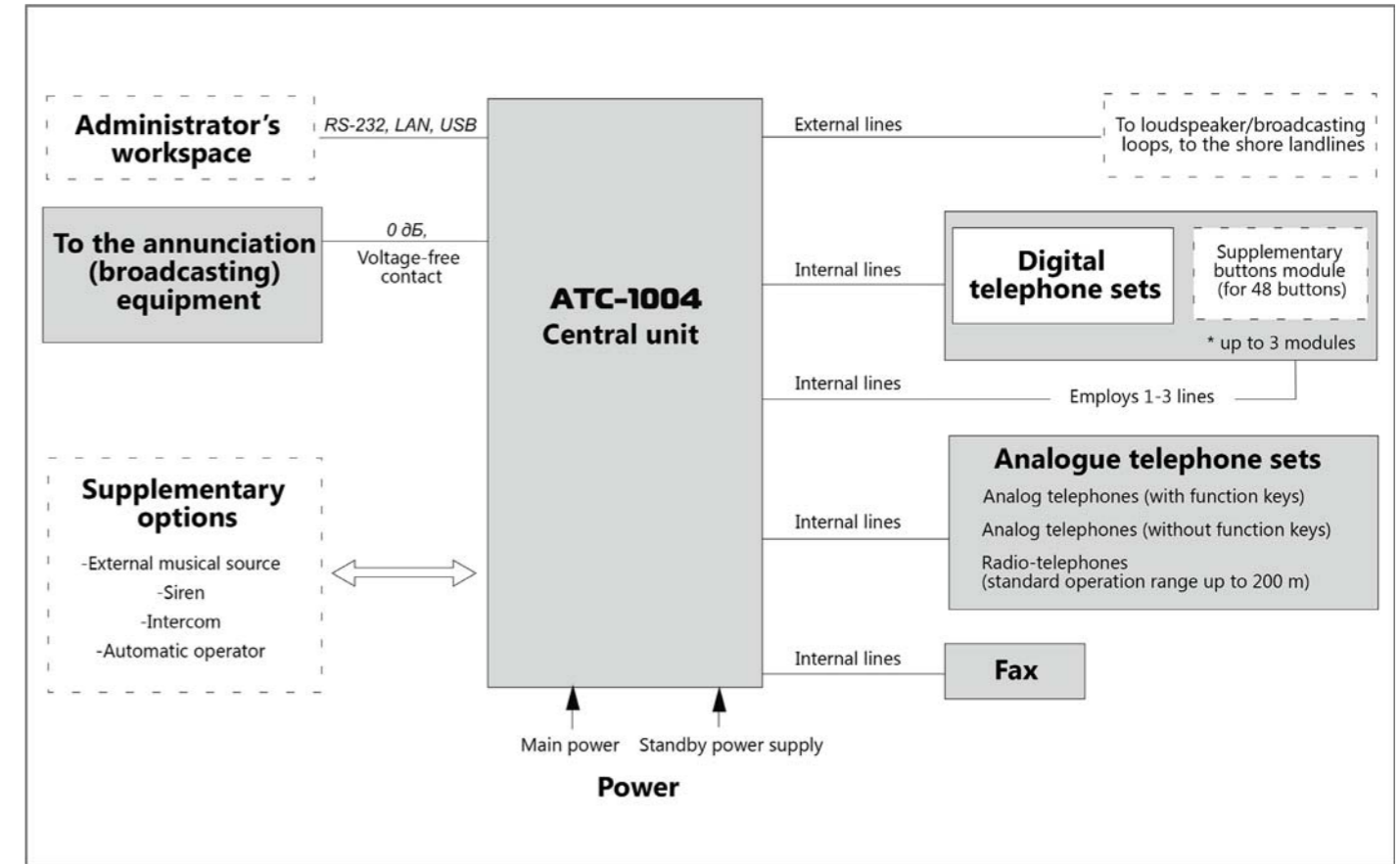
- Equipped with a sound- and relay signaling indicating the input-voltage loss.
- Equipped with a dichromatic 4-segment LED indicating residual charge of the accumulator battery.

Technical characteristics:
 Input voltage: 110/220 V, 50-60 Hz
 Output voltage (when battery-supplied): 19.2...24.8 VDC
 Maximum running time battery-supplied with 10 A current: not less than 1 h
 Maximum output current (when mains-supplied): 12 A
 Protection actuation/triggering current: 20 A
 Efficiency coefficient: 72%
 Power: 320 W
 Working temperature: -15...+50 °C
 Mass: not exceeding 16 kg
 Ingress protection grade: IP22

Mounting format:
 Hinge-mounted

Supplementary devices

PT-Y	A socket and a plug for landline connection.
PT-11	A socket for connection of an analogue PBX.
AФ-1	A facsimile machine transmitting images via analogue lines.





Approved by the Russian Maritime Register of Shipping



Approved by the Russian River Register of Shipping

СЭ-300/600/800/1200/1800 shipboard electric convector

Stationary shipboard electric convector with a tubular heating unit installs on any ships for heating the rooms devoid of explosive admixtures. Electric convectors may also apply to industrial sites.

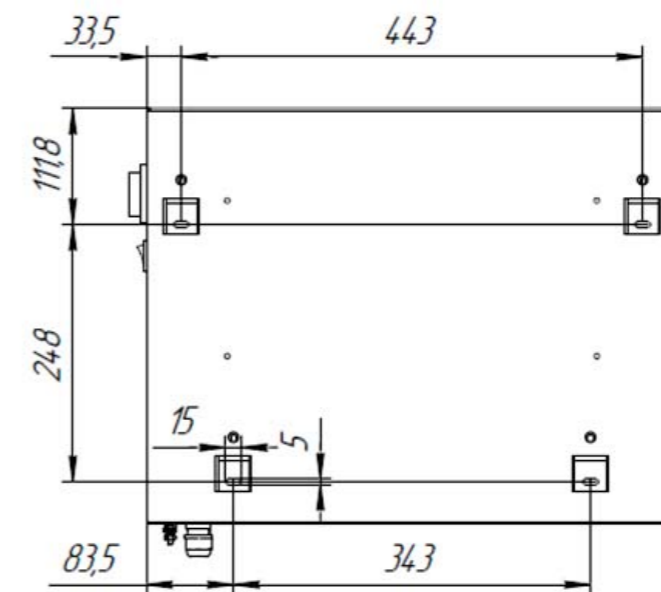
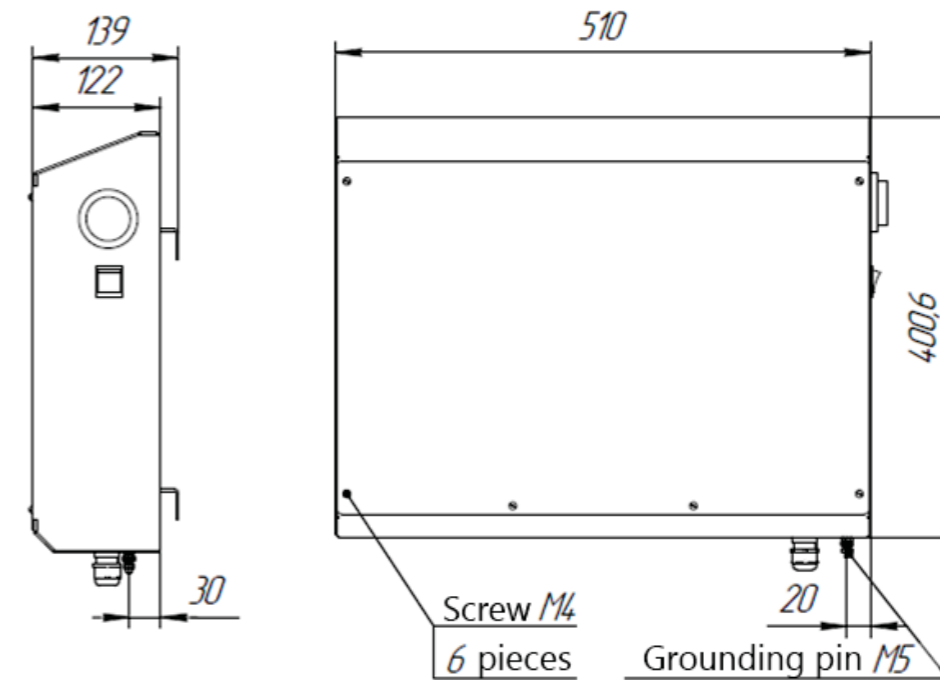
Specific features:

- The air heats with a natural convection.
- Provides for protection against convector overheating.
- Equipped with a heat controller switching the heating off at the pre-set level.
- Suitable for interior installation.

Technical characteristics

Characteristics	СЭ-xxx (ЦИУЛ.681934.001-xx*) modification				
	СЭ-300 (-01)*	СЭ-600 (-02)*	СЭ-800 (-03)*	СЭ-1200 (-04)*	СЭ-1800 (-05)*
Power supply voltage	127 В, 50 Гц; 220 В, 50 Гц; 380 В (2 фазы), 50 Гц				
Power consumption	300 Вт	600 Вт	800 Вт	1200 Вт	1800 Вт
Space heated	7 м2	14 м2	19 м2	27 м2	32 м2
Overall dimensions	510 мм x 400,6 мм x 122 мм				
Mass	5,5 кг	7,5 кг	9 кг	11 кг	14 кг
Ingress temperature	IP22				
Working temperature	-15°...+55 °С				
Storage temperature	-60°...+70 °С				
* - Heaters code execution (example, ЦИУЛ.681934.001-01)					

Overall and mounting dimensions СЭ-xxx





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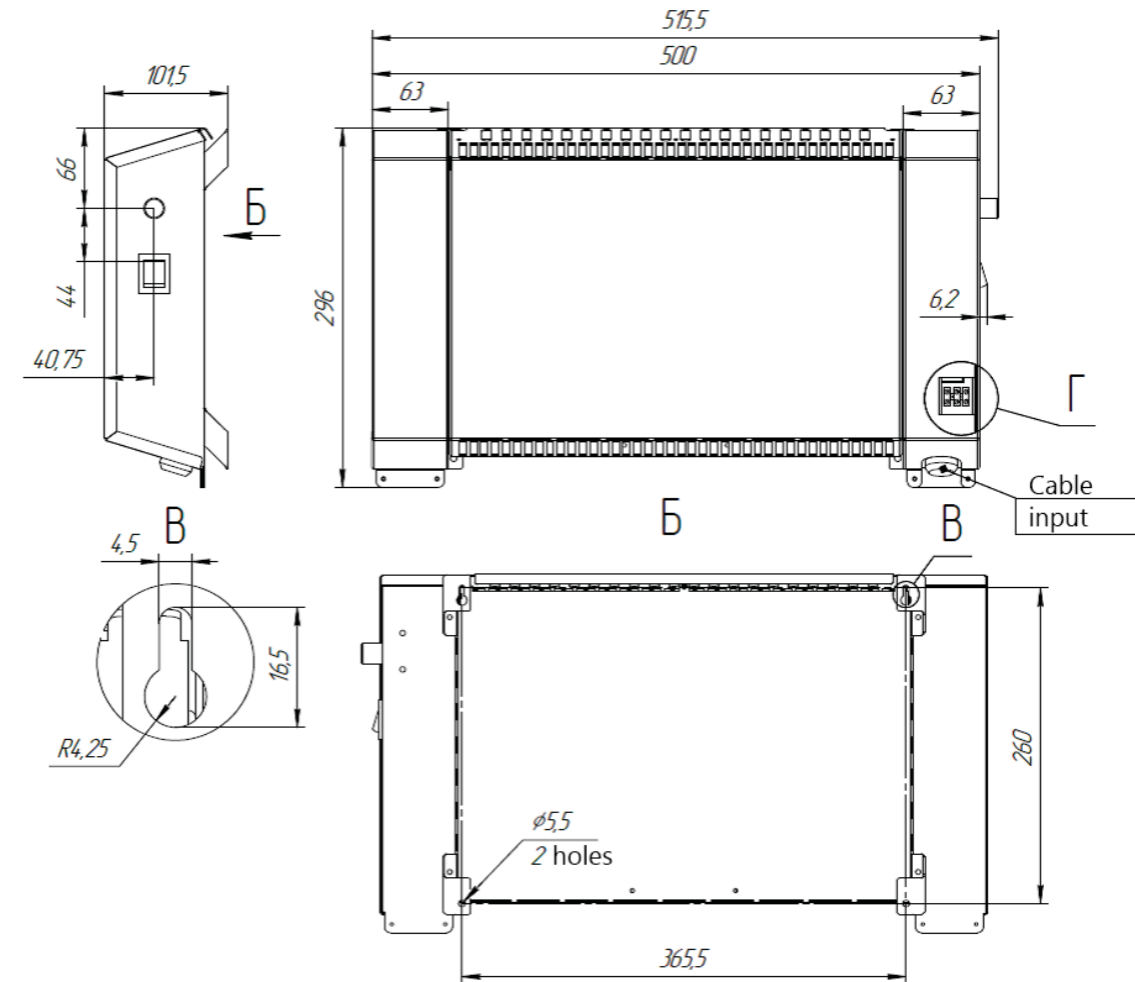
СЭ-Б - 300/600/800/1200 shipboard electric convector

Stationary shipboard electric convector with a tubular heating unit installs on any ships for heating the rooms devoid of explosive admixtures. Electric convectors may also apply to industrial sites.

Specific features:

- The air heats with a natural convection.
- Provides for protection against convector overheating.
- Equipped with a heat controller switching the heating off at the pre-set level.
- Suitable for interior installation, where the drip-tightness of the casing is needed (IP44).

Overall and mounting dimensions of СЭ-Б-xxx



Technical characteristics

СЭ-Б-xxx (ЦИУЛ.681934.002-xx*) modification					
Characteristics	СЭ-Б-300 (-01)*	СЭ-Б-600 (-02)*	СЭ-Б-800 (-03)*	СЭ-Б-1200 (-04)*	СЭ-Б-1800 (-05)*
Power supply voltage	127 W, 50 Hz; 220 W, 50 Hz; 380 W (2 phase), 50 Hz				
Power consumption	300 W	600 W	800 W	1200 W	1800 W
Space heated	7 m ²	14 m ²	19 m ²	27 m ²	32 m ²
Overall dimensions					
Width	415,5 mm	515,5 mm	615,5 mm	845,5 mm	1060,5 mm
Height	296 mm	296 mm	296 mm	296 mm	296 mm
Thickness	101,5 mm	101,5 mm	101,5 mm	101,5 mm	101,5 mm

Overall dimensions				
	A	B	C	D
СЭ-300	265,5	400	250	70
СЭ-600	365,5	500	250	70
СЭ-800	465,5	600	250	70
СЭ-1200	695,5	830	250	70
СЭ-1800	910,5	1045	250	70

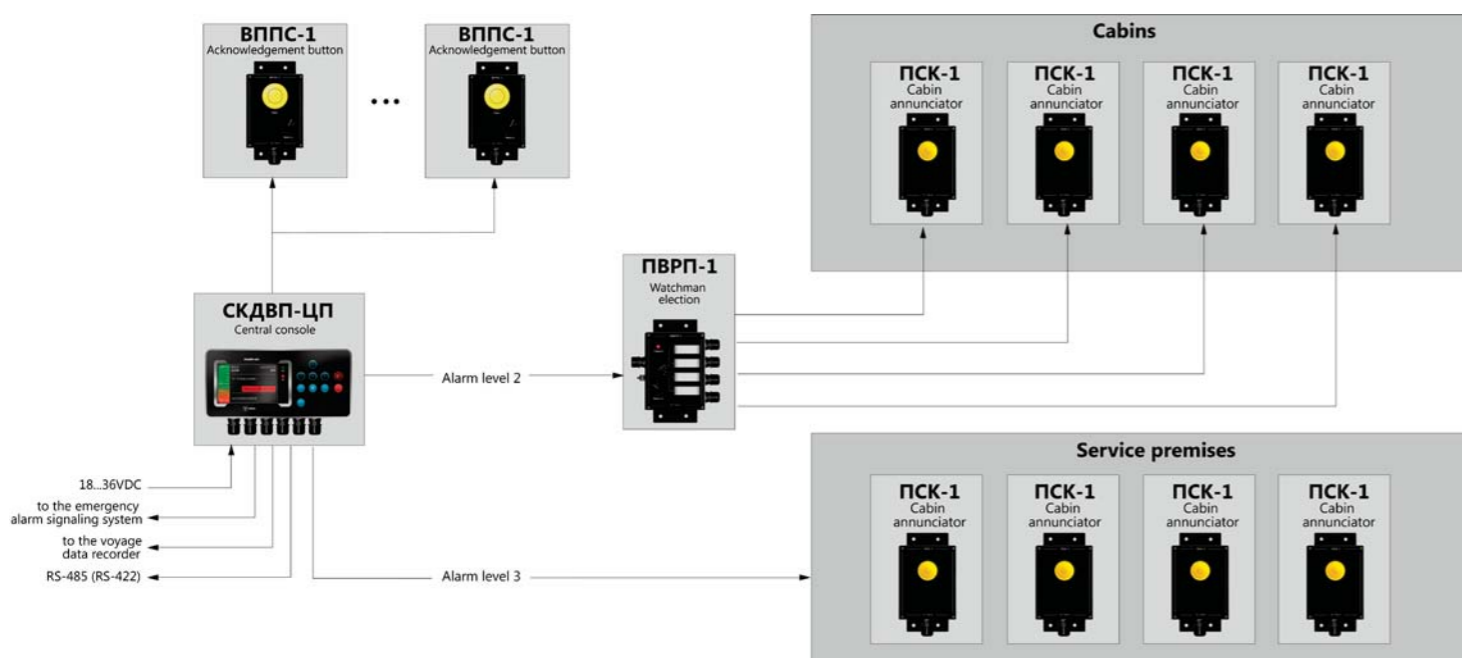


BNWAS ensures control over the head helmsman station operation of the vessel with pre-set light-and-sound signals (emitted in set intervals) requiring manual acknowledgement and reaction of the crew member on watch, otherwise the alarm annunciation activates.

Specific features:

- Three operational modes available (automatic, permanent, OFF)
- Phased multilevel annunciation with consecutive on-switching of the relevant annunciation signaling loops.
- Equipped with a night-mode illumination of the <acknowledgement> button.

Connection scheme



Description of the system modules

Central BNWAS panel

Ensures visual control over the current state of the system, setting of the operational mode and the interval count, and also provides audio-visual alarm annunciator.

- Multicolor LCD.
- Two power supply inputs for the mains- and standby power supply (indicating the presence).
- Equipped with a built-in reset button, light indicator, and sound alarm annunciator.
- Emergency call button.
- System settings locked with password.
- Illumination brightness adjustment.

Technical characteristics:

Power supply voltage: 18-36 VDC.
Power consumption: 20 W.
Protection:
- against accidental polarity reversal
- galvanic separation from the power supply network
Display: LCD 4.3", 480 x 272.
Conjugation with emergency alarm signaling system, voyage data recorder, auto-pilot, dynamic positioning system.
Access is locked with password.
Ingress protection grade: IP22.
Working temperature: -15...+55 °C.
Overall dimensions: 220 x 100 x 48 mm
Mass: 0.8 kg

Mounting format:

Hinge-mounted;
Into a notch



ПВРП-1 standby-watchman selection panel

Along with the alarm level 2 activation ensures selection of a watchman (one of four or all together).

- Alarm level 2 indication.
- Brightness adjustment.

Technical characteristics:

Power supply voltage: 18-36 VDC (supplied with BNWAS-CP).
Power consumption: 5 W.
Protection against accidental polarity reversal.
Ingress protection grade: IP44.
Working temperature: -15...+55 °C.
Overall dimensions: 156 x 140 x 70 mm
Mass: 0,5 kg

Mounting format:

Hinge-mounted;
Into a notch



ВППС-1B remote signal reception acknowledgement panel.

Ensures alarm signal acknowledgement and 1-level alarm audio-visual signaling.

- 1-level alarm indication.
- Brightness adjustment.
- Alarm signal reception acknowledgement button, zoomer.

Technical characteristics:

Power supply voltage: 18-36 VDC (supplied with BNWAS-CP).
Power consumption: 1 W.
Protection against accidental polarity reversal.
Ingress protection grade: IP44.
Working temperature: -40...+55 °C.
Overall dimensions: 161 x 90 x 80 mm
Mass: 0.5 kg

Mounting format:

Hinge-mounted;
Into a notch



ПСК-1B cabin signaling panel

Ensures 2- and 3-alarm level audio-visual signaling.

- 2- and 3-level alarm indication.

Technical characteristics:

Напряжение питания: 18...36 В (от СКДВП-ЦП).
Power supply voltage: 18-36 VDC (supplied with BNWAS-CP).
Power consumption: 1 W.
Protection against accidental polarity reversal.
Ingress protection grade: IP44.
Working temperature: -40...+55 °C.
Overall dimensions: 161 x 90 x 69 mm
Mass: 0.5 kg

Mounting format:

Hinge-mounted;
Into a notch



СВП-1002 [ЦИУЛ.425511.001] signaling system for crew call-out off the refrigerator chambers and ship's hospital



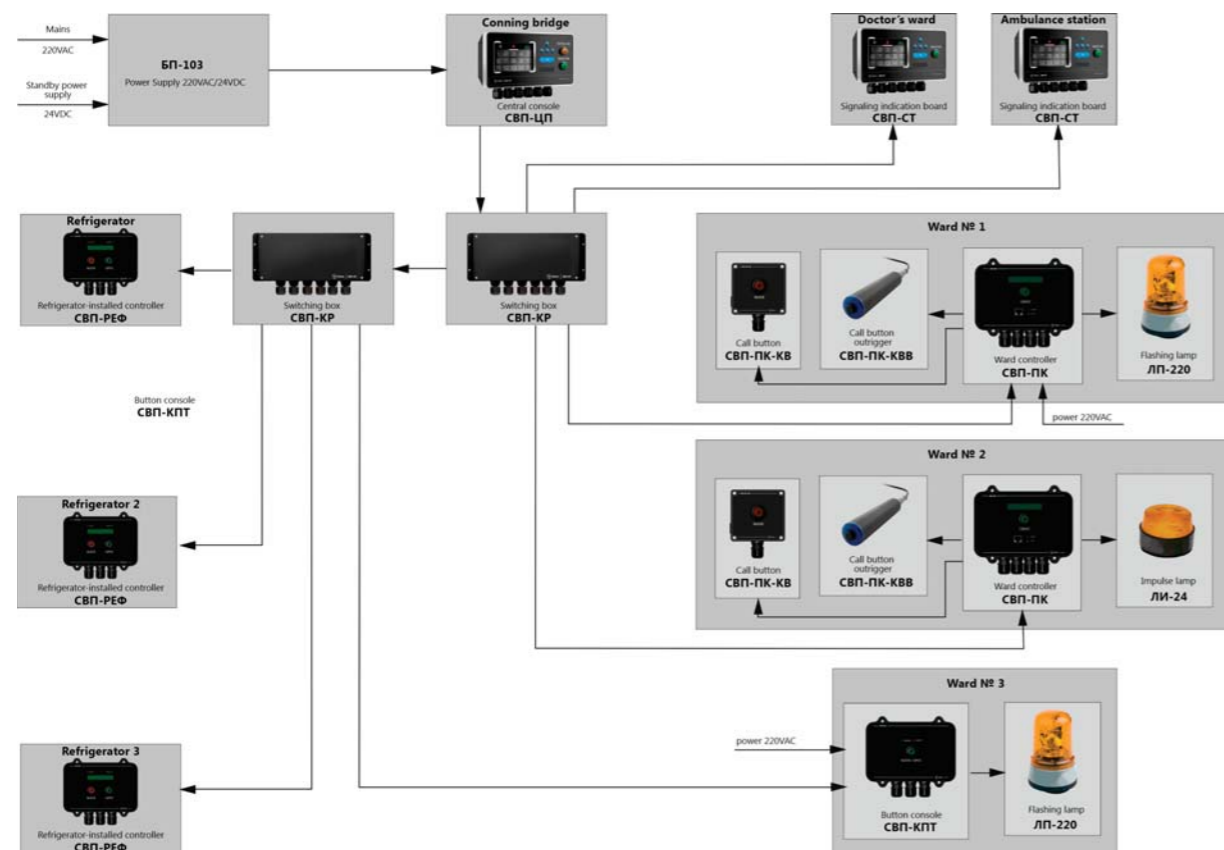
СВП-1002 [ЦИУЛ.425511.001] signaling system for crew call-out off the refrigerator chambers and ship's hospital

Ensures (with manual pushing) alarm signaling and its transmission to the watchman's station informing the watchman on presence of crew members in the refrigerator chambers, or summoning the on-duty specialist to the ward whence the signal had been emitted. May be provided with other functions requiring instant information and reaction from the stations on duty.

Specific features:

- The system ensures no-failure operation, provides for indication of any power supply loss, electric loop short-circuiting to the casing, or loop ruptures, along with the sound-and-light signaling devices operability control.
- In-call signal reduplication to the ancillary indicator board.
- Provides for both portable/remote and stationary in-call buttons application, incl. heat-resistant buttons installed in the saunas (with up to 120°C operational temperature).
- Flexible LCD expansion options provide potential to enhance surveillance zone coverage at any stage.

Connection scheme



СВП-1002 [ЦИУЛ.425511.001] signaling system for crew call-out off the refrigerator chambers and ship's hospital

System composition

СВП-ЦП central console

Ensures alarm signal reception (via audible-and-visual signal emission) from the emergency buttons activated along with indication of the information (represented as a number or designation) defining the object whence the alarm signal had been emitted.

- LCD with touch-screen.
- Indication of state of the peripheral devices.
- Brightness adjustment

Technical characteristics:

Power supply voltage: 18-36 VDC
 Provides for connection of up to 20 rooms
 Power consumption: 20 W
 Working temperature: -15...+55 °C.
 Ingress protection grade: IP22.
 Mass: 0.8 kg.
 Overall dimensions: 220 x 100 x 60 mm

Mounting format:

Hinge-mounted with a cantilever;
 Into a console (into a notch)



СВП-СТ signaling indicator board.

Ensures alarm signal reception (via audible-and-visual signal emission) from the emergency buttons activated along with indication of the information (represented as a number or designation) defining the object whence the alarm signal had been emitted. It stands by the watchman's console "echoing" the sound alarm signal when the signal has not been received with the watchman's console.

- Indication of state of the peripheral devices.
- Brightness adjustment.

Technical characteristics:

Power supply voltage: 18-36 VDC
 Provides for connection of up to 20 rooms
 Power consumption: 20 W
 Working temperature: -15...+55 °C.
 Ingress protection grade: IP22.
 Mass: 0.8 kg.
 Overall dimensions: 220 x 100 x 60 mm

Mounting format:

Hinge-mounted with a cantilever;
 Into a console (into a notch)



СВП-ПК ward controller

СВП-ПК ward controller processes and transmits all calls arriving from a single room to the central console.

- Central processor connection indication.
- Connects up to 2 buttons, equipped with a line operability controller.

Technical characteristics:

Power supply voltage: 18-36 VDC
 Provides for connection of up to 20 rooms
 Power consumption: 2 W
 Conjugation to the central processor: RS-485 interface
 Working temperature: -15...+55 °C.
 Ingress protection grade: IP22.
 Mass: 0.8 kg.
 Overall dimensions: 140 x 104 x 63 mm

Mounting format:

Hinge-mounted;
 Into a console (into a notch)



СВП-РЕФ refrigerator-installed controller

СВП-РЕФ refrigerator-installed controller processes and transmits calls arriving from refrigerator premises to the central console.

- Central processor connection indication.

Technical characteristics:

Power supply voltage: 18-36 VDC
 Provides for connection of up to 20 rooms
 Power consumption: 2 W
 Conjugation to the central processor: RS-485 interface
 Working temperature: -40...+55 °C.
 Ingress protection grade: IP22.
 Mass: 0.8 kg.
 Overall dimensions: 140 x 104 x 63 mm

Mounting format:

Hinge-mounted





СВП-КПТ button console

СВП-КПТ button console processes and transmits all calls arriving from a single room to the central console.

- Central processor connection indication.
- Call button also functions as a reset button.

Technical characteristics
 Power supply voltage: 18-36 VDC
 Power consumption: 2 W
 Conjugation to the central processor: RS-485 interface
 Ingress protection grade: IP56
 Working temperature: -40...+55 °C
 Overall dimensions: 140 x 123 x 63 mm
 Mass: 0.8 kg

Mounting format:
 Hinged



СВП-ПК-KB call button

СВП-КПТ button console processes and transmits a call to the central console (connects to СВП-ПК).

- Call-button illumination.
- Heat-resistant.

Technical characteristics
 Power supply voltage: supplied with СВП-ПК
 Power consumption: 2 W
 Ingress protection grade: IP56
 Working temperature: -40...+120 °C
 Overall dimensions: 84 x 64 x 42 mm
 Mass: 0,6 кг.

Mounting format:
 Hinged



СВП-ПК-KBB remote call-button.

Transmits a call to the central console (connects to СВП-ПК).

Technical characteristics
 Power supply voltage: supplied with СВП-ПК
 Power consumption: 1 W
 Ingress protection grade: IP56
 Working temperature: -40...+55 °C
 Overall dimensions: 114 x 30 x 30 mm
 Mass: 0,2 кг.

Any user may resort to our special web-tool (available at schemes.unicont.com) to design one's own structural scheme comprising loudspeaker-, broadcasting-, surveillance-, and batteryless communication systems, also one may consult our resources to acquaint the devices sought. The program has an intuitively comprehensible interface and an option of integral proofreading of the schemes constructed, any user with basic knowledge on the system would easily run the tool.

The schemes constructed may be uploaded to our server, downloaded, or printed. Since the system composition remains known, eventually these schemes may get included into commercial offers. The web-tool of the program doesn't require any additional software installation since it operates with a standard web-browser. The program has been written with JavaScript (along with jQuery library) + CSS + HTML, while the server section was written with PHP + MySQL.

The image displays the 'Scheme Designer' web application. It shows a user interface with various panels and a central workspace for creating electrical schematics. A large orange arrow points from the interface to a detailed schematic diagram of a signaling system. The schematic includes components like 'Источники питания 24В' (24V power sources), 'СВ-10 (6)' (6x10W speakers), and 'МШИННОЕ ОТАЖЕНИЕ' (machine compartment). Below the schematic is a table with columns for 'Изм.', 'Лист', '№ докум.', 'Лист', and 'Дата'. The table contains the following data:

Изм.	Лист	№ докум.	Лист	Дата
Рисован				
Проверен				
Утвержден				
Начертан				
Черт.				

Below the table, the document title is 'ДИШУ.465200.001' and the description is 'Система двусторонней громкоговорящей связи Unitaik (СВ-133)'. The schematic is identified as 'Схема функциональная электрическая' (Functional electrical schematic) and is page 1 of 1. The logo for UNICONT Судовая электроника is also visible.

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www.unicont.com