MCA

2025

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SHIPBORNE SYSTEMS

NPK Morsvyazavtomatica Limited Liability Company

ABOUT

NPK Morsvyazavtomatica Limited Liability Company (NPK MCA LLC) is a diversified company specializing in equipment design and manufacturing of industrial, power and shipborne equipment. The company was founded in 2003 and has been continuously growing for over 20 years. Our success is based on the innovative approach and customer care.

Under Unicont trademark NPK MCA produces electronic and mechano-electronic systems for ship control, convenience and safety of the passengers and crew. Our equipment can operate in harsh conditions of increased humidity, rolling, steady-state vibration and if there are no stationary power sources.

100%
Russian production

22 years
on the market

> 1600
employees

> 40 000 m²
manufacturing shop floor

50
dealers in Russia

> 40
dealers worldwide

Along with the manufacturing unit, NPK MCA has at its disposal research and design departments. This enables to implement innovations; therefore, reduce costs, improve quality, expand the product range and increase the production output. Our skilled professionals carefully analyze customer needs and offer the best customized solutions. Wide expertise paired with streamlined business processes enable the company to complete any project successfully.

Being reliable, cost-effective and convenient Unicont equipment complies with the current standards and has the certificates of Russian Maritime Register of Shipping and Russian Classification Society (former Russian River Register).

ФЕДЕРАЛЬНАЯ СЛУЖБА
ПО ЭКОЛОГИЧЕСКОМУ, ТЕХНОЛОГИЧЕСКОМУ И АТОМНОМУ НАДЗОРУ

ЛИЦЕНЗИЯ

Регистрационный номер **СЕ-11-101-5860** от **21 июля 2025 г.**

Лицензия выдана **обществу с ограниченной ответственностью «НПК Морсвязьавтоматика» (ООО «НПК МСА»)**

Местонахождение лицензиата **г. Санкт-Петербург, ул. Кибальчича, д. 26, литер Е**

Основной государственный регистрационный номер юридического лица (ОГРН) **1057813313909**
Идентификационный номер налогоплательщика **7842327352**

Лицензия дает право **на конструирование оборудования для ядерных установок, радиационных источников, пунктов хранения ядерных материалов и радиоактивных веществ, хранилищ радиоактивных отходов**
Объекты, на которых или в отношении которых осуществляется деятельность:
атомные станции, суда и другие плавсредства с ядерными реакторами, суда атомно-технологического обслуживания; сооружения и комплексы с промышленными и исследовательскими ядерными реакторами; другие содержащие ядерные материалы сооружения, комплексы, установки для производства, использования, переработки, транспортирования ядерного топлива и ядерных материалов;
не относящиеся к ядерным установкам комплексы, установки, аппараты, оборудование и изделия в которых содержатся радиоактивные вещества;
стационарные объекты и сооружения, не относящиеся к ядерным установкам, радиационным источникам и предназначенные для хранения ядерных материалов и радиоактивных веществ, хранения или захоронения радиоактивных отходов

Основание для выдачи лицензии **Заявление соискателя лицензии № 1085 от 18.03.2025; Решение заместителя руководителя Северо-Европейского межрегионального территориального управления по надзору за ядерной и радиационной безопасностью Федеральной службы по экологическому, технологическому и атомному надзору от 07.07.2025 №6331/В**

Срок действия лицензии **до 21 июля 2035 г.**

Лицензия действует при соблюдении прилагаемых условий действия лицензии, являющихся ее неотъемлемой частью

И. о. руководителя органа лицензирования **В.А. Джавадов**

Серия А В № 317689

ФЕДЕРАЛЬНАЯ СЛУЖБА
ПО ЭКОЛОГИЧЕСКОМУ, ТЕХНОЛОГИЧЕСКОМУ И АТОМНОМУ НАДЗОРУ

ЛИЦЕНЗИЯ

Регистрационный номер **СЕ-12-101-5861** от **21 июля 2025 г.**

Лицензия выдана **обществу с ограниченной ответственностью «НПК Морсвязьавтоматика» (ООО «НПК МСА»)**

Местонахождение лицензиата **г. Санкт-Петербург, ул. Кибальчича, д. 26, литер Е**

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Объекты, на которых или в отношении которых осуществляется деятельность:
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не относящиеся к ядерным установкам комплексы, установки, аппараты, оборудование и изделия в которых содержатся радиоактивные вещества;
стационарные объекты и сооружения, не относящиеся к ядерным установкам, радиационным источникам и предназначенные для хранения ядерных материалов и радиоактивных веществ, хранения или захоронения радиоактивных отходов

Основание для выдачи лицензии **Заявление соискателя лицензии № 1084 от 18.03.2025; Решение заместителя руководителя Северо-Европейского межрегионального территориального управления по надзору за ядерной и радиационной безопасностью Федеральной службы по экологическому, технологическому и атомному надзору от 07.07.2025 №6332/В**

Срок действия лицензии **до 21 июля 2035 г.**

Лицензия действует при соблюдении прилагаемых условий действия лицензии, являющихся ее неотъемлемой частью

И. о. руководителя органа лицензирования **В.А. Джавадов**

Серия А В № 317690

CONTENTS

DIGITAL TALK-BACK PUBLIC ADDRESS SYSTEM ICB–131 ЦИУЛ.465200.001

Digital talk-back public address system I CB–131 ЦИУЛ.465200.001 **is out of production**.

All components of ICB–131 are included in the system ITS-1010 (see. p. 6)

COMMAND PUBLIC ADDRESS SYSTEM TPA–1007 ЦИУЛ.465225.001

Command public address system TPA–1007 ЦИУЛ.465225.001 **is out of production.**

All components of TPA-1007 are included in the system ITS-1010 (see. p. 6)

COMMAND PUBLIC ADDRESS / GENERAL ALARM SYSTEM TPA–1907 ЦИУЛ.465339.001

Command public address/General alarm system TPA–1907 ЦИУЛ.465339.001 **is out of production.**

All components of TPA-1907 are included in the system ITS-1010 (see. p. 6)

DIGITAL INTEGRATED INTERCOMMUNICATION SYSTEM ITS–1010 ЦИУЛ.465200.002

Approved by
The Russian Maritime Register of Shipping
and Russian Classification Society

FUNCTIONALITY OF ITS–1010

- Public address communication in the modes
  – pair communication and quick connection of additional subscribers to a conference call
  – selective or pre-defined conference call
  – broadcast communication (commands are transmitted to all substations and all zones)
  – emergency call
- Automatic telephone communication (hereinafter - ATC) in the modes
  – pair communication (forwarding call, forwarding call if the line is busy, return call, number repetition, abbreviated dialing, etc.) and priority caller
  – selective or pre-defined conference call
- Radio telephone communication (hereinafter - RTC) with options to
  – provide an extension (via base unit) to internal telephone sets (including other RTC devices)
  – intercommunication within one base unit (the line is not busy)
- Automatic telephone line with coastal stations
- Video communication (using telephone sets of PT-VC type and digital PoE lines)
- Sending voice communication via broadcasting lines from microphone panels to pre-defined or selected users
- General ship alarm signals (or other alarms)
- Broadcasting of audio recording and radio programs from a built-in or external entertainment source
- Announcements via user substations and PBX sets
- Communication between loudspeaker system and PBX sunscribers
- Indication of incoming call by external light and sound units
- Automatic recording of voice messages
- PC-based automated workplace (AWP) to enable administration, settings and diagnostics of the system

FEATURES AND ADVANTAGES

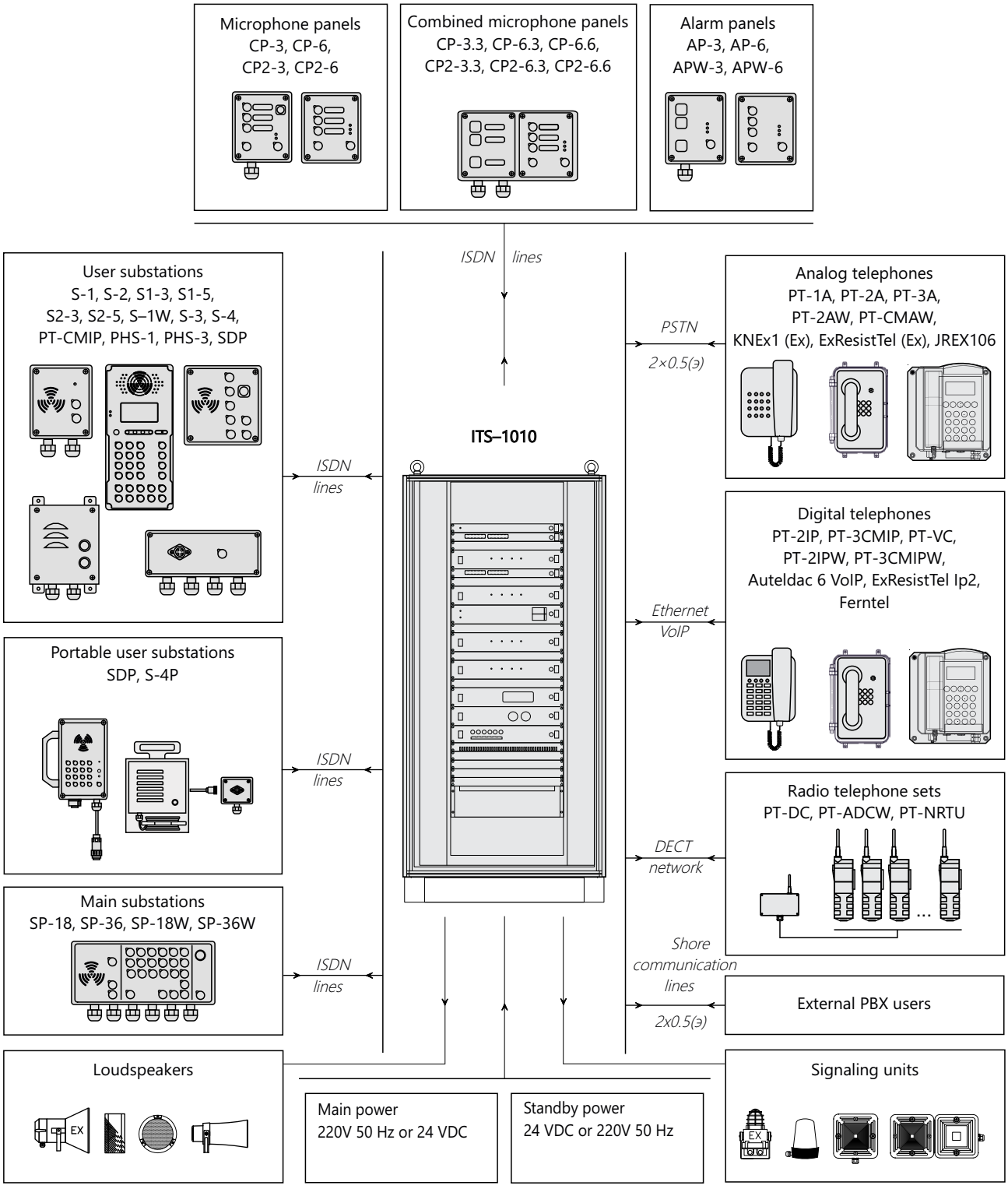
- Digital high quality communication with jamming resistance
- Long distance communication lines
- Any obsolete systems can be fully replaced using existing cabling
- Flexible architecture enables any number of subscribers
- Interface with public address system, coastal stations, satellite telecommunication
- Ready to work:
- PA substations — max. 10 seconds, PBX units — max. 120 seconds
- Optional peripheral equipment for noisy, humid and dusty areas

SPECIFICATIONS OF THE SYSTEM ITS–1010

Specifications			
Subscriber capacity	Public address network — max. 180 subscribers (can be expanded optionally)		
	PBX network — max. 1000 subscribers (can be expanded optionally)		
	DECT network (controller BSS–16) — max. 128 subscribers (can be expanded optionally)		
Communication lines	Public address units — digital, ISDN (two-wire)		
	Analog telephones: two-wire line		
	Digital telephones: 8—wire Ethernet line (PoE support)		
Communication mode with the system units	Public address units — duplex or half-duplex		
	PBX units — duplex		
Length of communication lines	Public address units — max. 700 m		
	Analog telephones — max. 1000 m		
	Digital telephones — max. 100 m		
Electrical specifications			
Supply voltage	Main power: 220 V, 50/60 Hz (180–264 V) or 24 V (18–36 V DC) Standby power: 24 V (18–36 V DC) or 220 V, 50/60 Hz (180–264 V)		
Power consumption	Defined by total power of units in the scope of delivery		
Galvanic isolation from power mains	+		
Operating specifications			
	Rack	Substations	
IP rating	IP22	IP22, IP44	IP56
Operating temperature	–15...+55 °C	–15...+55 °C	–40...+55 °C
Storage temperature	–60...+70 °C	–60...+70 °C	–60...+70 °C

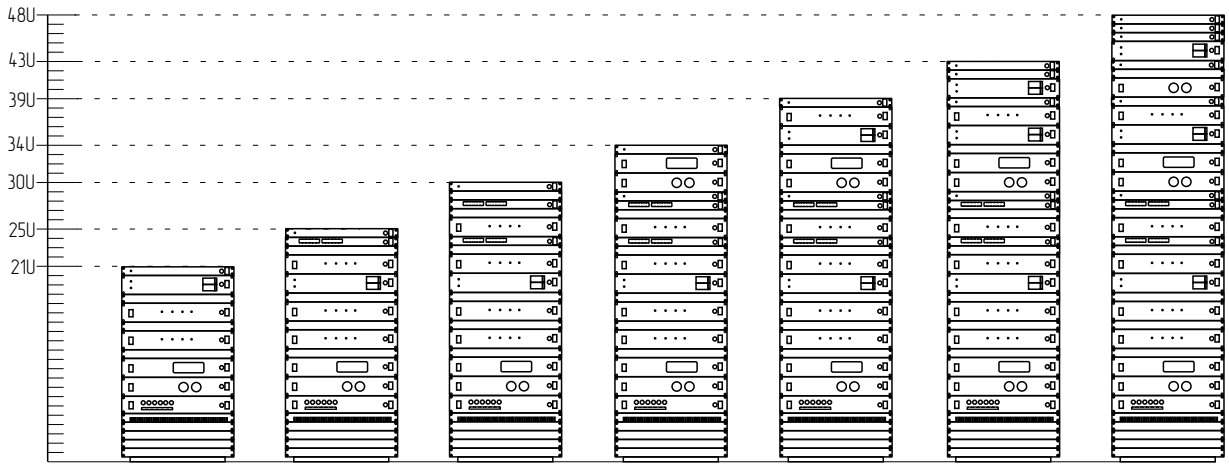
The system has been designed based on the following documents:
- Rules of the Russian Maritime Register of Shipping
- Rules of the Russian River Register
- Technical regulations on the safety of maritime transport facilities
- Technical regulations on the safety of inland waterway transport facilities

STRUCTURAL DIAGRAM



MOUNTING RACKS 19IR

Technical specifications	
Material	steel (painted, galvanized)
Optional number of units	21U / 25U / 30U / 34U /39U / 43U / 48U
IP rating	IP22
Built-in ventilation system	+
Built-in power input panel	+



ITS CENTRAL UNITS

Central units ITS-CU
To deploy an automatic telephone exchange system at a facility, switch calls between subscriber lines of the telephone network and connect to an external (shore) automatic telephone exchange.

Model	Code	Connections		Power consumption	Supply voltage, main	Supply voltage, standby	IP rating
		internal lines	shore lines				
ITS–CU–0308	ЦИУЛ.465235.106–07	8	3	100 W	~220 V, 50 Hz	⎓ 24 V	IP22
ITS–CU–0316	ЦИУЛ.465235.106–06	16	3	100 W	~220 V, 50 Hz	⎓ 24 V	IP22
ITS–CU–0324	ЦИУЛ.465235.106–05	24	3	100 W	~220 V, 50 Hz	⎓ 24 V	IP22
ITS–CU–0632	ЦИУЛ.465235.106–04	32	6	200 W	~220 V, 50 Hz	⎓ 24 V	IP22
ITS–CU–0640	ЦИУЛ.465235.106–03	40	6	200 W	~220 V, 50 Hz	⎓ 24 V	IP22
ITS–CU–0648	ЦИУЛ.465235.106–02	48	6	200 W	~220 V, 50 Hz	⎓ 24 V	IP22
ITS–CU–0656	ЦИУЛ.465235.106–01	56	6	200 W	~220 V, 50 Hz	⎓ 24 V	IP22
ITS–CU–0664	ЦИУЛ.465235.106	64	6	200 W	~220 V, 50 Hz	⎓ 24 V	IP22

PUBLIC ADDRESS CENTRAL UNITS

Central units CU-0131

- Switching of the connected devices followed by the establishment of a communication channel for two-way communication
- Connection of main stations and user substations
- Connection of digital units
- Interface with external systems (general alarm, PBX, VDR (using peripheral devices), entertainment source)
- Mounting: wall

Model	Code	Control board for transmission lines	Weight, kg
CU–0131.6	ЦИУЛ.465235.103–01	–	4.5
CU–0131.6	ЦИУЛ.465235.103–03	yes	4.7
CU–0131.12	ЦИУЛ.465235.103	–	4.7
CU–0131.12	ЦИУЛ.465235.103–02	yes	4.9
CU–0131.18	ЦИУЛ.465235.104–01	–	16.3
CU–0131.18	ЦИУЛ.465235.104–03	yes	16.5
CU–0131.24	ЦИУЛ.465235.104	–	16.5
CU–0131.24	ЦИУЛ.465235.104–02	yes	16.7
CU–0131.30	ЦИУЛ.465235.105–01	–	17.5
CU–0131.30	ЦИУЛ.465235.105–03	yes	17.7
CU–0131.36	ЦИУЛ.465235.105	–	17.7
CU–0131.36	ЦИУЛ.465235.105–02	yes	17.9

PUBLIC ADDRESS AND ALARM CENTRAL UNITS

View			
Model	CU–10	CU–200	CU-400
Code	ЦИУЛ.465331.104	ЦИУЛ.465333.101–xxx	ЦИУЛ.465333.101–xxx
Power supply (main)	24 V DC	220 V, 50/60 Hz	220 V, 50/60 Hz
Power supply (standby)	–	24 V DC	24 V DC
Power of amplifier	75 W	200 W	400 (2x 200) W
Voltage of transmission lines	30 V	100 V	100 V
Weight	4.1 kg	max. 31.8	max. 35.6
IP rating	IP22	IP22	IP22
Operating temperature	–15...+55 °C	–15...+55 °C	–15...+55 °C
Mounting	Wall, panel, bracket	Wall	Wall
Max. number of microphone panels and loudspeaker substations	6	24	24
Max. number of transmission lines	3	6	6
Max. number of alarm signals	8	6	6
Max. number of signaling circuits	2	5	5
Additionally	Built-in speaker, microphone, connector for external microphone	Depending on the model, unit can be mounted on the front panel of entertainment source MB–1 and microphone panel CP–X or CP–X.X	

Central unit 19–CU–6/12
Receives and switches voice communication from microphone panels, loudspeaker units, entertainment sources.

Switches and transmits signals from amplifiers to 6/12 zones.

Model	Code	Transmission lines	Supply voltage	Max. power consumption	Weight	Operating temperature	IP rating	Mounting
19–CU–6	ЦИУЛ.465235.101	6	⎓ 48 V	20 W	9.1 kg	–15...+55 °C	IP20	rack 19″
19–CU–12	ЦИУЛ.465235.101–01	12	⎓ 48 V	25 W	9.1 kg	–15...+55 °C	IP20	rack 19″

Alarm generator 19–AG
Generates and supplies alarm signals to zones.
Operates with combined panels and alarm panels

Model	Code	Supply voltage	Power consumption	Weight	Operating temperature	IP rating	Mounting
19–AG	ЦИУЛ.465331.101	~220 V 50 Hz / ⎓24 V	10 W	6.0 kg	–15...+55 °C	IP20	rack 19″

Zone switching unit 19–SW–4–6
Switches amplified voice communication of 19-CU and signals of entertainment source to 6 zones.

Volume control bypass via three- or four-wire circuit.

Model	Code	Zones	Supply voltage	Weight	Operating temperature	IP rating	Mounting
19–SW–4–6	ЦИУЛ.465237.101	6	⎓ 24 / 48 V	8.5 kg	–15...+55 °C	IP20	rack 19″

Entertainment switch 19–ES
Receives and switches signals from up to 6 entertainment sources to zones. A microphone can be connected.

Model	Code	Zones	Supply voltage	Power consumption	Weight	Operating temperature	IP rating	Mounting
19–ES	ЦИУЛ.465332.101	6	~220 V, 50 Hz	40 W	4.22 kg	–15...+55 °C	IP20	rack 19″

Power input panel PIP-MB /M/B
Connects rack 19″ to the main and / or standby AC mains with voltage 220 V 50 Hz and/or 24 V DC.

Model	Code	Supply voltage main	Supply voltage standby	Weight	Operating temperature	IP rating	Mounting
PIP-MB	ЦИУЛ.468242.101	~220 V, 50 Hz	⎓ 24 V	1.3 kg	–15...+55 °C	IP20	rack 19″
PIP-MB	ЦИУЛ.468242.101–01	~220 V, 50 Hz	~220 V, 50 Hz	1.3 kg	–15...+55 °C	IP20	rack 19″
PIP-MB	ЦИУЛ.468242.101–02	⎓ 24 V	⎓ 24 V	1.3 kg	–15...+55 °C	IP20	rack 19″
PIP-MB	ЦИУЛ.468242.101–03	⎓ 24 V	~220 V, 50 Hz	1.3 kg	–15...+55 °C	IP20	rack 19″
PIP-M	ЦИУЛ.468242.101–10	~220 V, 50 Hz	–	1 kg	–15...+55 °C	IP20	rack 19″
PIP-M	ЦИУЛ.468242.101–11	⎓ 24 V	–	1 kg	–15...+55 °C	IP20	rack 19″
PIP-B	ЦИУЛ.468242.101–20	–	⎓ 24 V	1 kg	–15...+55 °C	IP20	rack 19″
PIP-B	ЦИУЛ.468242.101–21	–	~220 V, 50 Hz	1 kg	–15...+55 °C	IP20	rack 19″

Audio control unit 19–PKV
Audio quality control of messages transmitted by zones.

Model	Code	Supply voltage	Power consumption	Weight	Operating temperature	IP rating	Mounting
19–PKV	ЦИУЛ.468211.101–01	⎓48 V	5 W	8.6 kg	–15...+55 °C	IP20	rack 19″

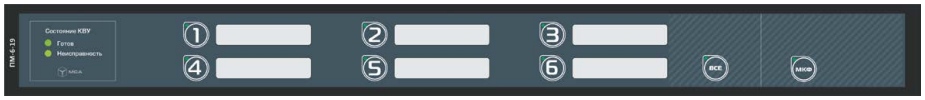
Entertainment source 19–ES
Transmits entertainment programs from USB, radio (AM/FM) to transmission zones.

Model	Code	Supply voltage	Power consumption	Weight	Operating temperature	IP rating	Mounting
19–ES	ЦИУЛ.465328.101	⎓48 V	25 W	8.6 kg	–15...+55 °C	IP20	rack 19″
19–ES	ЦИУЛ.465328.101–02	⎓24 V	25 W	8.6 kg	–15...+55 °C	IP20	rack 19″

Power amplifier 19–TPA–200/19–TPA–400
Amplifies input signals from the Central units and media broadcasting sources.
Simultaneous operation of two independent sources.

Depending on the model, max. output power is 200 or 400 (2×200) W, 100 V.

Model	Code	Supply voltage	Output voltage	Output power	Weight	Operating temperature	IP rating	Mounting
19–TPA–200	ЦИУЛ.465333.102–02	⎓ 48 V	⎓ 100 V	200 W	10.6 kg	–15...+55 °C	IP20	rack 19″
19–TPA–200	ЦИУЛ.465333.102–03	⎓ 24 V	⎓ 100 V	200 W	10.6 kg	–15...+55 °C	IP20	rack 19″
19–TPA–200	ЦИУЛ.465333.102–05	~220 V, 50 Hz	⎓ 100 V	200 W	10.6 kg	–15...+55 °C	IP20	rack 19″
19–TPA–400	ЦИУЛ.465333.102	⎓ 48 V	⎓ 100 V	400 W or 2×200 W	13.7 kg	–15...+55 °C	IP20	rack 19″
19–TPA–400	ЦИУЛ.465333.102–01	⎓ 24 V	⎓ 100 V	400 W or 2×200 W	13.7 kg	–15...+55 °C	IP20	rack 19″
19–TPA–400	ЦИУЛ.465333.102–04	~220 V, 50 Hz	⎓ 100 V	400 W or 2×200 W	13.7 kg	–15...+55 °C	IP20	rack 19″



Broadcasting control unit 19–CP–6
Transmits voice messages to max. 6 selected zones.

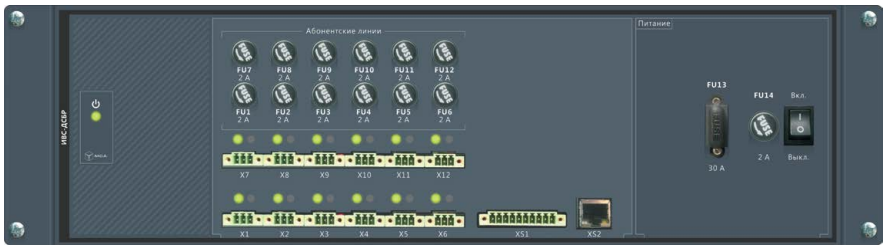
Model	Code	Zones	Supply voltage	Power consumption	Weight	Operating temperature	IP rating	Mounting
19–CP–6	ЦИУЛ.465337.101	6	⎓ 48 V	5 W	4 kg	–15...+55 °C	IP20	rack 19″

Zones operation check units 19–KTL–6/OKTL–1
Provides automatic operation control of up to 6 zones (rupture, overvoltage, short-circuit) using the control signals returned to response terminal.

Model	Code	Number of zones	Supply voltage	Power consumption	Weight	Operating temperature	IP rating	Mounting
19–KTL–6	ЦИУЛ.465338.101	6	⎓24 V /⎓48 V	30 W	5.3 kg	–15...+55 °C	IP20	rack 19″
OKTL–1	ЦИУЛ.465338.101	6	From transmission zone	_	0.8 kg	–40...+55 °C	IP56	wall

Central unit ITS-CUICB
Receives and switches the signals from user substations and control consoles.
Connects max. 12 units.

Model	Code	Number of zones	Supply voltage	Power consumption	Weight	Operating temperature	IP rating	Mounting
ITS-CUICB	ЦИУЛ.465235.102	12	⎓ 48 V	15 W	10 kg	–15...+55 °C	IP20	rack 19″
ITS-CUICB	ЦИУЛ.465235.102–01	12	⎓ 24 V	15 W	10 kg	–15...+55 °C	IP20	rack 19″



Expansion unit ITS-TBSW
To increase a number of loudspeaker subscriber lines.

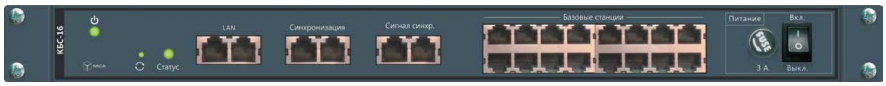
Model	Code	Connected loudspeaker substations	Supply voltage	Power consumption	Weight	Operating temperature	IP rating	Mounting
ITS-TBSW–12	ЦИУЛ.465235.112	12	⎓ 24 V	15 W	9.5 kg	–15...+55 °C	IP20	rack 19″
ITS-TBSW–12	ЦИУЛ.465235.112–02	12	⎓ 48 V	15 W	9.5 kg	–15...+55 °C	IP20	rack 19″
ITS-TBSW–6	ЦИУЛ.465235.112–01	6	⎓ 24 V	15 W	9.4 kg	–15...+55 °C	IP20	rack 19″
ITS-TBSW–6	ЦИУЛ.465235.112–03	6	⎓ 48 V	15 W	9.4 kg	–15...+55 °C	IP20	rack 19″

IP Server ITS-CUIP
Routing of service and voice streams between subscriber devices of a telephone network using a protocol such as SIP, as well as external control (via Ethernet) of PBX expansion modules.

Model	Code	Supply voltage	Max. power consumption	Weight	Operating temperature	IP rating	Mounting
ITS-CUIP	ЦИУЛ.465235.107	⎓ 24 V	200 W	6.6 kg	–15...+55 °C	IP20	rack 19″
ITS-CUIP	ЦИУЛ.465235.107–01	~220 V, 50 Hz	200 W	6.6 kg	–15...+55 °C	IP20	rack 19″
ITS-CUIP	ЦИУЛ.465235.107–02	⎓ 48 V	410 W	5.8 kg	–15...+55 °C	IP20	rack 19″

Network switch SW–16 / SW–24
Switches network data streams 10 / 100 / 1000Base — T of 16 / 24 subscriber units operating with Ethernet.

Model	Code	Ports	Supply voltage	Power consumption	Weight	Operating temperature	IP rating	Mounting
SW–16	ЦИУЛ.465235.113	16	⎓ 24 V	13 W	3.5 kg	–15...+55 °C	IP20	rack 19″
SW–16	ЦИУЛ.465235.113–04	16	⎓ 48 V	13 W	3.5 kg	–15...+55 °C	IP20	rack 19″
SW–16	ЦИУЛ.465235.113–09	16	~220 V, 50 Hz	13 W	3.5 kg	–15...+55 °C	IP20	rack 19″
SW–16–W	ЦИУЛ.465235.113–01	16	⎓ 24 V	13 W	3.7 kg	–15...+55 °C	IP22	hinged
SW–16–W	ЦИУЛ.465235.113–05	16	⎓ 48 V	13 W	3.7 kg	–15...+55 °C	IP22	hinged
SW–16–W	ЦИУЛ.465235.113–06	16	~220 V, 50 Hz	13 W	3.7 kg	–15...+55 °C	IP22	hinged
SW–24	ЦИУЛ.465235.113–02	24	⎓ 24 V	20 W	5.5 kg	–15...+55 °C	IP20	rack 19″
SW–24	ЦИУЛ.465235.113–07	24	⎓ 48 V	20 W	5.5 kg	–15...+55 °C	IP20	rack 19″
SW–24	ЦИУЛ.465235.113–08	24	~220 V, 50 Hz	20 W	5.5 kg	–15...+55 °C	IP20	rack 19″



Base stations switch BSS–16
Deploys a DECT standard radio telephone network (using wireless communication sets S-DRTU).

- 16 ports for base stations, power supply from communication lines
- Service of subscribers of the own network (radio telephone network DECT standard) via 128 channels
- Seamless roaming mode for home users (current connection is not interrupted while transferring between base stations)
- Several controllers can work together to form a single DECT network with a common address space and roaming mode

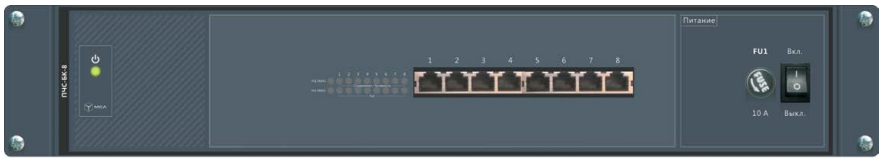
Model	Code	Supply voltage	Power consumption		Weight	Operating temperature	IP rating	Mounting
			own	Max.				
BSS–16	ЦИУЛ.465235.108	~220 V, 50 Hz / ⎓ 48 V	10 W	250 W	4.7 kg	–15...+55 °C	IP20	rack 19″
BSS–16	ЦИУЛ.465235.108–01	~220 V, 50 Hz / ⎓ 48 V	10 W	250 W	5.1 kg	–15...+55 °C	IP20	wall

FXS-8 / FXS-16 / FXS-24 / FXS-48 increases the telephone network capacity to 8/16/24/48 analog lines.
Wire communication lines to connect to analog user devices.

Model	Code	Lines	Supply voltage	Power consumption	Weight	Operating temperature	IP rating	Mounting
FXS-8	ЦИУЛ.465235.109–09	8	⎓ 24 V	22 W	6.4 kg	–15...+55 °C	IP20	rack 19″
FXS-8	ЦИУЛ.465235.109–04	8	⎓ 48 V	22 W	6.4 kg	–15...+55 °C	IP20	rack 19″
FXS-8	ЦИУЛ.465235.109–17	8	~220 V, 50 Hz	22 W	6.4 kg	–15...+55 °C	IP20	rack 19″
FXS-16	ЦИУЛ.465235.109–08	16	⎓ 24 V	80 W	8.7 kg	–15...+55 °C	IP20	rack 19″
FXS-16	ЦИУЛ.465235.109–03	16	⎓ 48 V	80 W	8.7 kg	–15...+55 °C	IP20	rack 19″
FXS-16	ЦИУЛ.465235.109–16	16	~220 V, 50 Hz	80 W	8.7 kg	–15...+55 °C	IP20	rack 19″
FXS-24	ЦИУЛ.465235.109–07	24	⎓ 24 V	80 W	8.7 kg	–15...+55 °C	IP20	rack 19″
FXS-24	ЦИУЛ.465235.109–02	24	⎓ 48 V	80 W	8.7 kg	–15...+55 °C	IP20	rack 19″
FXS-24	ЦИУЛ.465235.109–15	24	~220 V, 50 Hz	80 W	8.7 kg	–15...+55 °C	IP20	rack 19″
FXS-48	ЦИУЛ.465235.109–05	48	⎓ 24 V	150 W	10.0 kg	–15...+55 °C	IP20	rack 19″
FXS-48	ЦИУЛ.465235.109	48	⎓ 48 V	150 W	10.0 kg	–15...+55 °C	IP20	rack 19″
FXS-48	ЦИУЛ.465235.109–13	48	~220 V, 50 Hz	150 W	10.0 kg	–15...+55 °C	IP20	rack 19″

FXO-4 / FXO-8
provides connection to coastal lines via 4 / 8 ports.

Model	Code	Lines	Supply voltage	Power consumption	Weight	Operating temperature	IP rating	Mounting
FXO-4	ЦИУЛ.465235.110–03	4	⎓ 24 V	20 W	5.6 kg	–15...+55 °C	IP20	rack 19″
FXO-4	ЦИУЛ.465235.110–01	4	⎓ 48 V	20 W	5.6 kg	–15...+55 °C	IP20	rack 19″
FXO-4	ЦИУЛ.465235.110–06	4	~220 V, 50 Hz	20 W	5.6 kg	–15...+55 °C	IP20	rack 19″
FXO-8	ЦИУЛ.465235.110–02	8	⎓ 24 V	20 W	5.6 kg	–15...+55 °C	IP20	rack 19″
FXO-8	ЦИУЛ.465235.110	8	⎓ 48 V	20 W	5.6 kg	–15...+55 °C	IP20	rack 19″
FXO-8	ЦИУЛ.465235.110–05	8	~220 V, 50 Hz	20 W	5.6 kg	–15...+55 °C	IP20	rack 19″



Extension unit
POE-SW-8 / POE-SW-16 / POE-SW-24
Increases the telephone network capacity to 8/16/24 lines of PoE or Ethernet standard (10 / 100 / 1000Base-T).

Model	Code	Lines	Supply voltage	Power consumption	Weight	Operating temperature	IP rating	Mounting
POE-SW-8	ЦИУЛ.465235.111–03	8	⎓ 24 V	160 W	9.05 kg	–15...+55 °C	IP20	rack 19″
POE-SW-8	ЦИУЛ.465235.111–11	8	⎓ 48 V	160 W	9.05 kg	–15...+55 °C	IP20	rack 19″
POE-SW-8	ЦИУЛ.465235.111–12	8	~220 V, 50 Hz	160 W	9.05 kg	–15...+55 °C	IP20	rack 19″
POE-SW-8–W	ЦИУЛ.465235.111–05	8	⎓ 24 V	160 W	9.05 kg	–15...+55 °C	IP20	wall
POE-SW-8–W	ЦИУЛ.465235.111–29	8	⎓ 48 V	160 W	9.05 kg	–15...+55 °C	IP20	wall
POE-SW-8–W	ЦИУЛ.465235.111–14	8	~220 V, 50 Hz	160 W	9.05 kg	–15...+55 °C	IP20	wall
POE-SW-16	ЦИУЛ.465235.111–02	8	⎓ 24 V	280 W	7.6 kg	–15...+55 °C	IP20	rack 19″
POE-SW-16	ЦИУЛ.465235.111–09	8	⎓ 48 V	280 W	7.6 kg	–15...+55 °C	IP20	rack 19″
POE-SW-16	ЦИУЛ.465235.111–10	8	~220 V, 50 Hz	280 W	7.6 kg	–15...+55 °C	IP20	rack 19″
POE-SW-16 –W	ЦИУЛ.465235.111–04	16	⎓ 24 V	280 W	7.6 kg	–15...+55 °C	IP20	wall
POE-SW-16 –W	ЦИУЛ.465235.111–30	16	⎓ 48 V	280 W	7.6 kg	–15...+55 °C	IP20	wall
POE-SW-16 –W	ЦИУЛ.465235.111–13	16	~220 V, 50 Hz	280 W	7.6 kg	–15...+55 °C	IP20	wall
POE-SW-24	ЦИУЛ.465235.111–01	24	⎓ 24 V	400 W	7.6 kg	–15...+55 °C	IP20	rack 19″
POE-SW-24	ЦИУЛ.465235.111–07	24	⎓ 48 V	400 W	7.6 kg	–15...+55 °C	IP20	rack 19″
POE-SW-24	ЦИУЛ.465235.111–08	24	~220 V, 50 Hz	400 W	7.6 kg	–15...+55 °C	IP20	rack 19″
POE-SW-24–W	ЦИУЛ.465235.111–16	24	⎓ 24 V	400 W	7.6 kg	–15...+55 °C	IP20	wall
POE-SW-24–W	ЦИУЛ.465235.111–17	24	⎓ 48 V	400 W	7.6 kg	–15...+55 °C	IP20	wall
POE-SW-24–W	ЦИУЛ.465235.111–18	24	~220 V, 50 Hz	400 W	7.6 kg	–15...+55 °C	IP20	wall

POWER SUPPLY UNITS

Power supply unit PS–103 / PS–103–20
Supplies the system equipment with unregulated voltage 24 V DC.
Operates with single-phase mains 50 (60) Hz and voltage 220 V AC.

Model	Code	Supply voltage		Power consumption	Output voltage	Connected loads	Weight	Operating temperature	IP rating	Mounting
		main / standby	output							
PS–103	ЦИУЛ.436247.103	~220 V, 50 Hz / ⎓ 24 V	18-30 V	240 W	192 W	3	4.4 kg	–15...+55 °C	IP22	wall
PS–103–20	ЦИУЛ.436247.104	~220 V, 50 Hz / ⎓ 24 V	18-30 V	450 W	400 W	4	9.3 kg	–15...+55 °C	IP22	wall

Power supply units
19–PS–500–24(48) / 19–PS–1000–24 (48)
Supplies rack equipment 19″ from power mains 220 V AC, frequency 50 Hz and 24 V DC (switching from one to another)

with regulated output voltage 24 or 48 V DC power up to 500 / 1000 W.

Model	Code	Voltage		Power consumption	Output power	Weight	Operating temperature	IP rating	Mounting
		main / standby	output						
19–PS–500–24	ЦИУЛ.436537.101–03	~220 V, 50 Hz / ⎓ 24 V	⎓ 24 V	500 W	400 W	11.3 kg	–15...+55 °C	IP20	rack 19″
19–PS–500–48	ЦИУЛ.436537.101–01	~220 V, 50 Hz / ⎓ 24 V	⎓ 48 V	500 W	400 W	11.3 kg	–15...+55 °C	IP20	rack 19″
19–PS–1000–24	ЦИУЛ.436537.101–02	~220 V, 50 Hz / ⎓ 24 V	⎓ 24 V	1000 W	800 W	12.3 kg	–15...+55 °C	IP20	rack 19″
19–PS–1000–48	ЦИУЛ.436537.101	~220 V, 50 Hz/ ⎓ 24 V	⎓ 48 V	1000 W	800 W	12.3 kg	–15...+55 °C	IP20	rack 19″

Power supply unit
ITS-PS –1500–24(48) / ITS-PS –2000–24 (48)
Supplies rack equipment 19” from power mains 220 V AC, frequency 50 Hz and 24 V DC (switching from one to another)

with regulated output voltage 24 or 48 V DC power up to 1500 / 2000 W.

Model	Code	Supply voltage, main	Output voltage	Output power	Weight	Operating temperature	IP rating	Mounting
ITS-PS –1500–24	ЦИУЛ.436237.102	~220 V, 50 Hz	⎓ 24 V	1500 W	10 kg	–15...+55 °C	IP20	rack 19″
ITS-PS –1500–48	ЦИУЛ.436237.102–01	~220 V, 50 Hz	⎓ 48 V	1500 W	10 kg	–15...+55 °C	IP20	rack 19″
ITS-PS –2000–24	ЦИУЛ.436237.104	~220 V, 50 Hz	⎓ 24 V	2000 W	10 kg	–15...+55 °C	IP20	rack 19″
ITS-PS –2000–48	ЦИУЛ.436237.104–01	~220 V, 50 Hz	⎓ 48 V	2000 W	10 kg	–15...+55 °C	IP20	rack 19″

Uninterruptible power supply unit ITS-PS –350
Supplies rack equipment 19” from power mains ~220 V DC 50 Hz and built-in battery (9.6 A·h), rated output voltage 24 V power 350 W.

Model	Code	Supply voltage	Built-in battery	Output voltage	Power consumption	Output power	Weight	Operating temperature	IP rating	Mounting
ITS-PS –350	ЦИУЛ.436247.105	~220 V, 50 Hz	9,6 A·h	⎓ 24 V	600 W	350 W	16.7 kg	–15...+55 °C	IP20	rack 19″

Standby power supply unit ITS–CH –105

- charges external storage battery 24 V capacity up to 200 A·h.
- supplies rack devices from the chargeable battery.

Model	Code	Supply voltage	Output voltage	Max. capacity	Weight	Operating temperature	IP rating	Mounting
ITS–CH –105	ЦИУЛ.436537.103	~220 V, 50 Hz	⎓ 24 V	200 A·h	12 kg	–15...+55 °C	IP20	rack 19″
ITS–CH –105	ЦИУЛ.436537.103–01	⎓ 24 V	⎓ 24 V	200 A·h	12 kg	–15...+55 °C	IP20	rack 19″

Automatic power switch ITS-APS –120

- Provides automatic mains/standby switch in case of voltage failure.
- 6 outputs to connect load.
- Depending on the model, input voltage switching 220 V frequency 50 Hz or 24 V DC.

Model	Code	Supply voltage		Power consumption	Weight	Operating temperature	IP rating	Mounting
		main	standby					
ITS-APS –120–220	ЦИУЛ.468345.102–01	~220 V, 50 Hz	~220 V, 50 Hz	10 W	11.2 kg	–15...+55 °C	IP20	rack 19″
ITS-APS –120–24	ЦИУЛ.468345.102	⎓ 24 V	⎓24 V	10 W	11.2 kg	–15...+55 °C	IP20	rack 19″

Power input panel PIP-MB / PIP-M / PIP-B
Connects rack to main and / or standby power mains (50 Hz, 220 V AC and/or 27 V DC)

Model	Code	Supply voltage		Weight	Operating temperature	IP rating	Mounting
		main	standby				
PIP-MB	ЦИУЛ.468242.101	~220 V, 50 Hz	⎓ 24 V	1.3 kg	–15...+55 °C	IP20	rack 19″
PIP-MB	ЦИУЛ.468242.101–01	~220 V, 50 Hz	~220 V, 50 Hz	1.3 kg	–15...+55 °C	IP20	rack 19″
PIP-MB	ЦИУЛ.468242.101–02	⎓ 24 V	⎓ 24 V	1.3 kg	–15...+55 °C	IP20	rack 19″
PIP-MB	ЦИУЛ.468242.101–03	⎓ 24 V	~220 V, 50 Hz	1.3 kg	–15...+55 °C	IP20	rack 19″
PIP-M	ЦИУЛ.468242.101–10	~220 V, 50 Hz	–	1.0 kg	–15...+55 °C	IP20	rack 19″
PIP-M	ЦИУЛ.468242.101–11	⎓ 24 V	–	1.0 kg	–15...+55 °C	IP20	rack 19″
PIP-B	ЦИУЛ.468242.101–20	–	⎓ 24 V	1.0 kg	–15...+55 °C	IP20	rack 19″
PIP-B	ЦИУЛ.468242.101–21	–	~220 V, 50 Hz	1.0 kg	–15...+55 °C	IP20	rack 19″

USER UNITS

Talk-back communication in the loudspeaker network with optional telephone communication.

Model	Code	Loudspeaker zones, pcs	Output to transmission lines and connect to PBX	LCD	Built-in loudspeaker	Headset, microphone, telephone	External loudspeaker	External signaling unit	Wing station	IP rating	Mounting	Notes
PT-CMIP –W	ЦИУЛ.465235.114–01	9	+	+	+	All microphones, headsets, intercom helmets, telephones	+	+	+	IP44	wall	–
PT-CMIP –P	ЦИУЛ.465235.114	9	+	+	+		+	+	+	IP44	panel	–
PT-CMIP –10W	ЦИУЛ.465237.102–09	10	+	+	+		+	+	+	IP44	wall	–
PT-CMIP –10P	ЦИУЛ.465237.102–08	10	+	+	+		+	+	+	IP44	panel	–
PT-CMIP –20W	ЦИУЛ.465237.102–07	20	+	+	+		+	+	+	IP44	wall	–
PT-CMIP –20P	ЦИУЛ.465237.102–06	20	+	+	+		+	+	+	IP44	panel	–
PT-CMIP –30W	ЦИУЛ.465237.102–05	30	+	+	+		+	+	+	IP44	wall	–
PT-CMIP –30P	ЦИУЛ.465237.102–04	30	+	+	+		+	+	+	IP44	panel	–
PT-CMIP –40W	ЦИУЛ.465237.102–03	40	+	+	+		+	+	+	IP44	wall	–
PT-CMIP –40P	ЦИУЛ.465237.102–02	40	+	+	+		+	+	+	IP44	panel	–
PT-CMIP –50W	ЦИУЛ.465237.102–01	50	+	+	+		+	+	+	IP44	wall	–
PT-CMIP –50W	ЦИУЛ.465237.102	50	+	+	+		+	+	+	IP44	panel	–
PHS (Ex)	ЦИУЛ.465235.124	9	+	-	+	M-3W (Ex), HS-4 (Ex	+	+	+	IP56	Wall	Explosion proof
PHS –1	ЦИУЛ.465235.120–01	9	+	–	+	M–3W, M–3–10W, HS–4C(AC), HS–6C(AC), TH–4M, TH–4S, H–HS	+	+	+	IP56	wall	–
PHS –3	ЦИУЛ.465235.120	9	+	–	–		+	+	+	IP56	wall	–
SDP	ЦИУЛ.465235.121	9	+	–	+		–	–	–	IP56	portable	10 m cable

PT-CMIP

PHS (Ex)

PHS–1

SDP

Talk-back communication with one or several pre-defined loudspeaker subscribers.

Model	Code	Loudspeaker zones, pcs	Output to transmission lines and PBX connection	LCD	Built-in loudspeaker	Headset, microphone, telephone	External loudspeaker	External signaling unit	Wing station	IP rating	Mounting	Notes
S1-WM	ЦИУЛ.465235.115–03	1	–	–	+	Built-in microphone	–	+	–	IP44	wall	–
S1-PM	ЦИУЛ.465235.115–02	1	–	–	+		–	+	–	IP44	panel	–
S–1W	ЦИУЛ.465235.117	1	–	–	+		–	+	–	IP56	wall	–
S–2–WM	ЦИУЛ.465235.115–01	1	–	–	–	M–1, M–2	–	+	–	IP44	wall	–
S–2–PM	ЦИУЛ.465235.115	1	–	–	–	M–1, M–2	–	+	–	IP44	panel	–
S–3	ЦИУЛ.465235.118	1	–	–	–	M–3, M–3–10, HS–4C(AC), HS–6C(AC), TH–4M, TH–4S	+	+	–	IP56	wall	–
S–4	ЦИУЛ.465235.119	1	–	–	–	–	+	+	–	IP56	wall	–
S–4P	ЦИУЛ.465235.119–01	1	–	–	Built-in speaker with a function of built-in microphone		–	–	–	IP56	portable	10 m cable
S1-5-WM	ЦИУЛ.465235.116–05	5	–	–	+	Built-in microphone	–	+	–	IP44	wall	–
S1-5-PM	ЦИУЛ.465235.116–04	5	–	–	+		–	+	–	IP44	panel	–
S1-3-WM	ЦИУЛ.465235.116–07	3	–	–	+		–	+	–	IP44	wall	–
S1-3-PM	ЦИУЛ.465235.116–06	3	–	–	+		–	+	–	IP44	panel	–
S2-5-WM	ЦИУЛ.465235.116–01	5	–	–	+	M–1, M–2	–	+	–	IP44	wall	–
S2-5-PM	ЦИУЛ.465235.116	5	–	–	+	M–1, M–2	–	+	–	IP44	panel	–
S2-3-WM	ЦИУЛ.465235.116–03	3	–	–	+	M–1, M–2	–	+	–	IP44	wall	–
S2-3-PM	ЦИУЛ.465235.116–02	3	–	–	+	M–1, M–2	–	+	–	IP44	panel	–

S–1–WM

S–1W

S–2–WM

S–3

S–4

S–4P

S1–3 / S1–5

S2–3 / S2–5

BRIDGE WING SUBSTATION

- SW–1 operates only together with main substation SP–XX and user units PT-CMIP of all models
- Connection of external loudspeaker

Model	Code	Mounting	IP rating	Microphones	Headset
SW-1-WM	ЦИУЛ. 468344.103	wall	IP56	M-3, M-3–10	HS–4, HS–6
SW-1-PM	ЦИУЛ. 468344.103–01	panel	IP56	M-3, M-3–10	HS–4, HS–6

ALARM PANELS

Sends alarm signals to zones.

Model	Code	Alarms	Channels	IP rating	Mounting
AP-3-PM	ЦИУЛ.468365.103–03	3	1	IP44	panel
AP-3-WM	ЦИУЛ.468365.103–04	3	1	IP44	wall
AP-3-TM	ЦИУЛ.468365.103–05	3	1	IP44	bracket
AP-6-PM	ЦИУЛ.468365.103	6	1	IP44	panel
AP-6-WM	ЦИУЛ.468365.103–01	6	1	IP44	wall
AP-6-TM	ЦИУЛ.468365.103–02	6	1	IP44	bracket
AP–3–19	ЦИУЛ.468365.102–01	3	1	IP44	panel
AP–6–19	ЦИУЛ.468365.102	6	1	IP44	panel
APW-3	ЦИУЛ.468365.104–01	3	1	IP56	wall
APW-6	ЦИУЛ.468365.104	6	1	IP56	wall
AP2-3-PM	ЦИУЛ.468365.106–03	3	2	IP44	panel
AP2-3-WM	ЦИУЛ.468365.106–04	3	2	IP44	wall
AP2-3-TM	ЦИУЛ.468365.106–05	3	2	IP44	bracket
AP2-6-PM	ЦИУЛ.468365.106	6	2	IP44	panel
AP2-6-WM	ЦИУЛ.468365.106–01	6	2	IP44	wall
AP2-6-TM	ЦИУЛ.468365.106–02	6	2	IP44	bracket
AP2–3–19	ЦИУЛ.468365.105–01	3	2	IP44	panel
AP2–6–19	ЦИУЛ.468365.105	6	2	IP44	panel
APW2-3	ЦИУЛ.468365.107–01	3	2	IP56	wall
APW2-6	ЦИУЛ.468365.107	6	2	IP56	wall

MICROPHONE PANELS

Transmits voice messages to selected zones and actuates alarm signaling (if alarm buttons are available).

CP–6

CPW-6

CP–6.6

CPW-6

Model	Code	Zones	Channels	Alarms	IP rating	Mounting	Accessories
CP-3-PM	ЦИУЛ.465337.103–03	3	1	–	IP44	panel	M–1, M–2
CP-3-WM	ЦИУЛ.465337.103–04	3	1	–	IP44	wall	M–1, M–2
CP-3-TM	ЦИУЛ.465337.103–05	3	1	–	IP44	bracket	M–1, M–2
CP-6-PM	ЦИУЛ.465337.103	6	1	–	IP44	panel	M–1, M–2
CP-6-WM	ЦИУЛ.465337.103–01	6	1	–	IP44	wall	M–1, M–2
CP-6-TM	ЦИУЛ.465337.103–02	6	1	–	IP44	bracket	M–1, M–2
CP-3-19	ЦИУЛ.465337.102–01	3	1	–	IP44	panel	M–1, M–2
CP-6-19	ЦИУЛ.465337.102	6	1	–	IP44	panel	M–1, M–2
CPW-3	ЦИУЛ.465337.104–01	3	1	–	IP56	wall	M–3 M–3–10
CPW-6	ЦИУЛ.465337.104	6	1	–	IP56	wall	M–3 M–3–10
CP2-3-PM	ЦИУЛ.465337.106–03	3	2	–	IP44	panel	M–1, M–2
CP2-3-WM	ЦИУЛ.465337.106–04	3	2	–	IP44	wall	M–1, M–2
CP2-3-TM	ЦИУЛ.465337.106–05	3	2	–	IP44	bracket	M–1, M–2
CP2-6-PM	ЦИУЛ.465337.106	6	2	–	IP44	panel	M–1, M–2
CP2-6-WM	ЦИУЛ.465337.106–01	6	2	–	IP44	wall	M–1, M–2
CP2-6-TM	ЦИУЛ.465337.106–02	6	2	–	IP44	bracket	M–1, M–2
CP2-3-19	ЦИУЛ.465337.105–01	3	2	–	IP44	panel	M–1, M–2
CP2-6-19	ЦИУЛ.465337.105	6	2	–	IP44	panel	M–1, M–2
CPW2-3	ЦИУЛ.465337.107–01	3	2	–	IP56	wall	M–3 M–3–10
CPW2-6	ЦИУЛ.465337.107	6	2	–	IP56	wall	M–3 M–3–10
CP-3.3-PM	ЦИУЛ.465337.108–06	3	1	3	IP44	panel	M–1, M–2
CP-3.3-WM	ЦИУЛ.465337.108–07	3	1	3	IP44	wall	M–1, M–2
CP-3.3-TM	ЦИУЛ.465337.108–08	3	1	3	IP44	bracket	M–1, M–2
CP-6.3-PM	ЦИУЛ.465337.108–03	6	1	3	IP44	panel	M–1, M–2
CP-6.3-WM	ЦИУЛ.465337.108–04	6	1	3	IP44	wall	M–1, M–2
CP-6.3-TM	ЦИУЛ.465337.108–05	6	1	3	IP44	bracket	M–1, M–2
CP-6.6-PM	ЦИУЛ.465337.108	6	1	6	IP44	panel	M–1, M–2
CP-6.6-WM	ЦИУЛ.465337.108–01	6	1	6	IP44	wall	M–1, M–2
CP-6.6-TM	ЦИУЛ.465337.108–02	6	1	6	IP44	bracket	M–1, M–2
CPW-3.3	ЦИУЛ.465337.109–02	3	1	3	IP56	wall	M–3 M–3–10
CPW-6.3	ЦИУЛ.465337.109–01	6	1	3	IP56	wall	M–3 M–3–10
CPW-6.6	ЦИУЛ.465337.109	6	1	6	IP56	wall	M–3 M–3–10
CP2-3.3-PM	ЦИУЛ.465337.110–06	3	2	3	IP44	panel	M–1, M–2
CP2-3.3-WM	ЦИУЛ.465337.110–07	3	2	3	IP44	wall	M–1, M–2
CP2-3.3-TM	ЦИУЛ.465337.110–08	3	2	3	IP44	bracket	M–1, M–2
CP2-6.3-PM	ЦИУЛ.465337.110–03	6	2	3	IP44	panel	M–1, M–2
CP2-6.3-WM	ЦИУЛ.465337.110–04	6	2	3	IP44	wall	M–1, M–2
CP2-6.3-TM	ЦИУЛ.465337.110–05	6	2	3	IP44	bracket	M–1, M–2
CP2-6.6-PM	ЦИУЛ.465337.110	6	2	6	IP44	panel	M–1, M–2
CP2-6.6-WM	ЦИУЛ.465337.110–01	6	2	6	IP44	wall	M–1, M–2
CP2-6.6-TM	ЦИУЛ.465337.110–02	6	2	6	IP44	bracket	M–1, M–2
CPW2-3.3	ЦИУЛ.465337.111–02	3	2	3	IP56	wall	M–3 M–3–10
CPW2-6.3	ЦИУЛ.465337.111–01	6	2	3	IP56	wall	M–3 M–3–10
CPW2-6.6	ЦИУЛ.465337.111	6	2	6	IP56	wall	M–3 M–3–10

MAIN SUBSTATIONS

For two-way communication in loudspeaker network, telephone communication (at option), broadcasting to zones (at option) alarm signaling (at option).

Model	Code	Loudspeaker lines, pcs	PBX connection	Zones/alarms	Built-in loudspeaker	Headset, telephone microphone	External loudspeaker	External Alarm unit	Wing substation	IP rating	Mounting
SP-18-WM	ЦИУЛ.468367.106	18	+	–	+	M–1, M–2	+	+	+	IP44	wall
SP-18-TM	ЦИУЛ.468367.107	18	+	–	+	M–1, M–2	+	+	+	IP44	bracket
SP-18-PM	ЦИУЛ.468367.105	18	+	–	+	M–1, M–2	+	+	+	IP44	panel
SP-18.12-WM	ЦИУЛ.468367.106–01	12	+	–	+	M–1, M–2	+	+	+	IP44	wall
SP-18.12-TM	ЦИУЛ.468367.107–01	12	+	–	+	M–1, M–2	+	+	+	IP44	bracket
SP-18.12-PM	ЦИУЛ.468367.105–01	12	+	–	+	M–1, M–2	+	+	+	IP44	panel
SP-18.6-WM	ЦИУЛ.468367.106–02	6	–	–	+	M–1, M–2	+	+	+	IP44	wall
SP-18.6-TM	ЦИУЛ.468367.107–02	6	–	–	+	M–1, M–2	+	+	+	IP44	bracket
SP-18.6-PM	ЦИУЛ.468367.105–02	6	–	–	+	M–1, M–2	+	+	+	IP44	panel
SP-18W	ЦИУЛ.468367.108	18	+	–	+	M–3, M–3–10, HS–4C(AC), HS–6C(AC), TH–4M, TH–4S	+	+	+	IP56	wall
SP-18.12W	ЦИУЛ.468367.108–01	12	+	–	+	M–3, M–3–10, HS–4C(AC), HS–6C(AC), TH–4M, TH–4S	+	+	+	IP56	wall
SP-18.6W	ЦИУЛ.468367.108–02	6	–	–	+	M–3, M–3–10, HS–4C(AC), HS–6C(AC), TH–4M, TH–4S	+	+	+	IP56	wall
SP-36-WM	ЦИУЛ.468367.102	36	+	–	+	M–1, M–2	+	+	+	IP44	wall
SP-36-TM	ЦИУЛ.468367.103	36	+	–	+	M–1, M–2	+	+	+	IP44	bracket
SP-36-PM	ЦИУЛ.468367.101	36	+	–	+	M–1, M–2	+	+	+	IP44	panel
SP-36.30-WM	ЦИУЛ.468367.102-02	30	+	–	+	M–1, M–2	+	+	+	IP44	wall
SP-36.30-TM	ЦИУЛ.468367.103-02	30	+	–	+	M–1, M–2	+	+	+	IP44	bracket
SP-36.30-PM	ЦИУЛ.468367.101-02	30	+	–	+	M–1, M–2	+	+	+	IP44	panel
SP-36.24-WM	ЦИУЛ.468367.102-01	24	+	–	+	M–1, M–2	+	+	+	IP44	wall
SP-36.24-TM	ЦИУЛ.468367.103-01	24	+	–	+	M–1, M–2	+	+	+	IP44	bracket
SP-36.24-PM	ЦИУЛ.468367.101-01	24	+	–	+	M–1, M–2	+	+	+	IP44	panel
SP-36W	ЦИУЛ.468367.104	36	+	–	+	M–3, M–3–10, HS–4C(AC), HS–6C(AC), TH–4M, TH–4S	+	+	+	IP56	wall
SP-36.30W	ЦИУЛ.468367.104-02	30	+	–	+	M–3, M–3–10, HS–4C(AC), HS–6C(AC), TH–4M, TH–4S	+	+	+	IP56	wall
SP-36.24W	ЦИУЛ.468367.104-01	24	+	–	+	M–3, M–3–10, HS–4C(AC), HS–6C(AC), TH–4M, TH–4S	+	+	+	IP56	wall

Model	Code	Loudspeaker lines, pcs	PBX connection	Zones/alarms	Built-in loudspeaker	Headset, telephone microphone	External loudspeaker	External Alarm unit	Wing substation	IP rating	Mounting
MS-18.12.6-WM	ЦИУЛ.468367.106–03	12	+	6/–	+	M–1, M–2	+	+	+	IP44	wall
MS-18.12.6-TM	ЦИУЛ.468367.107–03	12	+	6/–	+	M–1, M–2	+	+	+	IP44	bracket
MS-18.12.6-PM	ЦИУЛ.468367.105–03	12	+	6/–	+	M–1, M–2	+	+	+	IP44	panel
MS-18.12.3-WM	ЦИУЛ.468367.106–04	12	+	3/–	+	M–1, M–2	+	+	+	IP44	wall
MS-18.12.3-TM	ЦИУЛ.468367.107–04	12	+	3/–	+	M–1, M–2	+	+	+	IP44	bracket
MS-18.12.3-PM	ЦИУЛ.468367.105–04	12	+	3/–	+	M–1, M–2	+	+	+	IP44	panel
MS-18.6.3-WM	ЦИУЛ.468367.106–05	6	–	3/–	+	M–1, M–2	+	+	+	IP44	wall
MS-18.6.3-TM	ЦИУЛ.468367.107–05	6	–	3/–	+	M–1, M–2	+	+	+	IP44	bracket
MS-18.6.3-PM	ЦИУЛ.468367.105–05	6	–	3/–	+	M–1, M–2	+	+	+	IP44	panel
MS-18A.12.6.3-WM	ЦИУЛ.468367.110	12	+	6/3	+	M–1, M–2	+	+	+	IP44	wall
MS-18A.12.6.3-TM	ЦИУЛ.468367.111	12	+	6/3	+	M–1, M–2	+	+	+	IP44	bracket
MS-18A.12.6.3-PM	ЦИУЛ.468367.109	12	+	6/3	+	M–1, M–2	+	+	+	IP44	panel
MS-18A.12.3.3-WM	ЦИУЛ.468367.110–01	12	+	3/3	+	M–1, M–2	+	+	+	IP44	wall
MS-18A.12.3.3-TM	ЦИУЛ.468367.111–01	12	+	3/3	+	M–1, M–2	+	+	+	IP44	bracket
MS-18A.12.3.3-PM	ЦИУЛ.468367.109–01	12	+	3/3	+	M–1, M–2	+	+	+	IP44	panel
MS-18A.6.3.3-WM	ЦИУЛ.468367.110–02	6	–	3/3	+	M–1, M–2	+	+	+	IP44	wall
MS-18A.6.3.3-TM	ЦИУЛ.468367.111–02	6	–	3/3	+	M–1, M–2	+	+	+	IP44	bracket
MS-18A.6.3.3-PM	ЦИУЛ.468367.109–02	6	–	3/3	+	M–1, M–2	+	+	+	IP44	panel
MS-36.30.6-WM	ЦИУЛ.468367.113	30	+	6/–	+	M–1, M–2	+	+	+	IP44	wall
MS-36.30.6-TM	ЦИУЛ.468367.114	30	+	6/–	+	M–1, M–2	+	+	+	IP44	bracket
MS-36.30.6-PM	ЦИУЛ.468367.112	30	+	6/–	+	M–1, M–2	+	+	+	IP44	panel
MS-36A.30.6.3-WM	ЦИУЛ.468367.116	30	+	6/3	+	M–1, M–2	+	+	+	IP44	wall
MS-36A.30.6.3-TM	ЦИУЛ.468367.117	30	+	6/3	+	M–1, M–2	+	+	+	IP44	bracket
MS-36A.30.6.3-PM	ЦИУЛ.468367.115	30	+	6/3	+	M–1, M–2	+	+	+	IP44	panel

SP-18

SP-18W

SP-36

SP-36W

INTERCOM UNIT EXPLOSION PROOF IUEP-1 (EX)

To ensure public address communication and/or emergency alarm notifications.

Installed in hazardous areas at industrial.

and infrastructure facilities, oil and gas production platforms, vessels and ships of all classes, nuclear power facilities.

The unit can be not explosion proof.

Technical specifications of IUEP-1

Specifications	Value
Explosion-proof marking according to GOST 31610.0-2014	«1Ex eb ib mb IIC T6 Gb» «Ex tb IIIC T85 ºC Db»
Frequency spectrum band of the sound signal transmission path, Hz	300-6800
Rated supply voltage, V	48
Rated power consumption in standby / under max. load, W	10/25
Supply voltage range of external loudspeaker and signaling unit (additional pair), V	19...72
Rated power of external loudspeaker if additional power is available, W	25
Rated power of external loudspeaker if additional power is not available, W	15
Max. current of external signaling unit, mA	500
Max. distance from the central unit, km	1.6
IP rating (according to GOST 14254-2015)	IP56
Operating temperature range, ºC	– 40 ... +55
Limiting temperature range, ºC	– 50 ... +70
Communication interface	ISDN
Max. number of modules, pcs	3
Available types of call modules	- dial - bidirectional swing-type module
Max. number of direct call keys	30
External headset/telephone set/PTT	yes
Rated power of built-in loudspeaker, W	5
Built-in microphone	yes
Colour	orange (RAL2004)
Casing material	aluminum
Dimensions, mm	125×500×202
Weight, kg	11.54

Code	Bidirectional module, pcs	Dial	Telephone set
ЦИУЛ.465235.125	0	no	no
ЦИУЛ.465235.125-001	1	no	no
ЦИУЛ.465235.125-002	2	no	no
ЦИУЛ.465235.125-003	3	no	no
ЦИУЛ.465235.125-004	0	yes	no
ЦИУЛ.465235.125-005	1	yes	no
ЦИУЛ.465235.125-006	2	yes	no
ЦИУЛ.465235.125-007	0	no	yes
ЦИУЛ.465235.125-008	1	no	yes
ЦИУЛ.465235.125-009	2	no	yes
ЦИУЛ.465235.125-010	0	yes	yes
ЦИУЛ.465235.125-011	1	yes	yes

TELEPHONES

Name	Code	LCD	Loudspeaker communication	Volume control	Headset	Loudspeaker
Analog telephone						
PT-1A	ЦИУЛ.465484.103	–	–	+	–	–
PT-2A	ЦИУЛ.465484.104	+	+	+	–	–
PT-3A	ЦИУЛ.465484.105	–	–	+	–	–
Analog waterproof telephone						
PT-2AW	ЦИУЛ.465484.102	–	–	–	–	–
PT-CMAW-PM	ЦИУЛ.465484.101	–	+	+	HS–4, HS –6	LS–1, LS –2, LS –3/10, LS –3/15, LS –5, LS –6, LS –7, LS –8/10, LS –13/10, LS –13/10B
PT-CMAW-WM	ЦИУЛ.465484.101–01	–	+	+	HS –4, HS –6	LS –1, LS –2, LS –3/10, LS –3/15, LS –5, LS –6, LS –7, LS –8/10, LS –13/10, LS –13/10B
Analog explosion proof telephone						
KNEx1 (Ex)	ЦИУЛ.465484.107	+	–	–	–	–
ExResistTel	ЦИУЛ.465484.119	+	+	+	FHF11286104	–
JREX106	ЦИУЛ.465484.121	+	+	+	–	–
JREX106–B	ЦИУЛ.465484.121–01	+	+	+	AG HD–01	–
JREX106–H	ЦИУЛ.465484.121–02	+	+	+	AG HD–01	complete
JREX106–HB	ЦИУЛ.465484.121–03	+	+	+	AG HD–01	complete
Digital telephone						
PT-2IP	ЦИУЛ.465484.109	+	+	+	–	–
PT-3CIP	ЦИУЛ.465484.110	–	–	+	–	–
PT-VC	ЦИУЛ.465484.111	+	+	+	–	–
Digital waterproof telephone						
PT-3CMIPW-PM	ЦИУЛ.465484.113	–	+	+	HS –4, HS –6	LS –1, LS –2, LS –3/10, LS –3/15, LS –5, LS –6, LS –7, LS –8/10, LS –13/10, LS –13/10B
PT-3CMIPW-WM	ЦИУЛ.465484.113–01	–	+	+	HS –4, HS –6	LS –1, LS –2, LS –3/10, LS –3/15, LS –5, LS –6, LS –7, LS –8/10, LS –13/10, LS –13/10B
PT-2IPW	ЦИУЛ.465484.112	–	–	–	–	–
Digital explosion proof telephone						
Auteldac 6 VoIP	ЦИУЛ.465484.118	–	–	–	FHF11286104	–
ExResistTel IP2	ЦИУЛ.465484.119	+	+	+	FHF11286104	–
Ferntel	ЦИУЛ.465484.120	+	–	–	FHF11286104	–
JREX106-SIP	ЦИУЛ.465484.122	+	+	+	–	–
JREX106-B-SIP	ЦИУЛ.465484.122-01	+	+	+	AG HD–01	–
JREX106-H-SIP	ЦИУЛ.465484.122-02	+	+	+	AG HD–01	complete
JREX106-HB-SIP	ЦИУЛ.465484.122-03	+	+	+	AG HD–01	complete
Fax						
PT-FAX	ЦИУЛ.468484.106	+	+	+	–	–

Name	External signaling unit	Magnet holder	Programming buttons, pcs	IP	Mounting	Notes
Analog telephone						
PT-1A	–	+	–	IP20	Desk-top, wall	–
PT-2A	–	+	10	IP20	Desk-top, wall	–
PT-3A	–	+	–	IP20	Desk-top, wall	compact
Analog waterproof telephone						
PT-2AW	–	–	–	IP56	wall	–
PT-CMAW-PM	AL, A, L, FL, RL	+	–	IP56	panel	compact
PT-CMAW-WM	AL, A, L, FL, RL	+	–	IP56	wall	compact
Analog explosion proof telephone						
KNEx1 (Ex)	ORBITA MK	–	5	IP66	wall	–
ExResistTel	ORBITA MK	–	5	IP66	wall	–
JREX106	–	–	3	IP66	wall	w/horn, beacon and junction box
JREX106–B	complete	–	3	IP66	wall	horn, beacon and junction box
JREX106–H	–	–	3	IP66	wall	horn and junction box
JREX106–HB	complete	–	3	IP66	wall	horn, beacon and junction box
Digital telephone						
PT-2IP	–	+	3	IP20	Desk-top, wall	connection to network via one or two (independent) digital lines
PT-3CIP	–	+	–	IP20	wall	compact
PT–VC	–	+	–	IP20	wall	Touch LCD 4,3»
Digital waterproof telephone						
T-3CMIPW-PM	AL, A, L, FL, RL	+	–	IP56	panel	compact
PT-3CMIPW-WM	AL, A, L, FL, RL	+	–	IP56	wall	compact
PT-2IPW	–	–	–	IP56	wall	–
Digital explosion proof telephone						
Auteldac 6 VoIP	ORBITA MK	–	3	IP66	wall	–
ExResistTel IP2	ORBITA MK	–	–	IP66	wall	–
Ferntel	ORBITA MK	–	–	IP66	wall	–
JREX106-SIP	–	–	3	IP66	wall	w/horn, beacon and junction box
JREX106-B-SIP	complete	–	3	IP66	wall	beacon and junction box
JREX106-H-SIP	–	–	3	IP66	wall	Horn and junction box
JREX106-HB-SIP	complete	–	3	IP66	wall	horn, beacon and junction box
Fax						
PT–FAT	–	–	6	IP20	Desk-top	Fax communication

Analog telephone

PT-1A

PT-2A

PT-3A

Analog waterproof telephone

PT-2AW

PT-CMAW-PM
PT-CMAW-WM

Analog explosion proof telephone

KNEx1 (Ex)/ ExResistTel

JREX106

JREX106–B, JREX106–H,
JREX106–HB

Digital telephone

PT-2IP

PT–VC

PT-3CIP

Digital waterproof telephone

PT-3CMIPW-WM
PT-3CMIPW-PM

PT-2IPW

Digital explosion proof telephone

Auteldac 6 VoIP

ExResistTel IP2

Ferntel

Fax

PT–FAT

RADIO TELEPHONE SETS

	Set name	Components		Features
		Name and type	Code	
	PT-DC RT set	PT-DC, Radio terminal	ЦИУЛ.464415.101	LCD, loudspeaker communication, telephone book for 100 numbers
		BS-DC, Base station combined with charger	ЦИУЛ.464415.102	Up to 6 connected radio telephones
		PS-DC, Power supply unit	ЦИУЛ.436531.101	–
		CH-DC, telephone holder with a charger	ЦИУЛ.436431.101	–
	PT-ADCW RT set	PT-ADCW, Radio terminal	ЦИУЛ.464415.103	LCD, loudspeaker communication, telephone book for 120 numbers, headset
		BS-ADCW, Base station combined with charger	ЦИУЛ.464415.104	Up to 4 connected radio telephones
		PS-ADCW, Power supply unit	ЦИУЛ.436531.102	–
		CH-ADCW, Base station combined with charger	ЦИУЛ.436431.102	–
	PT-NRTU RT set	DH8-ABAB, Radio terminal	ЦИУЛ.464415.113	LCD, telephone book for unlimited numbers, headset explosion proof
		PT-NRTU, Radio terminal	ЦИУЛ.464415.106	LCD, loudspeaker communication, telephone book for unlimited numbers, headset
		BS-NRTU, Base station	ЦИУЛ.464415.107	Built-in antennas to connect through BSS –16
			ЦИУЛ.464415.107–01	External antennas and cable length to antennas 2m to connect through BSS –16
			ЦИУЛ.464415.107–02	External antennas and cable length to antennas 10m to connect through BSS –16
			ЦИУЛ.464415.107–03	Built-in antennas to connect without BSS –16
			ЦИУЛ.464415.107–04	External antennas and cable length to antennas 2m to connect without BSS –16
			ЦИУЛ.464415.107–05	External antennas and cable length to antennas 10m to connect without BSS –16
			ЦИУЛ.464415.107–06	explosion proof, to connect through BSS –16
			ЦИУЛ.464415.107–07	explosion proof, to connect without BSS–16
		PS-DRTU, Power supply unit	ЦИУЛ.436531.103	To power CH-NRTU
		CH-NRTU, charger for DH8–ABAB and PT-NRTU	ЦИУЛ.436431.103	for 1 radio terminal DH8–ABAB or PT-NRTU
		CH6-NRTU, charger for DH8–ABAB and PT-NRTU	ЦИУЛ.436434.101	for 6 radio terminals DH8–ABAB or PT-NRTU

Code	Supply voltage	Power consumption	IP rating	Mounting	Operation time	Communication range	Connection type to internal PBX
ЦИУЛ.464415.101	–	–	IP20	portable	Waiting mode 240 h Talk mode 5 h	50 – 200 m	Digital line (PoE)
ЦИУЛ.464415.102	~220 V, 50 Hz/⎓ 24 V – main.; ⎓ 24 V – standby	Max. 5 W	IP20	wall			
ЦИУЛ.436531.101	~220 V, 50 Hz	Max. 5 W	IP20	wall			
ЦИУЛ.436431.101	~100–240 V, 50–60 Hz Through adapter	Max. 5 W	IP20	Desk-top			
ЦИУЛ.464415.103	–	–	IP56	portable	Waiting mode 300 h Talk mode 1 4 h	50 – 200 m	Analog line
ЦИУЛ.464415.104	~220 V, 50 Hz/⎓ 24 V – main.; ⎓ 24 V – standby	Max. 4.2 W	IP56	wall			
ЦИУЛ.436531.102	~220 V, 50 Hz	Max. 4.2 W	IP20	wall			
ЦИУЛ.436431.102	~100–240 V, 50–60 Hz Through adapter	Max. 4.2 W	IP20	Desk-top			
ЦИУЛ.464415.113	–	–	IP67	portable	Waiting mode 120 h Talk mode 18 h	20–30 m indoors 300 m outdoors	Digital line (PoE)
ЦИУЛ.464415.106	–	–	IP56	portable			
ЦИУЛ.464415.107	–	2 W	IP22	wall			
ЦИУЛ.464415.107–01	–	2 W	IP22	wall			
ЦИУЛ.464415.107–02	–	2 W	IP22	wall			
ЦИУЛ.464415.107–03	–	2 W	IP22	wall			
ЦИУЛ.464415.107–04	–	2 W	IP22	wall			
ЦИУЛ.464415.107–05	–	2 W	IP22	wall			
ЦИУЛ.464415.107–06	–	2 W	IP66	wall			
ЦИУЛ.464415.107–07	–	2 W	IP66	wall			
ЦИУЛ.436531.103	~220 V, 50 Hz	9 W	IP22	wall			
ЦИУЛ.436431.103	⎓ 5 V	Max.5 W	IP20	Desk-top			
ЦИУЛ.436434.101	~220 V, 50 Hz	Max.30 W	IP20	Desk-top			

Audio recorder ITS-REC

Recording and storage of telephone conversations from a single device in WAV format for analog subscriber lines.

- Identification of incoming and outgoing subscriber numbers
- Recording of the date, start time, and duration of the conversation
- Missed calls registration
- Event log in case of malfunctions
- Warning sound alarm:
  – «start of recording»,
  – «low battery»,
  – «memory full»,
  – «memory card error»
- Installation in a subscriber line break
- Listening to recorded data from a memory card using a computer

Model	Code	Supply voltage	Media	Weight	Operating temperature	IP rating	Mounting
ITS-REC	ЦИУЛ.467669.101	From subscriber line or battery AAA	SDHC, 4 GB	0.53 kg	–15...+55 °C	IP22	wall

BATTERY LESS TELEPHONE SYSTEM
BTS–1006 ЦИУЛ.465224.001

INTENDED USE

Provides intra-facility telephone communication
in normal mode (with or without power supply)
and in emergency situations caused by malfunction
or power failure of onboard communication systems

Approved by
The Russian Maritime Register of Shipping
and Russian Classification Society

FEATURES

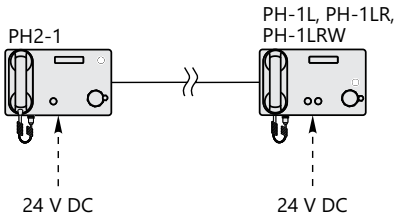
- Pair, broadcast, selective and conference communication (max. 24 stations)
- The system can be used as public address if connected to power mains
- Communication and addressed calls from any system unit
- Communication:
  – In aerosol personal respiratory protection equipment (using external communication devices with throat microphones)
  – In noisy environment (up to 130 dB) — using personal hearing protection equipment (headset or intercom helmet)
- LEDs for power, call and inductor state of health
- Light and sound signals of incoming calls
- Headset and external in-call light signaling units can be connected
- Automatic switchover to standby power in of power supply failure
- Different configurations of telephone networks: subscribers are connected by dedicated or multiple channels
- Different types of mounting: on open deck and inside (incl. noisy areas), hinged, desk-top and panel mounting.

TECHNICAL SPECIFICATIONS

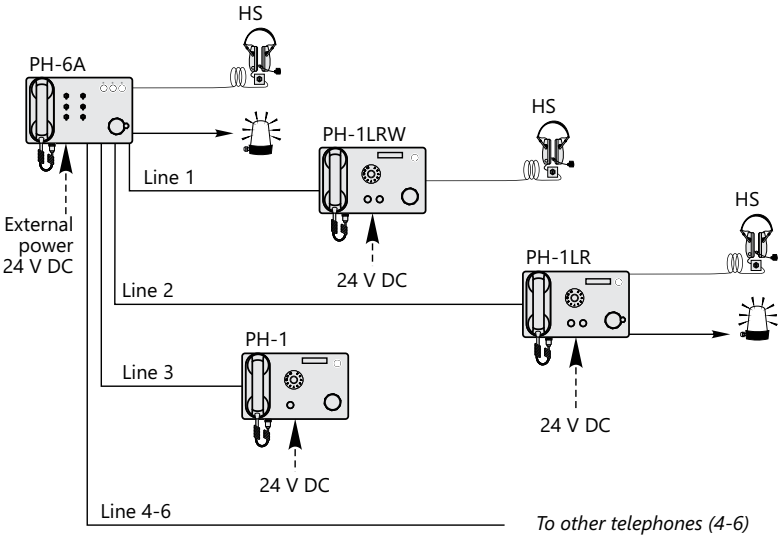
System model		ЦИУЛ.465224.001	ЦИУЛ.465224.001–01
Subscribers		2 - 24 (expandable)	2 - 25 (expandable)
ypes of units		Parallel connection devices: 1 line – PH-1LA, PH-1L, PH-1LR, PH-1RW 12-line - PH-12L, PH-12LR, PH-12LWP, PH-12LWP 24-line - PH-24L, PH-24LR, PH-24RW, PH-24LWP Switching units (with isolated lines): 6-line – PH-6CA 12 line – PH-12CA 20 line – PH-20CA	Switching units (with isolated lines): 1 line – PH2-1-W, PH2-1-C 5 line – PH2-5-W, PH2-5-C, PH2-5-P 10 line – PH2-10-W, PH2-10-C 15 line – PH2-15-W, PH2-15-C 20 line – H2-20-W, PH2-20-C 25 line – PH2-25-W, PH2-25-C
Supply voltage	external	24 V DC / 220 V 50 Hz using PS-103	
	self-contained	From generator handle rotation	From generator handle rotation
Communication time (self-contained power supply)		For pair communication - min 10 min. (after 1 rotation cycle of generator with the rate 3 rev/s within 3-5 s)	
Communication line length		Max. 2000 m	
Features		2 tones of call signal, identification of incoming number (for devices with LCD) Select of call mode (with or without camp-on) names of users on the front panel above the switches (for PH-6CA, PH-12CA, PH-20CA)	Two-wire and three-wire communication line, with or without power supply, names of users on the front panel above the switches
Operating temperature		–15...+55 °C – installation inside –40...+55 °C – installation on open decks	

STRUCTURAL DIAGRAMS FOR ЦИУЛ.465224.001

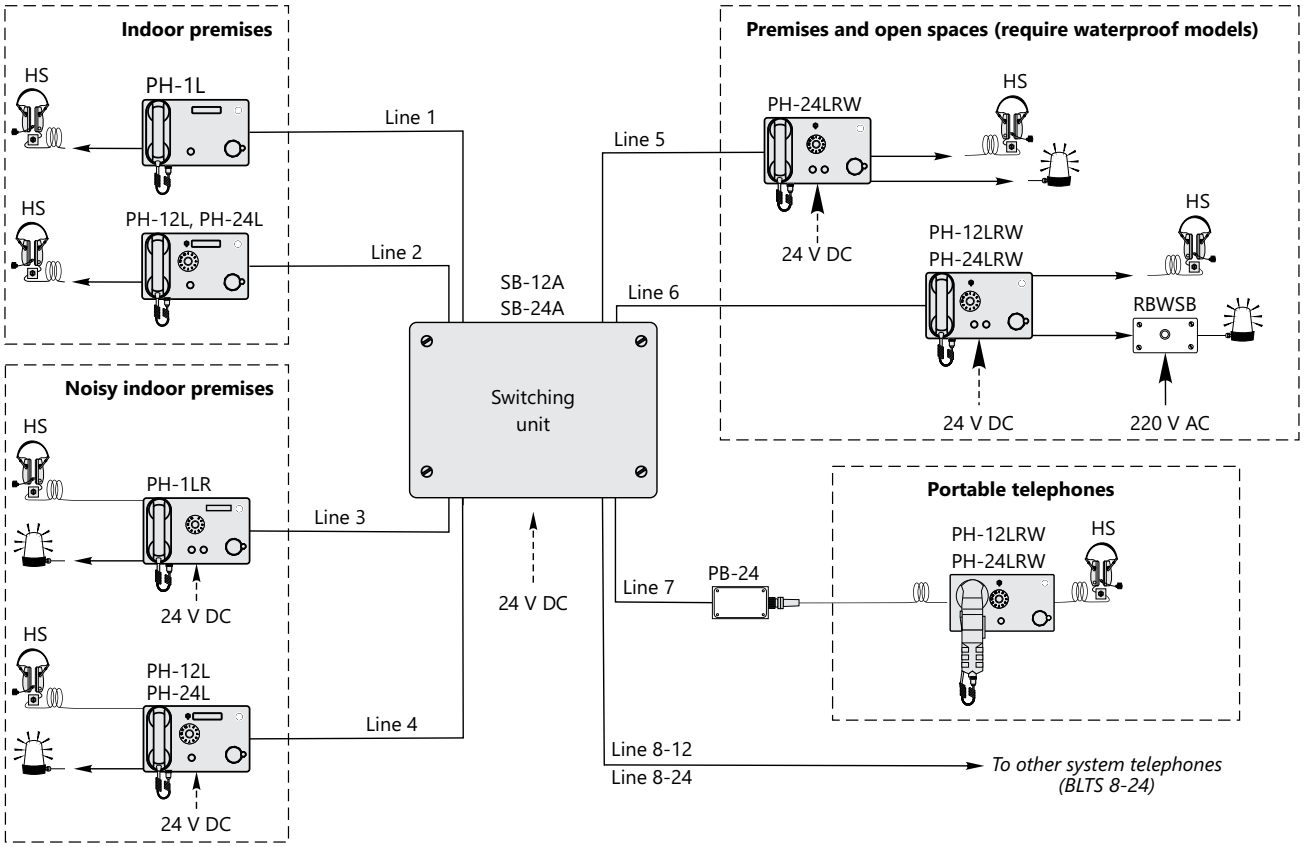
Single-path subscriber network (paired connection)



Subscriber network with communication node path (based on switching unit)



Subscriber network with multi-node paths PH-12LR (based on switching unit)



TELEPHONES

PH-1LA

PH-24L

PH-24LR

PH-24LRW

PH-24LWP

PH-6CA

PH-12CA

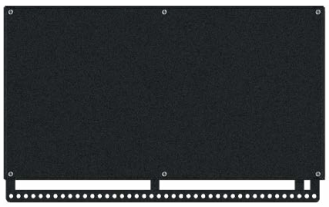
PH-20CA

Name	Code	Lines	Connection			IP rating	Notes
			Headset/ intercom helmet	Additional call signaling units	Relay unit		
PH-1LA	ЦИУЛ.465482.102–02	1	+	–	+	IP44	with amplifier
PH-1L	ЦИУЛ.465482.102–01	1	+	–	–	IP44	–
PH-1LR	ЦИУЛ.465482.102	1	+	+	+	IP44	–
PH-1LRW	ЦИУЛ.465482.103	1	+	+	+	IP56	waterproof
PH-1LWP	ЦИУЛ.465224.103–02	1	+	–	–	IP56	portable, cable 5 m, waterproof
PH-12L	ЦИУЛ.465214.102	12	+	–	–	IP44	–
PH-12LR	ЦИУЛ.465214.102–01	12	+	+	+	IP44	–
PH-12LRW	ЦИУЛ.465214.103	12	+	+	+	IP56	waterproof
PH-12LWP	ЦИУЛ.465224.103	12	+	–	–	IP56	portable, cable 5 m, waterproof
PH-24L	ЦИУЛ.465214.102–02	24	+	–	–	IP44	–
PH-24LR	ЦИУЛ.465214.102–03	24	+	+	+	IP44	–
PH-24LRW	ЦИУЛ.465214.103–03	24	+	+	+	IP56	waterproof
PH-24LWP	ЦИУЛ.465224.103–01	24	+	–	–	IP56	portable, cable 5 m, waterproof
PH-6CA	ЦИУЛ.465214.105–03	6	+	+	+	IP44	with amplifier
PH-12CA	ЦИУЛ.465214.105–04	12	+	+	+	IP44	with amplifier
PH-20CA	ЦИУЛ.465214.105–05	20	+	+	+	IP44	with amplifier

Notes
Operating temperature of telephones depends on model,
for IP rating IP44: –15...+55 °C
for IP rating IP56: –40...+55 °C

SWITCHING UNITS

Built-in power supply unit and amplifier to connect telephones.



Model	Inputs	Connected devices	Input/output voltage	IP rating	Operating temperature	Mounting
SB-12A	1	12	⎓ 24 V	IP22	–15...+55 °C	wall
SB-24A	1	24	⎓ 24 V	IP22	–15...+55 °C	wall

CASINGS

To install telephones on the vertical bulkhead or horizontal surface.

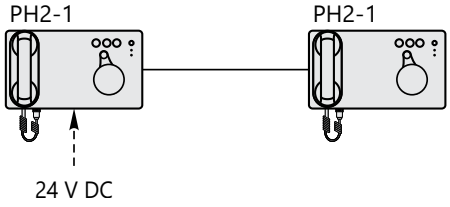
Model	Telephones to install	Material	IP rating	Operating temperature	Mounting
MBOX	PH-1LA, PH–xx, PH–xxLR, PH–6CA	steel	IP44	–15...+55 °C	wall
MBOX2	PH-6CA	steel	IP44	–15...+55 °C	wall
MBOX3	PH-20CA	steel	IP44	–15...+55 °C	wall
WBOX	PH-1LA, PH–xx, PH–xxLR, PH–6CA	wood	IP22	–15...+55 °C	wall / desk-top
WBOX2	PH-6CA	wood	IP22	–15...+55 °C	wall / desk-top
WBOX3	PH-20CA	wood	IP22	–15...+55 °C	wall / desk-top

Metal casing MBOX, MBOX2, MBOX3

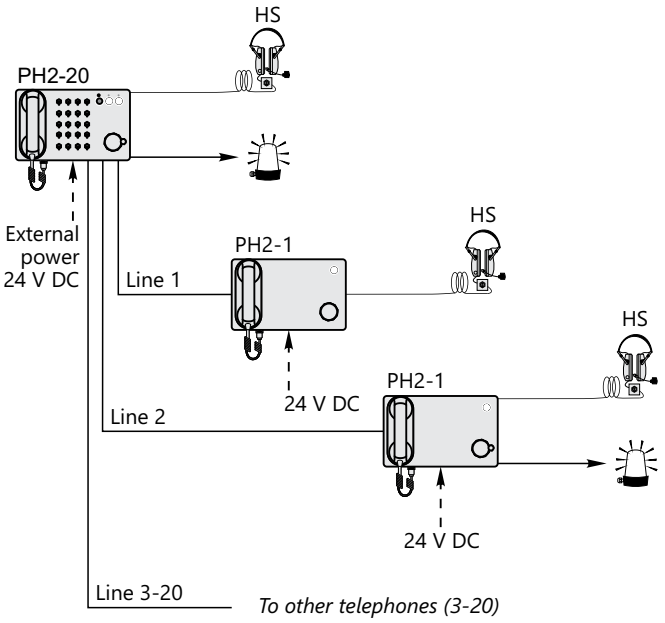
Wooden case WBOX WBOX2 WBOX3

STRUCTURAL DIAGRAMS FOR ЦИУЛ.465224.001–01

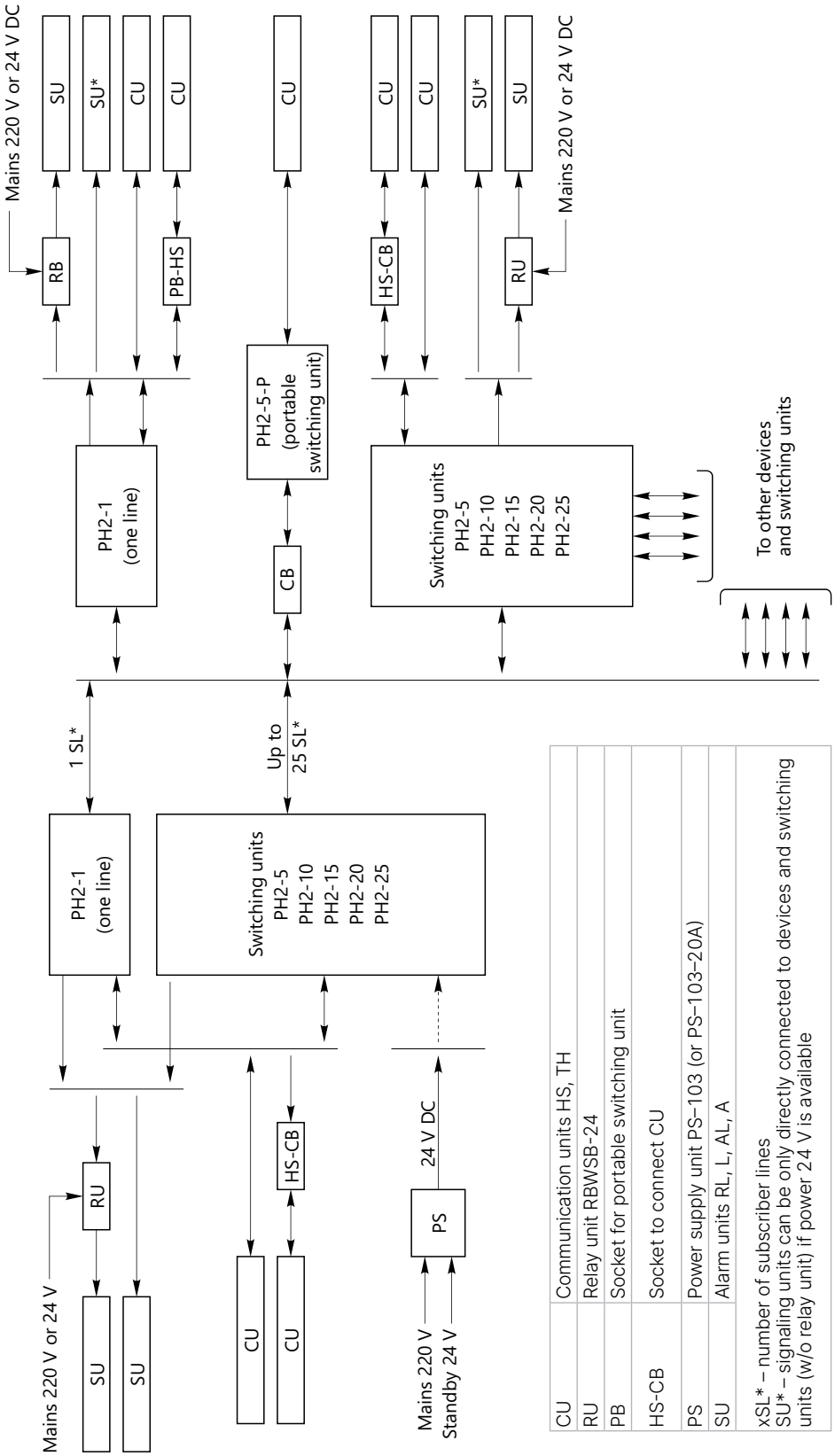
Single-path subscriber network (paired connection)



Subscriber network with communication node path (based on switching unit)



STRUCTURAL DIAGRAM



CU	Communication units HS, TH
RU	Relay unit RBWSB-24
PB	Socket for portable switching unit
HS-CB	Socket to connect CU
PS	Power supply unit PS–103 (or PS–103–20A)
SU	Alarm units RL, L, AL, A

xSL* – number of subscriber lines
SU* – signaling units can be only directly connected to devices and switching units (w/o relay unit) if power 24 V is available

TELEPHONES

PH2-1-W / PH2-1-C

PH2-5-W, PH2-5-C
PH2-10-W, PH2-10-C

PH2-5-P

PH2-15-W, PH2-15-C, PH2-20-W,
PH2-20-C, PH2-25-W, PH2-25-C

Telephone	Code	Lines	Connection			IP rating	Notes
			headset/ intercom helmet	Additional call signaling units	Relay unit		
PH2-1-W	ЦИУЛ.465482.101	1	+	+	+	IP56	wall
PH2-1-C	ЦИУЛ.465482.101–01	1	+	+	+	IP56	panel
PH2-5-W	ЦИУЛ.465214.101	5	+	+	+	IP56	wall
PH2-5-C	ЦИУЛ.465214.101–05	5	+	+	+	IP56	panel
PH2-5-P	ЦИУЛ.465224.105	5	+	–	–	IP56	portable, cable 5 m, quick disconnect connector
PH2-10-W	ЦИУЛ.465214.101–01	10	+	+	+	IP56	wall
PH2-10-C	ЦИУЛ.465214.101–06	10	+	+	+	IP56	panel
PH2-15-W	ЦИУЛ.465214.101–02	15	+	+	+	IP56	wall
PH2-15-C	ЦИУЛ.465214.101–07	15	+	+	+	IP56	panel
PH2-20-W	ЦИУЛ.465214.101–03	20	+	+	+	IP56	wall
PH2-20-C	ЦИУЛ.465214.101–08	20	+	+	+	IP56	panel
PH2-25-W	ЦИУЛ.465214.101–04	25	+	+	+	IP56	wall
PH2-25-C	ЦИУЛ.465214.101–09	25	+	+	+	IP56	panel

For information on peripheral equipment connected to BTS–1006 and protective enclosures for open deck — see **“Peripheral equipment for Systems ITS–1010, BTS–1006” p. 43**)

PERIPHERAL EQUIPMENT FOR SYSTEMS ITS–1010, BTS–1006

Peripheral equipment includes various signaling units and communication devices such as microphones, headsets, loudspeakers, etc.

Peripheral equipment is connected to various user devices directly or using various sockets and junction boxes.

MICROPHONES

Model	Type	Operating bandwidth	Sensitivity	Impedance	Cable length	IP rating	Operating temp.	Mounting	Connected to substation panels
M–1	electrete	100...20000 Hz	4.4 mV/Pa	680 Ohm	Flexible base with connector	IP44	–15...+55 °C	Into connector of Main substations, Talk-back stations and microphone sockets	SP-18, MS-18, MS-18A, MS-36, MS-36A, S2, S2-5, CP-CMIP, CP -6(3), CP2-6(3), CP-6.6(3.3), CP-2-6.6(3.3, 6.3)
M–2	dynamic	250...6000 Hz	1 mV/Pa	600 Ohm	1.5 m	IP44	–15...+55 °C	On a clip onto the panel, station, wall or desk-top	
M–3	dynamic	200...20000 Hz	5 mV/Pa	200 Ohm	3 m	IP56	–40...+55 °C	On a clip onto the panel, station, wall or desk-top	SP-18W, SP -36W, MS-3, CP-CMIP, MS-WM, CP-6W(3W), CP-6.6W(3.3W, 6.3W)
M-3 (Ex)	dynamic	200...20000 Hz	5 mV/Pa	200 Ohm	3 m	IP56	–40...+55 °C	On a clip onto the panel, station, wall or desk-top	PHS (Ex), IUEP-1 (EX)
M–3–10	dynamic	200...20000 Hz	5 mV/Pa	200 Ohm	10 m	IP56	–40...+55 °C	On a clip onto the panel, station, wall or desk-top	SP-18W, SP -36W, MS-3, CP-CMIP, MS-WM, CP-6W(3W), CP-6.6W(3.3W, 6.3W)
MD–97	dynamic	50...20000 Hz	1.6 mV/Pa	320 Ohm	Flexible base with connector	IP44	–15...+55 °C	desk-top standard holder	CP-6(3), CP 2-6(3), CP-6.6(3.3), CP-2-6.6(3.3, 6.3)

M–1

M–2

M–3, M–3–10

MD–97

TELEPHONE HANDSETS

	Model	Operating bandwidth	PTTs	Cable length	IP rating	Operating temperature	Mounting	Connected to main stations and substations
	H-HS1-WM	200...6000 Hz	call disconnection when releasing the tangent	3 m	IP56	–40...+55°C	Bracket, wall	PT-CMIP, PHS
	H-HS1-PM	200...6000 Hz	call disconnection when releasing the tangent	3 m	IP56	–40...+55°C	Bracket, panel	PT-CMIP, PHS
	H-HS4-WM	300...3400 Hz	microphone mute when releasing the tangent	1.2 m	IP56	–40...+55°C	Holder, wall	PT-CMIP, PHS
	H-HS4-PM	300...3400 Hz	microphone mute when releasing the tangent	1.2 m	IP56	–40...+55°C	Holder, panel	PT-CMIP, PHS

HEADSETS

Model	HS–3	S-3C	HS-3AC	HS-4	HS-4C	HS-4AC	HS-4	HS-4C	HS-5	HS-5C	HS-5AC	6HS-6	HS-5C	HS-6AC
Type	passive monophonic			passive monophonic			passive monophonic		passive monophonic			passive monophonic		
Operating bandwidth	150...7000 Hz			150...7000 Hz			150...7000 Hz		150...7000 Hz			150...7000 Hz		
close-talking sensitivity at frequency 1000 Hz	0.4...1.1 mV/Pa			0.4...1.1 mV/Pa			0.4...1.1 mV/Pa		0.4...1.1 mV/Pa			0.4...1.1 mV/Pa		
Impedance at frequency 1000 Hz	120 ± 20 Ohm			120 ± 20 Ohm			120 ± 20 Ohm		300 ± 20 Ohm			300 ± 20 Ohm		
Noise-reduction coefficient at frequency 150 Hz	Min. 10 dB			Min. 10 dB			Min. 10 dB		Min. 10 dB			Min. 10 dB		
Noise	Max. 115 dB			Max. 115 dB			Max. 115 dB		Max. 115 dB			Max. 115 dB		
Cable length	from headset to PTT – 0.8 m from PTT to connector – 3 m			from headset to PTT – 0.8 m from PTT to connector – 3 m			from headset to PTT – 0.8 m from PTT to connector – 3 m		from headset to PTT – 0.8 m from PTT to connector – 3 m			from headset to PTT – 0.8 m from PTT to connector – 3 m		
Features	Manual switch			Manual switch			Explosion proof		Manual switch, one-eared			Manual switch, one-eared		
Mounting	wall, standard bracket			wall, standard bracket			wall, standard bracket		wall, standard bracket			wall, standard bracket		
Connected to main stations and telephones	PH–1(LR, LRW), PH–12(LR, LRW), PH–24 (LR, LRW), PH2–1, PH2–5 (10,15,20,25)			SP-18W, SP-36W, S3, PT–CMIP, PTA, SDP, PT-CMAW, PT-3CMIPW			PHS (Ex), IUEP-1 (Ex)		PH–1(LR, LRW), PH–12(LR, LRW), PH–24 (LR, LRW), PH2–1, PH2–5 (10,15,20,25)			SP-18W, SP-36W, S3, PT–CMIP, PTA, SDP, PT-CMAW, PT-3CMIPW		
IP rating	IP56			IP56					IP56			IP56		
Operating temperature	–40...+55 °C			–40...+55 °C					–40...+55 °C			–40...+55 °C		

Model	Type of connection
HS–3	Direct on terminals, crimped cable ends
HS-3C	socket HS-CB, straight connector
HS-3AC	socket HS-CB, angle connector
HS–4	Direct on terminals, crimped cable ends
HS-4C	socket HS-CB, straight connector
HS-4AC	socket HS-CB, angle connector
HS-4 (Ex)	Direct on terminals, crimped cable ends
HS-4P (Ex)	Socket on the casing, connector

Model	Type of connection
HS–5	Direct on terminals, crimped cable ends
HS-5C	socket HS-CB, straight connector
HS-5AC	socket HS-CB, angle connector
HS –6	Direct on terminals, crimped cable ends
HS-6C	socket HS-CB, straight connector
HS-6AC	socket HS-CB, angle connector
MT53H79B	connector
FHF11286104	connector
AG HD–01	connector

INTERCOM HELMETS

				
Model	TH-4M-S, TH-4M-S-C, TH-4M-S-AC	TH-4M-W, TH-4M-W-C, TH-4M-W-AC	TH-4M-S, H-4M-S-C, TH-4M-S-AC	TH-4M-W, TH-4M-W-C, TH-4M-W-AC
Type	Microphone-telephone	Microphone-telephone	Throat-microphone, -telephone	Throat-microphone, -telephone
Operating bandwidth	150...7000 Hz	150...7000 Hz	300...3400 Hz	300...3400 Hz
Noise stability under max. acoustic noise 120 dB	min. 16 dB	min. 16 dB	min. 16 dB	min. 16 dB
Impedance at frequency 1000 Hz	Transmission path 60...100 Ohm Receive path 480...720 Ohm	Transmission path 60...100 Ohm Receive path 480...720 Ohm	Transmission path 60...100 Ohm Receive path 480...720 Ohm	Transmission path 60...100 Ohm Receive path 480...720 Ohm
Word intelligibility in noisy conditiona up to 130 dB	85.2%	85.2%	94%	94%
Noise	max. 130 dB	max. 130 dB	max. 130 dB	max. 130 dB
Cable length	from headset to PTT – 0.8 m from PTT to connector – 3 m	from headset to PTT – 0.8 m from PTT to connector – 3 m	from headset to PTT – 0.8 m from PTT to connector – 3 m	from headset to PTT – 0.8 m from PTT to connector – 3 m
Features	Manual switch, summer	Manual switch, winter	Manual switch, summer	Manual switch, winter
Mounting	Wall, standard bracket	Wall, standard bracket	Wall, standard bracket	Wall, standard bracket
Connected to main stations and telephones	PH–1(LR, LRW), PH–12(LR, LRW), PH–24 (LR, LRW), PH2–1, PH2–5 (10,15,20,25), SP-18W, SP-36W, S3, PT–CMIP, PTA, SDP	PH–1(LR, LRW), PH–12(LR, LRW), PH–24 (LR, LRW), PH2–1, PH2–5 (10,15,20,25), SP-18W, SP-36W, S3, PT–CMIP, PTA, SDP	PH–1(LR, LRW), PH–12(LR, LRW), PH–24 (LR, LRW), PH2–1, PH2–5 (10,15,20,25), SP-18W, SP-36W, S3, PT–CMIP, PTA, SDP	PH–1(LR, LRW), PH–12(LR, LRW), PH–24 (LR, LRW), PH2–1, PH2–5 (10,15,20,25), SP-18W, SP-36W, S3, PT–CMIP, PTA, SDP
IP rating	IP56	IP56	IP56	IP56
Operating temperature	–40...+55 ºC	–50...+55 ºC	–40...+55 ºC	–50...+55 ºC

Model	Type of connection
TH-4M-S	Direct on terminals, crimped cable ends
TH-4M-S-C	Socket HS-CB, straight connector
TH-4M-S-AC	Socket HS-CB, angle connector
TH-4M-W	Direct on terminals, crimped cable ends
TH-4M-W-C	Socket HS-CB, straight connector
TH-4M-W-AC	Socket HS-CB, angle connector

Model	Type of connection
TH-4M-S	Direct on terminals, crimped cable ends
TH-4M-S-C	Socket HS-CB, straight connector
TH-4M-S-AC	Socket HS-CB, angle connector
TH-4M-W	Direct on terminals, crimped cable ends
TH-4M-W-C	Socket HS-CB, straight connector
TH-4M-W-AC	Socket HS-CB, angle connector

LOUDSPEAKERS

Model	Power	Operating voltage	Bandwidth	Max. sound pressure	Sensitivity
LS –1	max. 6 W	30 V	140...20000 Hz	98 dB	90 dB/W
LS–1/100	6.0; 3.0; 1.5; 0.5 W	100 V	140...20000 Hz	98 dB	90 dB/W
LS–2	max. 6 W	30 V	125...15000 Hz	104 dB	96 dB/W
LS–2/100	6.0; 3.0; 1.5 W	100 V	125...15000 Hz	104 dB	96 dB/W
LS–3/10	10.0; 5.0; 2.5 W	30 V	400...9000 Hz	114 dB	104 dB/W
LS–3/15	15 W	30 V	330...8000 Hz	120 dB	108 dB/W
LS–3/100/10	10.0; 5.0; 2.5 W	100 V	400...9000 Hz	114 dB	104 dB/W
LS–3/100/15	15.0; 7.5; 3,8 W	100 V	300...9000 Hz	117 dB	105 dB/W
LS–3/100/20	20.0; 15.0; 7.5; 3.5; 2.0 W	100 V	310...8000 Hz	123 dB	110 dB/W
LS–3/100/30	30.0; 15.0; 7.5 W	100 V	300...10000 Hz	122 dB	107 dB/W
LS–5	max. 6 W	30 V	150...15000 Hz	98 dB	90 dB/W
LS–5/100	6.0; 3.0; 1.5; 0.5 W	100 V	150...15000 Hz	98 dB	90 dB/W
LS–5/100P	6.0; 3.0; 1.5; 0.5 W	100 V	150...15000 Hz	98 dB	90 dB/W
LS–6	max. 6 W	30 V	160...20000 Hz	97 dB	89 dB/W
LS–6/100	6.0; 3.0; 1.5; 0.5 W	100 V	160...20000 Hz	97 dB	89 dB/W
LS–7	max. 8 W	30 V	300...20000 Hz	110 dB	101 dB/W
LS–7/100	8.0; 4.0; 2.0; 1.5; 0.7; 0.4 W	100 V	300...20000 Hz	110 dB	101 dB/W
LS–8/10	10.0; 5.0; 2.5 W	30 V	300...5000 Hz	114 dB	104 dB/W
LS–8/25	25.0; 12.5; 6.0 W	30 V	250...5000 Hz	120 dB	106 dB/W
LS–8/100/10	10.0; 5.0; 2.5 W	100 V	300...5000 Hz	114 dB	104 dB/W
LS–8/100/25	25.0; 12.5; 6.0 W	100 V	250...5000 Hz	120 dB	106 dB/W
LS–8/100/50	50.0; 25.0; 12.5 W	100 V	250...5000 Hz	125 dB	108 dB/W
LS–9/100	50.0; 25.0; 12.5; 9.0; 4.5; 3.5 W	100 V	50...16000 Hz	125 dB	99 dB/W
LS–10/100	50.0; 27.0; 18.0; 15.0; 7.5; 3.5 W	100 V	90...20000 Hz	115 dB	98 dB/W
LS–12/100	6.0; 3.0; 1.5; 0.5 W	100 V	150...20000 Hz	96 dB	90 dB/W
LS–13/10	10.0; 5.0; 3.5; 2.5;1.5; 0.8 W	30 V	140...16000 Hz	102 dB	92 dB/W
LS–13/30	30.0; 15.0; 10.0; 7.5; 3.5; 2.0 W	30 V	110...20000 Hz	104 dB	89 dB/W
LS–13/100/10	10.0; 5.0; 3.5; 2.5; 1.5; 0.8 W	100 V	140...16000 Hz	102 dB	92 dB/W
LS–13/100/30	30.0; 15.0; 10.0; 7.5; 3.5; 2.0 W	100 V	110...20000 Hz	104 dB	89 dB/W
LS–13/10B	10.0; 5.0; 3.5; 2.5; 1.5; 0.8 W	30 V	110...16000 Hz	98 dB	89 dB/W
LS–13/30B	30.0; 15.0; 10.0; 7.5; 3.5; 2.0 W	30 V	100...20000 Hz	101 dB	88 dB/W
LS–13/100/10B	10.0; 5.0; 3.5; 2.5; 1.5; 0.8 W	100 V	110...16000 Hz	98 dB	89 dB/W
LS–13/100/30B	30.0; 15.0; 10.0; 7.5; 3.5; 2.0 W	100 V	100...20000 Hz	101 dB	88 dB/W
SDL	6.0; 3.0; 1.5 W	100 V	125...15000 Hz	104 dB	96 dB/W
SDL–4	6.0; 3.0; 1.5 W	100 V	125...15000 Hz	104 dB	96 dB/W
LF–1/100	100; 50 W	100 V	200...16000 Hz	132 dB	112 dB/W
DSP–15 (Ex)	25.0; 15.0; 6.5; 5.0; 2.5; 1.5 W	100 V	330...7000 Hz	123 dB	109 dB/W
GVR-Exd-10-Prometey	10 W	100 V	400...4500 Hz	105 dB	–
GVR-Exd-20-Prometey	20 W	100 V	400...4500 Hz	108 dB	–
GVR-Exd-30-Prometey	30 W	100 V	400...4500 Hz	110 dB	–

Model	Mounting	Material	IP rating	Operating temperature	Features
LS –1	built-in (ceiling)	plastic/metal	IP22	–15...+55 °C	
LS–1/100	built-in (ceiling)	plastic/metal	IP22	–15...+55 °C	
LS–2	wall	metal	IP22	–15...+55 °C	
LS–2/100	wall	metal	IP22	–15...+55 °C	
LS–3/10	wall (bracket)	plastic	IP56	–40...+55 °C	horn, with complete 3 m cable
LS–3/15	wall (bracket)	plastic	IP56	–40...+55 °C	horn, with complete 3 m cable
LS–3/100/10	wall (bracket)	plastic	IP56	–40...+55 °C	horn, with complete 3 m cable
LS–3/100/15	wall (bracket)	plastic	IP56	–40...+55 °C	horn, with complete 3 m cable
LS–3/100/20	wall (bracket)	plastic	IP56	–40...+55 °C	horn, with complete 3 m cable
LS–3/100/30	wall (bracket)	plastic	IP56	–40...+55 °C	horn, with complete 3 m cable
LS–5	wall	wooden	IP22	–15...+55 °C	decorative
LS–5/100	wall	wooden	IP22	–15...+55 °C	decorative
LS–5/100P	wall	wooden	IP22	–15...+55 °C	decorative, with volume control
LS–6	wall	metal	IP56	–40...+55 °C	compact
LS–6/100	wall	metal	IP56	–40...+55 °C	compact
LS–7	wall (bracket) or built-in	plastic	IP56	–40...+55 °C	compact, horn, with complete 3 m cable
LS–7/100	wall (bracket) or built-in	plastic	IP56	–40...+55 °C	compact, horn, with complete 3 m cable
LS–8/10	wall (bracket)	metal	IP56	–40...+55 °C	horn, with complete 3 m cable
LS–8/25	wall (bracket)	metal	IP56	–40...+55 °C	horn, with complete 3 m cable
LS–8/100/10	wall (bracket)	metal	IP56	–40...+55 °C	horn, with complete 3 m cable
LS–8/100/25	wall (bracket)	metal	IP56	–40...+55 °C	horn, with complete 3 m cable
LS–8/100/50	wall (bracket)	metal	IP56	–40...+55 °C	horn, with complete 3 m cable
LS–9/100	wall (bracket)	plastic	IP56	–40...+55 °C	horn
LS–10/100	wall (bracket)	plastic	IP56	–40...+55 °C	
LS–12/100	wall (bracket)	metal	IP56	–40...+55 °C	bidirectional
LS–13/10	wall (bracket)	plastic	IP56	–40...+55 °C	spotlight
LS–13/30	wall (bracket)	plastic	IP56	–40...+55 °C	spotlight
LS–13/100/10	wall (bracket)	plastic	IP56	–40...+55 °C	spotlight
LS–13/100/30	wall (bracket)	plastic	IP56	–40...+55 °C	spotlight
LS–13/10B	wall (bracket)	plastic	IP56	–40...+55 °C	spotlight, bidirectional
LS–13/30B	wall (bracket)	plastic	IP56	–40...+55 °C	spotlight, bidirectional
LS–13/100/10B	wall (bracket)	plastic	IP56	–40...+55 °C	spotlight, bidirectional
LS–13/100/30B	wall (bracket)	plastic	IP56	–40...+55 °C	spotlight, bidirectional
SDL	wall	plastic	IP22	–15...+55 °C	with volume control
SDL–4	wall	plastic	IP22	–15...+55 °C	with channel switch and volume control
LF–1/100	wall (bracket)	metal	IP56	–40...+55 °C	horn, with complete 0.4 m cable
DSP–15 (Ex)	wall (bracket)	antistatic plastic	IP66/67	–50...+60°C	horn, explosion proof
GVR-Exd-10-Prometey	wall (bracket)	metal	IP66	–65.. +85°	horn, explosion proof
GVR-Exd-20-Prometey	wall (bracket)	metal	IP66	–65.. +85°	horn, explosion proof
GVR-Exd-30-Prometey	wall (bracket)	metal	IP66	–65.. +85°	horn, explosion proof

LS–1, LS–1/100

LS–2, LS–2/100, SDL, SDL–4

LS–3 (10, 15 W),
LS–3/100 (10, 15, 20, 30 W)

LS-5, LS-5/100, LS-5/100P

LS–6/100

LS–7, LS–7/100

LS–8 (10, 25, 50 W),
LS–8/100 (10, 25, 50 W)

LS–9/100

DSP–15 (Ex)/100

SDP–1

GVR-Exd-10-Prometey

ALARM UNITS

View	Model	Signal type	Operating voltage	Power consumption	Output signal frequency (depends on settings)	Sound pressure	Globe colour
	HW1-24	Howler	⎓ 24 V	1.1 W	–	108 dB	–
	HW1-220	Howler	~ 220 V, 50 Hz	1.1 W	–	108 dB	–
	BH1-24	Buzzer-howler	⎓ 24 V	8 W	–	92 dB	–
	BH1-220	Buzzer-howler	~ 220 V, 50 Hz	7.5 W	–	92 dB	–
	AL-24-R	Sound and light	⎓ 24 V	8 W	420...1200 Hz	100 dB	red
	L-24-O	Sound and light	⎓ 24 V	8 W	420...1200 Hz	100 dB	orange
	AL-24-W	Sound and light	⎓ 24 V	8 W	420...1200 Hz	100 dB	white
	AL-24-G	Sound and light	⎓ 24 V	8 W	420...1200 Hz	100 dB	green
	AL-24-B	Sound and light	⎓ 24 V	8 W	420...1200 Hz	100 dB	blue
	AL-220-R	Sound and light	~ 220 V, 50 Hz	11 W	420...1200 Hz	100 dB	red
	AL-220-O	Sound and light	~ 220 V, 50 Hz	11 W	420...1200 Hz	100 dB	orange
	AL-220-W	Sound and light	~ 220 V, 50 Hz	11 W	420...1200 Hz	100 dB	white
	AL-220-G	Sound and light	~ 220 V, 50 Hz	11 W	420...1200 Hz	100 dB	green
	AL-220-B	Sound and light	~ 220 V, 50 Hz	11 W	420...1200 Hz	100 dB	blue
	A-24	sound	⎓ 24 V	0.6 W	420...1200 Hz	100 dB	–
	A-220	sound	~ 220 V, 50 Hz	3 W	420...1200 Hz	100 dB	–
	L-24-R	light	⎓ 24 V	7.5 W	–	–	red
	L-24-O	light	⎓ 24 V	7.5 W	–	–	orange
	L-24-W	light	⎓ 24 V	7.5 W	–	–	white
	L-24-G	light	⎓ 24 V	7.5 W	–	–	green
	L-24-B	light	⎓ 24 V	7.5 W	–	–	blue
	L-220-R	light	~ 220 V, 50 Hz	8.5 W	–	–	red
	L-220-O	light	~ 220 V, 50 Hz	8.5 W	–	–	orange
	L-220-W	light	~ 220 V, 50 Hz	8.5 W	–	–	white
	L-220-G	light	~ 220 V, 50 Hz	8.5 W	–	–	green
	L-220-B	light	~ 220 V, 50 Hz	8.5 W	–	–	blue

IP rating IP56
Operating temperature –40...+55 °C
Mounting wall

ALARM UNITS

View	Model	Signal type	Operating voltage	Power consumption	Flash frequency/ revolution	Globe colour
	FL-24-R	Light-pulse	⎓ 24 V	3 W	75 times/min	red
	FL-24-O	Light-pulse	⎓ 24 V	3 W	75 times/min	orange
	FL-24-W	Light-pulse	⎓ 24 V	3 W	75 times/min	white
	FL-24-G	Light-pulse	⎓ 24 V	3 W	75 times/min	green
	FL-24-B	Light-pulse	⎓ 24 V	3 W	75 times/min	blue
	RL-24-R	Light-flash	⎓ 24 V	65 W	180 rev/min	red
	RL-24-O	Light-flash	⎓ 24 V	65 W	180 rev/min	orange
	RL-24-G	Light-flash	⎓ 24 V	65 W	180 rev/min	green
	RL-24-B	Light-flash	⎓ 24 V	65 W	180 rev/min	blue
	RL-220-R	Light-flash	~ 220 V, 50 Hz	45 W	180 rev/min	red
	RL-220-O	Light-flash	~ 220 V, 50 Hz	45 W	180 rev/min	orange
	RL-220-G	Light-flash	~ 220 V, 50 Hz	45 W	180 rev/min	green
	RL-220-B	Light-flash	~ 220 V, 50 Hz	45 W	180 rev/min	blue

IP rating IP56
Operating temperature –40...+55 °C
Mounting wall (bracket)

ALARM UNITS

View	Model	Signal type	Operating voltage	Power consumption	Output signal frequency (depends on settings)	Sound pressure	Flash frequency/ revolution	Globe colour
	PGSVSPYSHKA–24	light/ pulse/ flash	⎓ 24 V	14 W	–	–	1–2 Hz	red, yellow, blue, green, white
	PGSVSPYSHKA–220	light/ pulse/ flash	~ 220 V, 50 Hz	14 W	–	–	1–2 Hz	red, yellow, blue, green, white
IP rating IP66 (explosion proof) Operating temperature –60...+60°C Mounting wall								
	ORBITA MK S	light	⎓ 24 V	max. 30 W	–	–	0.5–1 Hz (light)	red (colours at option)
	ORBITA MK Z	sound (Buzzer, Horn)	⎓ 24 V	max. 30 W	1500–3000 Hz (adjustable signal tone)	105 dB	3–4 Hz (buzzer)	–
	ORBITA MK SZ	light/ sound (Buzzer, Horn)	⎓ 24 V	max. 30 W	1500–3000 Hz (adjustable signal tone)	105 dB	0.5–1 Hz (light); 3–4 Hz (buzzer)	red (colours at option)
	BExS110DFDC024AS1A1G	sound	⎓ 24 V	6 W	420–2900 Hz (adjustable signal tone)	117 dB	–	–
	BExS110DFDC230AS1A1G	sound	~ 220 V, 50 Hz	12 W	420–2900 Hz (adjustable signal tone)	117 dB	–	–
IP rating IP67 (explosion proof) Operating temperature –50...+70°C Mounting wall								
	TB–105	sound	from subscriber line	–	2300–2900 Hz (2 selected tones	85–105 dB	–	–
IP rating IP56 Operating temperature –40...+55 °C Mounting wall								

OTHER UNITS

RB–139

RBWSB-24

Relay units

Provides switching of external power supply to the connected alarm units.

Model	Switching voltage	Switching current	Connected loads	Weight	Operating temperature	IP rating	Mounting	System
RB–139–24	⎓ 24 V	8 A	2	0.44 kg	–40...+55 °C	IP56	wall	ITS-1010
RB–139–220	~220 V, 50 Hz	8 A	2	0.44 kg	–40...+55 °C	IP56	wall	ITS-1010
RBWSB-24	⎓ 24 V	10 A	3	0.6 kg	–40...+55 °C	IP56	wall	BTS-1006
RBWSB-220	~220 V, 50 Hz	10 A	3	0.6 kg	–40...+55 °C	IP56	wall	BTS-1006

Sockets

Model	Functionality	Weight	Operating temperature	IP rating	Mounting
SM-1	Connect external microphones to main stations	0.085	–15...+55 °C	IP22	panel
SM-1K	Connect external microphones to main stations,	0.085	–15...+55 °C	IP22	panel
SM-2	With microphone-on button	0.1	–15...+55 °C	IP22	wall
SM-2K	Connect external microphones to main stations, with microphone-on button	0.1	–15...+55 °C	IP22	wall
SM-3	Connect external microphones to main stations	0.16	–40...+55 °C	IP56	panel
SM-3K	Connect external microphones to main stations,	0.16	–40...+55 °C	IP56	panel
KP-RJ11-WM	Connect analog telephones to analog telephone lines (connector RJ11);	0.04	–15...+55 °C	IP22	wall
KP-RJ11-TM	Black or light-grey	0.09	–15...+55 °C	IP22	panel
KP-RJ45-WM	Connect analog telephones to analog telephone lines (connector RJ11); white	0.05	–15...+55 °C	IP22	wall
KP-RJ45-TM	Connect digital telephones to digital telephone lines (connector RJ45)	0.12	–15...+55 °C	IP22	panel
CBP1	Connect portable stations	0.6	–40...+55 °C	IP56	wall
HS-CB	Connect peripheral equipment	0.7	–40...+55 °C	IP56	wall
SHP-3-WM	Connect headphones to three-program transmission line, select of program and volume control	1.1	–15...+55 °C	IP22	wall
SHP-3-PM	Connect headphones to three-program transmission line, select of program and volume control	0.5	–15...+55 °C	IP22	panel
PB–24PM	Connect portable pelephones PH–xxPM to telephone network or telephone unit / switching unit	0.65	–40...+55 °C	IP56	wall

SM-1

SM-3

CBP1

HS-CB

SHP-3

Selector
Ensures switching of the connected loudspeakers between entertainment sources.

Model	Positions	Switching power	Max. switching voltage	Weight	Operating temperature	IP rating	Mounting	Features
SELP-06-WM	6	6 W	100 V	0.09 kg	–15...+55 °C	IP22	wall	singe-channel
SELP-06-PM	6	6 W	100 V	0.09 kg	–15...+55 °C	IP22	panel	singe-channel
SEL-4P-WM	6	100 W	150 V	0.84 kg	–15...+55 °C	IP22	wall	singe-channel
SEL-4P-PM	6	100 W	150 V	0.35 kg	–15...+55 °C	IP22	panel	singe-channel
SEL-4PD-WM	6	100 W	150 V	0.84 kg	–15...+55 °C	IP22	wall	two-channel
SEL-4PD-PM	6	100 W	150 V	0.35 kg	–15...+55 °C	IP22	panel	two-channel

Volume controls
Controls volume of the connected loudspeakers. Function of volume control bypass via three-wire or four-wire circuit.

Model	Line channels	Max. power of loudspeakers	Input voltage	Weight	Operating temperature	IP rating	Mounting
DM-10D-WM	2	10 W	100 V	1.26 kg	–15...+55 °C	IP22	wall
DM-10D-PM	2	10 W	100 V	0.64 kg	–15...+55 °C	IP22	panel
DM-25D-WM	2	25 W	100 V	1.4 kg	–15...+55 °C	IP22	wall
DM-25D-PM	2	25 W	100 V	1.1 kg	–15...+55 °C	IP22	panel
DM-25D-PM	2	25 W	100 V	1.6 kg	–40...+55 °C	IP56	wall
DM-50D-WM	2	50 W	100 V	1.6 kg	–15...+55 °C	IP22	wall
DM-50D-PM	2	50 W	100 V	1.3 kg	–15...+55 °C	IP22	panel
DMP-06-WM	1	6 W	10 V	0.09 kg	–15...+55 °C	IP22	wall
DMP-06-PM	1	6 W	10 V	0.09 kg	–15...+55 °C	IP22	panel
DMP-12-WM	1	12 W	10 V	0.16 kg	–15...+55 °C	IP22	wall
DMP-12-PM	1	12 W	10 V	0.16 kg	–15...+55 °C	IP22	panel
DMP-24-WM	1	24 W	10 V	0.17 kg	–15...+55 °C	IP22	wall
DMP-24-PM	1	24 W	10 V	0.17 kg	–15...+55 °C	IP22	panel
DMP-36-WM	1	36 W	10 V	0.21 kg	–15...+55 °C	IP22	wall
DMP-36-PM	1	36 W	10 V	0.21 kg	–15...+55 °C	IP22	panel
DMP-50-WM	1	50 W	10 V	0.23 kg	–15...+55 °C	IP22	wall
DMP-50-PM	1	50 W	10 V	0.23 kg	–15...+55 °C	IP22	panel
DMO-10-WM	1	10 W	100 V	1.0 kg	–15...+55 °C	IP22	wall
DMO-10-PM	1	10 W	100 V	0.6 kg	–15...+55 °C	IP22	panel
DMO-25-WM	1	25 W	100 V	1.2 kg	–15...+55 °C	IP22	wall
DMO-25-PM	1	25 W	100 V	0.8 kg	–15...+55 °C	IP22	panel
DMO–25W	1	25 W	100 V	1.2 kg	–40...+55 °C	IP56	wall
DMO-50-WM	1	50 W	100 V	1.3 kg	–15...+55 °C	IP22	wall
DMO-50-PM	1	50 W	100 V	0.9 kg	–15...+55 °C	IP22	panel

Selector with volume control

Model	Positions	Max. power of connected loudspeakers	Input voltage	Weight	Operating temperature	IP rating	Mounting
SDP-4-WM	3	10 W	100 V	1.0 kg	–15...+55 °C	IP22	wall
SDP-4-PM	3	10 W	100 V	0.65 kg	–15...+55 °C	IP22	panel
SDP-06-WM	6	6 W	100 V	0.18 kg	–15...+55 °C	IP22	wall
SDP-06-PM	6	6 W	100 V	0.18 kg	–15...+55 °C	IP22	panel
SDP-12-WM	6	12 W	100 V	0.25 kg	–15...+55 °C	IP22	wall
SDP-12-PM	6	12 W	100 V	0.25 kg	–15...+55 °C	IP22	panel
SDP-24-WM	6	24 W	100 V	0.26 kg	–15...+55 °C	IP22	wall
SDP-24-PM	6	24 W	100 V	0.26 kg	–15...+55 °C	IP22	panel
SDP-36-WM	6	36 W	100 V	0.30 kg	–15...+55 °C	IP22	wall
SDP-36-PM	6	36 W	100 V	0.30 kg	–15...+55 °C	IP22	panel
SDP-50-WM	6	50 W	100 V	0.32 kg	–15...+55 °C	IP22	wall
SDP-50-PM	6	50 W	100 V	0.32 kg	–15...+55 °C	IP22	panel

Metal enclosures

To protect equipment and peripheral equipment on one deck.

							
Model	**BO-1H**		**BO-1**	**BO-2**	**BO–3**	**BO–4**	**BLTS2-BO**
Electric heating	Heating switch-on temperature – 15 °C	Heating switch-off temperature – 10 °C	–	–	–	–	–
Supply voltage/ Power consumption	~ 220 V, 50 Hz/ 300 W		–	–	–	–	–
Lock	+		+	+	+	+	+
Fixing the door in the open position	+		+	+	+	+	+
Weight	32.5 kg		7.5 kg	9.95 kg	6.6 kg	7.2 kg	12.8 kg
Operating temperature	–40...+55 °C		–40...+55 °C	–40...+55 °C	–40...+55 °C	–40...+55 °C	–40...+55 °C
IP rating	IP56		IP56	IP56	IP56	IP56	IP56
Mounting	wall		wall	wall	wall	wall	wall
Casing material	steel (coated)		steel (coated)	steel (coated)	steel (coated)	steel (coated)	steel (coated)

Junction boxes

Multipurpose connection device to split input circuits into several outputs.

Model	Inputs	Outputs	Circuits in terminal	Filter/fuse in circuits	Rated current	Switching voltage	IP rating	Operating temperature	Mounting
JB–16	1	16	2+"ground"	–/–	5 A	250 V	IP22	–15...+55 °C	wall
JB–124–30	1	2	10+"ground"	–/–	5 A	250 V	IP56	–40...+55 °C	wall
JB–124–40	1	9	4	–/–	5 A	250 V	IP56	–40...+55 °C	wall
JB–124–40P	1	9	4+"ground"	–/+ (two circuits)	1 A	250 V	IP56	–40...+55 °C	wall
JB–124–100	1	9	10+"ground"	–/–	20 A	250 V	IP56	–40...+55 °C	wall
JB–124B	1	9	2+"ground"	–/+ (each circuit)	20 A	250 V	IP56	–40...+55 °C	wall
JB–124BF	1	9	2+"ground"	+(each circuit) / +(each circuit)	20 A	250 V	IP56	–40...+55 °C	wall
JB–124PT	1	7	4+"ground"	–/–	20A (max. 5A per terminal)	250 V	IP56	–40...+55 °C	wall
JB–124PT–2	1	1	2+"ground"	–/–	5 A	250 V	IP56	–40...+55 °C	wall
JB–124PT–2F	1	1	4+"ground"	–/+ (two circuits)	5 A	250 V	IP56	–40...+55 °C	wall
JB–124PT–3	1	2	4+"ground"	–/–	5 A	250 V	IP56	–40...+55 °C	wall
JB–124PT–3F	1	2	4+"ground"	–/+ (two circuits)	5 A	250 V	IP56	–40...+55 °C	wall
JB–124PT–4	1	3	4+"ground"	–/–	5 A	250 V	IP56	–40...+55 °C	wall

JB–16

JB–124

JB–124PT

JB–124PT–2
JB–124PT–3
JB–124PT–4

JB-124PT-2F

JB-124PT-3F

POWER AMPLIFIERS TPA–15

To amplify input signals received
on user line from central unit.
Automatic recording of transmitted
and received data via user line to recording unit.

Model	Connection	Supply voltage	Output voltage	Output power	Weight	Operating temperature	IP rating	Mounting
TPA–15	To user line	⎓ 24 V / from ISDN line	⎓ 100 V	max. 15 W	1.9 kg	–40...+55°C	IP56	wall
	To user line		⎓ 30 V	max. 15 W	1.9 kg	–40...+55°C	IP56	wall
	To sound recording unit		⎓ 0.7 V	–	1.2 kg	–40...+55°C	IP56	wall

SIGNAL CONVERTER ST–2

To interface the system with analog PBX.

Model	Supply voltage / Power consumption	Power consumption	Ethernet ports	weight	Operating temperature	IP rating	Mounting
ST–2	⎓ 24 V	22 W	1	4.2 kg	–15...+55°C	IP22	wall

FOOT-SWITCH FB–1

To switch the microphone on and off when manual control is not available.

Use together with main stations SP 18, SP-36 and substatyions PH-CMIP of all types.

Model	Output signal	IP rating	Operating temperature	Weight
FB-1	Dry contact (max. 1A)	IP44	–15...+55 °C	0.4 kg

PERISCOPE
SHIP WEATHER STATION
ЦИУЛ.416531.103

Approved by
The Russian Maritime Register of Shipping
and Russian Classification Society

INTENDED USE

Measurement of environmental climate parameters, reception and display of statistical and current weather data on the screens and other external systems.

FEATURES AND ADVANTAGES

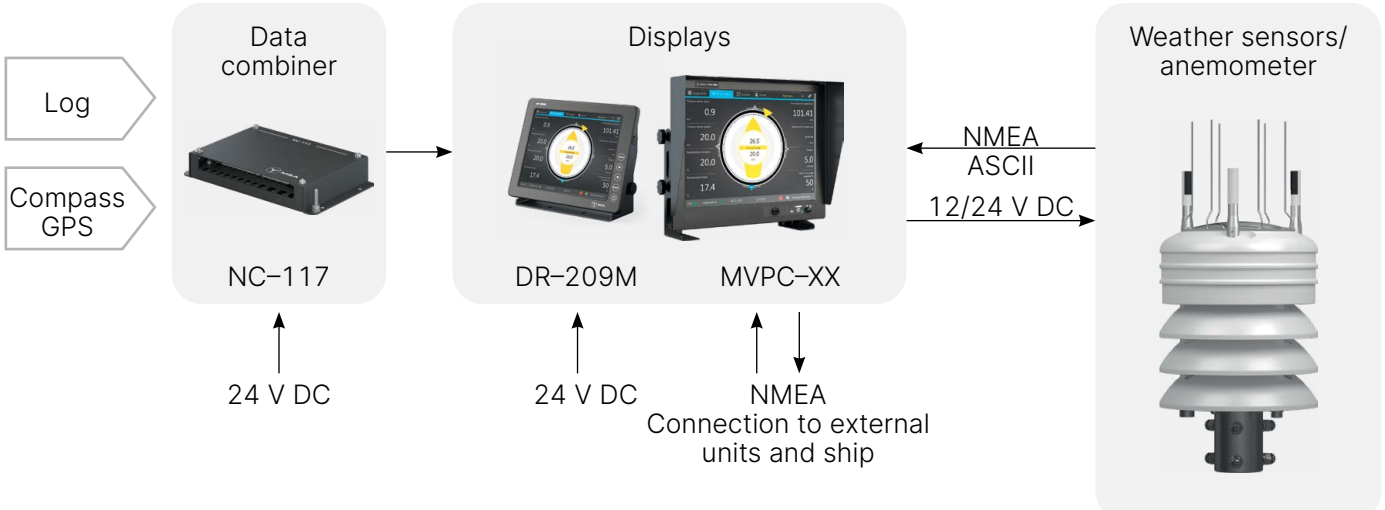
- 5 weathe sensors and LCD touch screen 8”
- Some sensors are outfitted with built-in GPS–receiver (gyrocompass and log connection is not required to define ship speed and course and calculate true wind parameters)
- Control elements:
  – Touch screen,
  – trackball/mouse
- Any MVPC-XXXX type panel PC may be used as a system display (see Marine Electronics catalogue)
- Sensor heating enables work in extremely cold conditions
- Different measurement units at option.
- Data output in NMEA format
- Data from weather sensors are obtained in NMEA, ASCII formats
- Received data are recorded in the ship’s log and exported into XLS format
- Data representation:
  – digital format,
  – analog,
  – graphic form
- Overvoltage protection/lightning protection

Go to table of contents

SPECIFICATIONS OF PERISCOPE SYSTEM

Parameter		Value
Measurable atmospheric parameters *		- air temperature - atmospheric pressure - wind direction and speed - air humidity - precipitation amount (rain, hail)
Additional data from external units		- vessel course from gyrocompass or GPS-receiver - vessel speed from LOG or GPS-receiver (NMEA data according to standard IEC 61162-1, 2)
Displayed data *		- air temperature - water temperature - atmospheric pressure - wind direction and speed (true and relative wind gusts) - air humidity - precipitation amount (rain, hail) - data are presented in pictorial or graphical formats (figures or line graphs). - update interval: 30 to 60 sec
Recording of the meteorological data		Buil-in storage Record interval: 1 to 3,600 sec
Data output to the external systems		RS–422/RS–232/RS-485 data baud rate 4800-115200 bit/s
Screen size		8” (1024 × 768, 4:3)
System control devices		Trackball (mouse), touch screen
Supply voltage		18 – 36 VDC
Max. power consumption (including heating)		55 W
IP rating		Indoor installation: IP22 On-deck units: IP56
Measurement units	Atmospheric pressure: Air temperature: Relative humidity: Wind speed: Wind direction: Precipitation amount (rain, hail):	hPa, Pa, mm Hg, bar, in.Hg. °C, °F degrees % m/s, km/h, miles per hour (mph), knots degrees mm/h, inches per hour
* The accuracy and limits of measured atmospheric parameters differ and depend on the used weather sensors (see table below).		

WEATHER STATION CONFIGURATION



MEASURED ATMOSPHERIC PARAMETERS AND SENSORS

Input voltage (MS–315/314/313 and OPD–146), V		18...36
Heating input voltage, V		9...36
Power consumption, W		18
Heating power, W		10
Interface		RS-422/RS-485
IP rating		IP56
Weight, kg		1.6
Operating temperature, °C		–52...+60
Limiting temperature, °C		–60...+70
	Temperature measurement	
	range, °C	–52...+60
Absolute error, °C	range from -52 °C to -40 °C inclusive	±0.3
	range above -40 °C to +60 °C	±0.2
	Air pressure measurement	
	Range, hPa	300...1200
Absolute error, gPa	temperature from -52 °C to 0 °C inclusive	±1
	Temperature above 0 °C to +40 °C inclusive	±0.3
	temperatures above +40 °C to +60 °C	±1
	Humidity measurement	
	range, %	0...100
Absolute error, %	range from 0.8 % to 90% inclusive	±2
	ange over 90 % to 100 %	±3
	Wind speed measurement	
	range, m/s	0.2...65.0
Absolute error, m/s	range from 0.2 to 10 m/sec inclusive	±0.3
		±(0.3+0,02·V)[1]
	Wind direction	
	Range	0... 360
	Absolute error	±2
	Precipitation amount	
	Range, mm	0...999
	Absolute error, mm	±(0.5+0.02·M)[2]
	Precipitation intensity	
	Range, mm/h	0...200
	Absolute error, mm/h	±(0.5+0.03·H)[3]

[1] V – air flow rate
[2] M – amount of precipitation
[3] H – precipitation intensity

					
	MS-315	MS-PTW-315	MS-TW -315	MS-SDW-315	MS-AP-315
	ЦИУЛ.416531.001	ЦИУЛ.416531.001-01	ЦИУЛ.416531.001-04	ЦИУЛ.416531.001-02	ЦИУЛ.416531.001-03
Atmospheric pressure: Range: 300...1200 hPa Error: -52...0 - ±1 0...+40 ±0.3; +40...+60±1	+	+			+
Temperature Range: -52...+60°C Error: ±0.3°C	+	+	+		
Relative humidity Range: 0...100% Error: ±2% (0...90%) ±3% (90...100%)	+	+	+		
Precipitation Range: 0...999 mm/h Error: (0.5+0.02·M)	+	+		+	+
Wind speed Range: 0.2...60 m/s Error: ±0.3 m/s	+			+	
Wind direction Range: 0...360° Error: ±2°	+			+	

					
	MS-VR-316	MS-SR-315	MS-SA-M-319	MS-SA-C-319	MS-SR-M-319
	ЦИУЛ.416531.003	ЦИУЛ.416531.001-05	ЦИУЛ.416531.007	ЦИУЛ.416531.008	ЦИУЛ.416531.006
Visibility range Range: 10...10000 m Error: ±8% (10...600 m) ±10 (600...10000 m)	+				
Solar radiation intensity Range: 1...2000 W/m², 1...634 BTU Error: ±2%		+			
Wind speed Range: 0.5...70 m/s Error: ±0.3 m/c			+		
Wind speed Range: 0.5...60 m/s Error: ±0.3 m/c				+	
Wind direction Range: 0...360° Error: ±3°			+		+

SYSTEM UNITS

Intended use	Name	Code	Description
Analog-digital converter	ADPC-101	ЦИУЛ.468353.001	Digitizes obsolete analog signals from gyrocompasses and logs into NMEA sentences
Multifunctional converter	MFC-151	ЦИУЛ.468363.008-03	Receives, combines, converts and multiplies NMEA sentences transmitted over RS-422, RS-485, Ethernet
System dusplay	DR–209M	ЦИУЛ 467845.009	Multipurpose digital repeater
Additional equipment	NC–117	ЦИУЛ 468152.101	Combines standard digital signals (NMEA sentences)
	MDU–102	ЦИУЛ 468363.001	Amplifier-multiplier of NMEA 0183 signals
System control	Trackball	ЦИУЛ 467219.201	TBM–1–50B – trackball with adjustable force
	Keyboard	ЦИУЛ 467254.022	UKT–801 – keyboard combined with trackball
Power supply units	PS–114–24	ЦИУЛ 461524.001	Uninterruptible power supply with input 220 V, 50–60 Hz and output 24 VDC. Built-in battery for continuous load supply
	PS103	ЦИУЛ 436131.001	Power supply with input 220 V, 50–60 Hz and output 24 VDC. Input to connect external battery.
	PS–108	ЦИУЛ 436121.001–03	Power supply with input 24 VDC and output 24 VDC (regulated)

		
Name	NC–117	MDU–102
Intended use	NMEA data combiner	NMEA buffer
Code	ЦИУЛ.468152.101	ЦИУЛ.468363.001
Input voltage	24 VDC	24 VDC
Max. power consumption	7 W	3 W
Input ports	8 × RS–232/422 + 1 × USB	2 × RS–232, RS–422/485
Output ports	4 × RS–232/422 + 1 × USB	4 × RS–232, RS–422/485, Galvanically isolated 4 × RS–232, RS–422/485, Non-isolated
Signal format	NMEA 0183 versions 1–3 (IEC 61162–1, 61162–2)	NMEA 0183 versions 1–3 (IEC 61162–1, 61162–2)

Bracket for sensor MS–315

EXTERNAL SOUND RECEPTION SYSTEM NS–201 ЦИУЛ.467852.001

Approved by
The Russian Maritime Register of Shipping
and Russian Classification Society

INTENDED USE

The system receives external sound signals from all directions within bandwidth 70-820Hz (up to 8000 Hz at option) and rebroadcasts the received signals to the pilothouse indicating the direction of sound signal source..

SYSTEM COMPONENTS

The basic system consists of sound signal receiver (microphone unit) and display

- Receiver microphones are combined in a compact unit (No microphone spacing required)
- Signals are received within of 70-820 Hz (up to 8000 Hz at option), other signals are disregarded by the system
- The system can operate in cold weather (heating of microphone unit)
- Additional display can be used (repeater)
- External loudspeaker can be connected

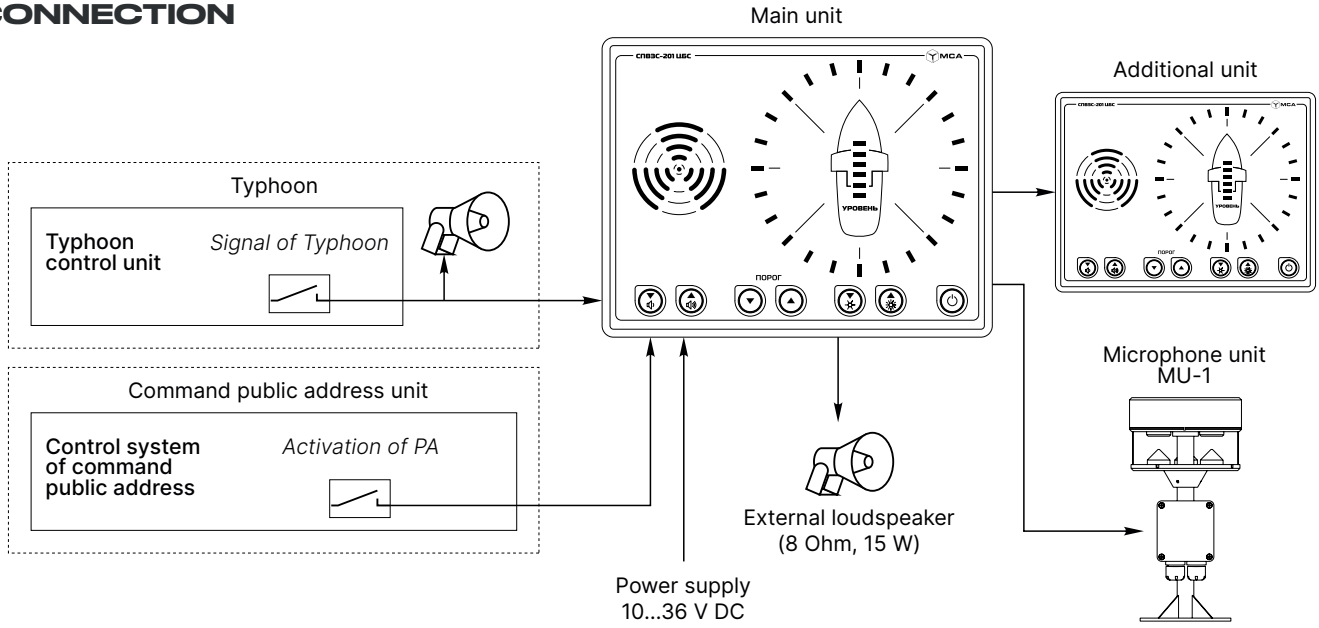
Controls

- Trigger threshold (exceeding the noise level)
- Loudspeaker volume
- Backlight of the controls and display

TECHNICAL SPECIFICATIONS

Operating specifications		
Loudspeaker power (built-in/external)	5 W / 15 W	
Number of microphones, pcs	3 mics combined (omnidirectional)	
Pitch of bearing indicator	15 °	
Operating specifications	**Main unit**	**Microphone unit MU–1**
Operating temperature	–15 °C...+55 °C	–40 °C...+55 °C
Storage temperature	–60 °C...+70 °C	–60 °C...+70 °C

CONNECTION



SYSTEM UNITS

Main unit CU

Processes and reproduces external audio signals from the microphone unit; LEDs help to determine the direction of the signal source and its level.
Additional display can be connected to duplicate signals from the main unit.

Code	ЦИУЛ.467852.002
Supply voltage	24 V DC
Bandwidth	70–820 Hz
Max. power consumption	12 W
Sound pressure	86 dB
Additional panels	max. 4 pcs
Operating temperature	–15...+55 °C
IP rating	IP44
Mounting	panel
Weight	1.1 kg

Remote control RC-MU
Duplicates the controls of the main unit if it is installed in a hard-to-reach location (e.g., underdeck or overhead console).

Code	ЦИУЛ.467219.004
Supply voltage	24 V DC
Communication interface	RS–485
Operating temperature	–15...+55 °C
IP rating	IP22
Mounting	panel
Weight	0.23 kg

Microphone unit MU–1
A set of electrodynamic microphones grouped into a single dust- and moisture-proof design. Receives external audio signals and transmits them to the main unit.
Indoor and open deck installation. Built-in microphone heating.

Parameter	Value
Code	ЦИУЛ.467271.003
Supply voltage	24 V DC
Power consumption	22 W (heating circuit)
Operating temperature	–40...+55 °C
IP rating	IP56
Mounting	horizontal surface
Weight	1.7 kg

Loudspeaker LS–3/15
To connect the main unit and display. Amplifies the sound signal from the main unit in the noisy areas. Indoor and open deck installation.

Parameter	Value
Code	ЦИУЛ.467284.102
Supply voltage	30 V
Power	15 W
Sound pressure	108 dB
Operating temperature	–40...+55 °C
IP rating	IP56
Mounting	bracket
Weight	1.4 kg

SECURITY CCTV SYSTEM
CCTV–2003/1 ЦИУЛ.463349.001

Approved by
The Russian Maritime Register of Shipping
and Russian Classification Society

INTENDED USE

Provides remote surveillance solutions for land-based facilities, sea- and river-going vessels. Automatic recording and storage of video data.

FEATURES AND ADVANTAGES

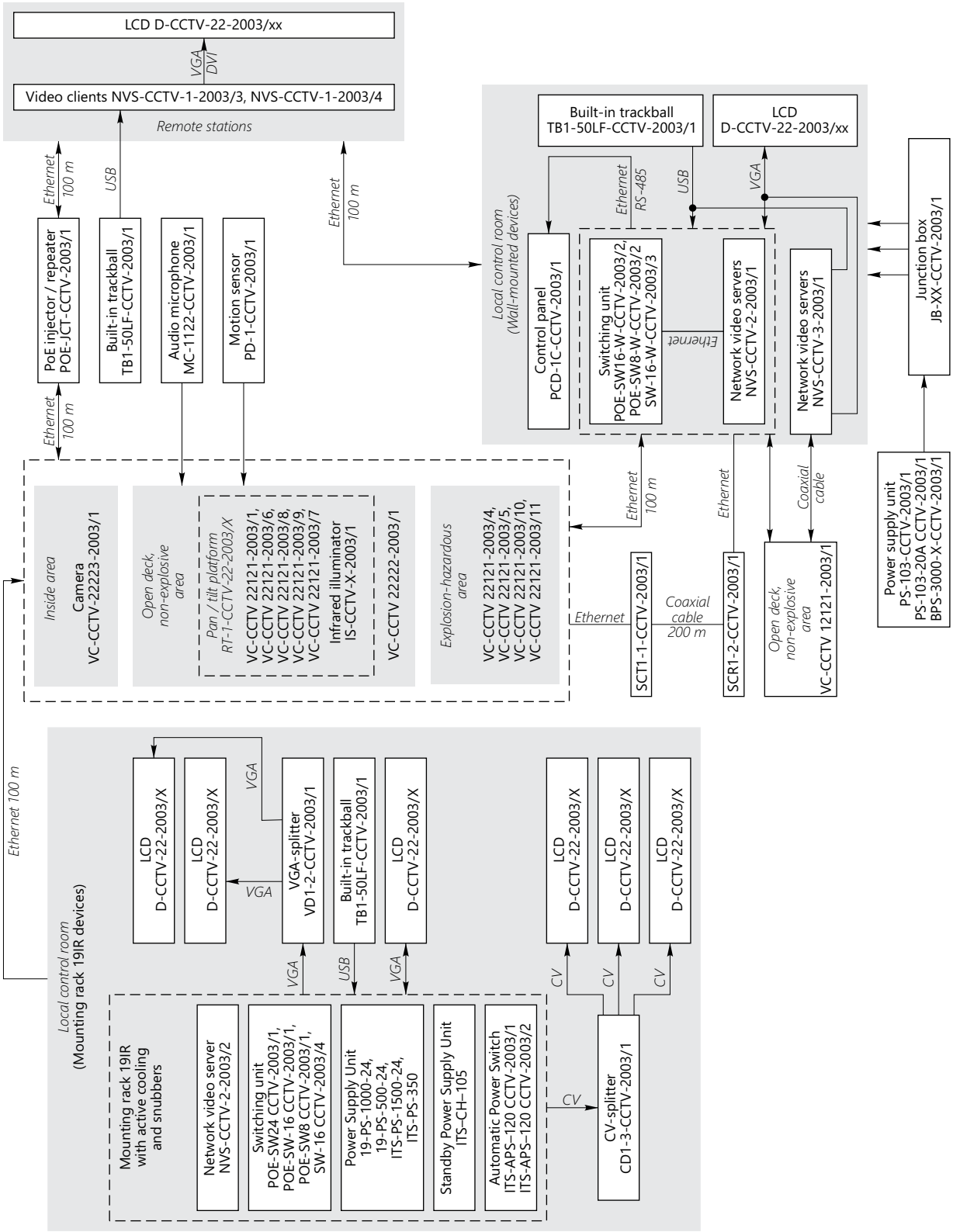
Functionality

- Active monitoring of the secured areas from the local control room
- Audio and video data are recorded on the video server and remote client via Ethernet network
- Data storage and playback on the video server
- Motion detection or external sensors actuation (dry contact)
- Light and sound alarms in case of equipment or power failure
- Remote control of cameras, camera wipers and rotary devices via RS-485 and Ethernet
- Data storage for 1 month
- Records (log) keeping
- All settings are recovered from non-volatile memory in case of power loss or equipment failure

Functionality of the cameras

- Delivery of video and audio data via Ethernet network
- Automatic night surveillance mode
- External microphone can be connected
- External sensors (dry contact type) can be connected

STRUCTURAL DIAGRAM



VIDEO CAMERAS

		Model	Focal length, mm	Focal length	Angle of view (horizontal)	Material
Digital colour video cameras						
Ex		VC-DVS 22121–2003/1	3.6/6.0/8.0/12.0	fixed	84/56/34/25	stainless steel
		VC-DVS 22223–2003/1	2.8 – 12	variable	130–28	aluminum
Ex		VC-DVS 22121–2003/4	3.6/6.0/8.0/12.0	fixed	84/56/34/25	aluminum
Ex		VC-DVS 22121–2003/5	3.6/6.0/8.0/12.0	fixed	84/56/34/25	stainless steel
		VC-DVS 22121–2003/6	6–180	variable	33–1.7	stainless steel
		VC-DVS 22121–2003/7	6–180	variable	33–1.7	stainless steel
		VC-DVS 22222–2003/1	4.7–94	variable	61.4–2.8	aluminum
		VC-DVS 22121–2003/9	Camera: 6–180 Thermal imager: 7.5/13.0/19.0/35.0	variable	Camera:33–1,7 Thermal imager: 76/45/32/17/10	stainless steel
Ex		VC-DVS 22121–2003/10	6–180	variable	33–1.7	aluminum
Ex		VC-DVS 22121–2003/11	6–180	variable	33–1.7	stainless steel
Analog colour video cameras						
		VC-DVS 12121–2003/1	3.6/6.0/8.0/12.0	fixed	105/65/45/28	stainless steel
		VC-DVS 12223–2003/1	3.6/6.0/8.0/12.0	fixed	105/65/45/28	stainless steel
Thermal imaging camera						
		VC-DVS 22121–2003/8	7.5/13.0/19.0/35.0 /60/70/100	fixed	76/45/32/17 10/8.3/6.2	aluminum

		Model	Power	IR–backlight	IP rating	Operating temperature	Heating	Features	Options
Digital colour video cameras									
Ex		VC-DVS 22121–2003/1	PoE	yes	IP66	–60...+55 °C	yes	–	microphone, rotary device, lens washer, explosion proof
		VC-DVS 22223–2003/1	PoE	yes	IP66	–15...+55 °C	no	Dome, without microphone	no
Ex		VC-DVS 22121–2003/4	24VDC + PoE	no	IP66	–40...+55 °C	yes	–	no
Ex		VC-DVS 22121–2003/5	24VDC + PoE	yes	IP66	–40...+55 °C	no	–	no
		VC-DVS 22121–2003/6	24VDC / PoE	yes	IP66	–60...+55 °C	yes	–	microphone, rotary device
		VC-DVS 22121–2003/7	24VDC / PoE	yes	IP66	–40...+55 °C	yes	–	microphone, rotary device, lens washer
		VC-DVS 22222–2003/1	24VDC	yes	IP66	–40...+55 °C	no	dome, rotary	no
		VC-DVS 22121–2003/9	24VDC	no	IP66	–40...+55 °C	no	Combined + thermal imager	rotary device, lens washer
Ex		VC-DVS 22121–2003/10	24VDC + PoE	yes	IP66	–40...+55 °C	yes	–	no
Ex		VC-DVS 22121–2003/11	24VDC + PoE	yes	IP66	–40...+55 °C	yes	–	no
Analog colour video cameras									
		VC-DVS 12121–2003/1	24VDC	yes	IP66	–60...+55 °C	yes	Analog, colour, infrared	no
		VC-DVS 12223–2003/1	24VDC	yes	IP44	–15...+55 °C	no	Analog, colour, Infrared, dome	no
Thermal imaging camera									
		VC-DVS 22121–2003/8	PoE	no	IP66	–40...+55 °C	yes	thermal imaging, fixed focal length	no

POWER SUPPLY UNITS

№	Model	1. Code	2. Main power	3. Standby	4. Output voltage	5. Rated power
1	Uninterruptible power supply unit BPS-114-24-CCTV-2003/1	ЦИУЛ.461524.205	220 V, 50 Hz	–	24 V DC	320 W
2	Power supply / charger BPS-3000-X-CCTV-2003/1	ЦИУЛ.461524.003	220 V, 50 Hz	–	24 V DC	1000 W
3		ЦИУЛ.461524.003–01	220 V, 50 Hz	–	24 V DC	2000 W
4		ЦИУЛ.461524.003–02	220 V, 50 Hz	–	24 V DC	3000 W
5	Power supply unit PS–103–20 (PS–103–20 CCTV–2003/2)	ЦИУЛ.436247.204	220 V, 50 Hz	24 V DC	24 V DC	190 W
6	Uninterruptible power supply unit ITS-PS-350-CCTV-2003/1	ЦИУЛ.436247.205	220 V, 50 Hz	SB	24 V DC	20 W
7	Regulated power supply unit ITS-PS-1500-24-DVS-2003/1	ЦИУЛ.436237.202	220 V, 50 Hz	–	24 V DC	1500 W
8	Regulated power supply unit ITS-PS-1500-24-DVS-2003/1	ЦИУЛ.436537.201–02	220 V, 50 Hz	24 V DC	24 V DC	800 W
9	Regulated power supply unit ITS-PS-500-24-DVS-2003/1	ЦИУЛ.436537.201–03	220 V, 50 Hz	24 V DC	24 V DC	500 W
10	Automatic power transfer switch ITS-APS-120-24-CCTV-2003/1	ЦИУЛ.468345.202–01	24 V DC	24 V DC	24 V DC	–
11	Automatic power transfer switch ITS-APS-120-220-CCTV-2003/2	ЦИУЛ.468345.202	220 V, 50 Hz	220 V, 50 Hz	220 V, 50 Hz	–
12	Charging unit ITS-CH –105–24 CCTV–2003/1	ЦИУЛ.436537.204	24 V DC	SB	24 V DC	600 W
13	Charging unit ITS-CH –105–220 CCTV–2003/1	ЦИУЛ.436537.204–01	220 V, 50 Hz	SB	24 V DC	500 W

1. Uninterruptible power supply unit
BPS-114-24-CCTV-2003/1

2,3,4. Power supply / charger
BPS-3000-X-CCTV-2003/1

5. Power supply
PS–103–20 (PS–103–20 CCTV–2003/2)

6. Uninterruptible power supply unit
ITS-PS-350-CCTV-2003/1

7. Regulated power supply unit
ITS-PS-1500-24-DVS-2003/1

8,9. Regulated power supply unit
ITS-PS-1000-24-CCTV-2003/1,
ITS-PS-500-24-CCTV-2003/1

№	Model	6. Galvanic isolation	7. Built-in battery	8. Battery capacity	9. External battery charge	10. Weight	11. Operating temperature	12. IP rating	13. Mounting
1	Uninterruptible power supply unit BPS-114-24-CCTV-2003/1	yes	yes	17 Ah	–	21.7 kg	–15...+55 °C	IP22	wall
2	Power supply / charger BPS-3000-X-CCTV-2003/1	yes	–	On request	yes	24.6 kg	–15...+55 °C	IP44	wall
3		yes	–	On request	yes	24.6 kg	–15...+55 °C	IP44	wall
4		yes	–	On request	yes	26.7 kg	–15...+55 °C	IP44	wall
5	Power supply unit PS–103–20 (PS–103–20 CCTV–2003/2)	yes	–	–	–	5 kg	–15...+55 °C	IP22	wall
6	Uninterruptible power supply unit ITS-PS-350-CCTV-2003/1	yes	yes	18 Ah	–	8.5 kg	–15...+55 °C	IP20	rack 19″
7	Regulated power supply unit ITS-PS-1500-24-DVS-2003/1	yes	–	–	–	8.5 kg	–15...+55 °C	IP20	rack 19″
8	Regulated power supply unit ITS-PS-1500-24-DVS-2003/1	yes	–	–	–	8.5 kg	–15...+55 °C	IP20	rack 19″
9	Regulated power supply unit ITS-PS-500-24-DVS-2003/1	yes	–	–	–	8.5 kg	–15...+55 °C	IP20	rack 19″
10	Automatic power transfer switch ITS-APS-120-24-CCTV-2003/1	–	–	–	–	9.57 kg	–15...+55 °C	IP20	rack 19″
11	Automatic power transfer switch ITS-APS-120-220-CCTV-2003/2	–	–	–	–	9.61 kg	–15...+55 °C	IP20	rack 19″
12	Charging unit ITS-CH –105–24 CCTV–2003/1	–	–	160 Ah	yes	9.3 kg	–15...+55 °C	IP20	rack 19″
13	Charging unit ITS-CH –105–220 CCTV–2003/1	–	–	200 Ah	yes	10.2 kg	–15...+55 °C	IP20	rack 19″

10,11. Automatic power transfer switch
ITS-APS-120

12,13. Charging unit
ITS-CH-105

NETWORK VIDEO SERVERS AND VIDEO CLIENTS

Collects, processes and stores data from the video cameras (max. 16 digital and analogue cameras). Provides displaying of 64 cameras, archive playback, records keeping, PTZ cameras control.
Max. capacity of the connected HDs is 24 TB (uninterruptible recording from 16 cameras for 30 days).

Name	NVS-DVS 2–2003/1	NVS-DVS 2–2003/2	NVS-DVS 3–2003/1	NVS-DVS 1–2003/3	NVS-DVS 1–2003/4
Code	ЦИУЛ.467549.202–XX*	ЦИУЛ.467549.201–XX*	ЦИУЛ.467549.203–XX*	ЦИУЛ.466227.6XX–XXX.XXX**	ЦИУЛ.466227.2XX–XXX.XXX**
Product	Video server	Video server	Video server	Network video client	
Supply voltage	19...36 V DC	19...36 V DC	19...36 V DC	90...264 V, 50–60 Hz (19...36 VDC at option)	
Analog cameras	–	–	Up to 8 digital and/or analog cameras	–	–
digital cameras	Up to 16	Up to 16	Up to 8 digital and/or analog cameras	Up to 64	Up to 64
Number and type of ports	8 Ethernet 10/100Base–TX (PoE support) 1 Ethernet 10/100/1000Base–T	1 Ethernet 10/100/1000Base–T 16 (1Vp–p 75Ω), BNC	–	–	–
PoE budget	120 W	–	–	–	–
Video recording	+ (max. resoltuion 1920×1080)			+***	+***
Video compression algorithm	H.264	H.264	H.264	H.264	H.264
Audio recording	+	+	+	+***	+***
Audio compression algorithm	G.711	G.711	G.711	G.711	G.711
Video outputs	VGA, HDMI, CVBS	VGA, HDMI, CVBS	VGA, HDMI, CVBS	VGA, HDMI, DVI–D	VGA, HDMI, DVI–D
HD capacity	Up to 2 × 12 TB	Up to 2 × 12 TB	Up to 2 × 6 TB	Up to 120 TB	Up to 120 TB
Operating temperature	–15...+55 ºC	–15...+55 ºC	–15...+55 ºC	–15...+55 ºC	–15...+55 ºC
IP rating	IP22	IP20	IP22	IP22	IP20
Mounting type	Wall	Rack 19”	Wall	Rack 19”	Wall

* X – depends on HD capacity
** X – depends on server specifications
*** at option

SWITCHING UNITS

Depending on the model, provides connection of up to 24 devices with POE power or w/power supply.

Network switch SW–16–W

Ethernet 10/100/1000Base–TX and 10/100/1000Base–T/SFP standards for data transmission.

Network switch POE–SW–16–W

Model	Code	Ethernet (RJ–45) ports	Incl. POE ports	Add. com ports (RJ–45/SFP)	POE power (per channel)	Total POE budget	Power consumption	Mounting
POE-SW8-DVS-2003/1	ЦИУЛ.465235.211–03	9	8	0/1	15,4 W	125 W	134 W	Rack 19”
POE-SW8-W-DVS-2003/2	ЦИУЛ.465235.211–03	9	8	0/1	15,4 W	125 W	134 W	Wall
POE-SW8-W-DVS-2003/2	ЦИУЛ.465235.211–02	16	16	2/2	15,4 W	246 W	302 W	Rack 19”
POE-SW16-DVS-2003/1	ЦИУЛ.465235.211–04	16	16	2/2	15,4 W	246 W	302 W	Wall
POE-SW24-DVS-2003/1	ЦИУЛ.465235.211–01	24	24	0/4	15,4 W	193 W	239 W	Rack 19”
SW16- DVS-2003/4	ЦИУЛ.465235.213	16	-	-	-	-	9.3 W	Rack 19”
SW16-W-DVS-2003/3	ЦИУЛ.465235.213–01	16	-	-	-	-	9.3 W	Wall

DISPLAYS

Colour LCD D-CCTV-22-2003/X

The displays have various diagonals (10” - 46”) and aspect ratio. Options: touch screen, different IP rating of the front panel (IP 56), optical bonding. Galvanic isolation from power mains.

A backlight dimmer is located on the front panel. Depending on the model, the display can operate with 12 / 24V DC and 110/220V AC.

Display type	Material	Diagonal (aspect ratio)	Viewable area, mm	Resolution	Weight, kg	Power consumption, W	IP rating
D-CCTV- 22-2003/10	metal	10,4” (4:3)	210 × 157	1024 × 768	8.5 kg	16 W	IP22 / IP56 (option) – front panel, IP22 – other surfaces
D-CCTV-22-2003/12	metal	12,1” (4:3)	246 × 184	1024 × 768	9.5 kg	20 W	
D-CCTV 22–2003/12–1	glass						
D-CCTV 22–2003/15	metal	15” (4:3)	304 × 228	1024 × 768	10.0 kg	20 W	
D-CCTV 22–2003/15–1	glass						
D-CCTV 22–2003/17	metal	17” (5:4)	337 × 270	1280 × 1024	12.2 kg	40 W	
D-CCTV 22–2003/17–1	glass						
D-CCTV 22–2003/19	metal	19” (5:4)	376 × 301	1280 × 1024	13.1 kg	40 W	
D-CCTV 22–2003/19–1	glass						
D-CCTV 22–2003/21	metal	21,3” (4:3)	432 × 324	1600 × 1200	15.0 kg	40 W	
D-CCTV 22–2003/21–1	glass						
D-CCTV 22–2003/211	metal	21,5” (16:9)	476 × 268	1920 × 1080	15.0 kg	50 W	
D-CCTV 22–2003/211–1	glass						
D-CCTV 22–2003/231	metal	23” (16:9)	509 × 286	1920 × 1080	18.0 kg	50 W	
D-CCTV 22–2003/231–1	glass						
D-CCTV 22–2003/24	metal	24” (16:10)	518 × 324	1920 × 1080	18.0 kg	50 W	
D-CCTV 22–2003/24–1	glass						
D-CCTV 22–2003/27	metal	27” (16:9)	597 × 336	1920 × 1080	20.0 kg	50 W	
D-CCTV 22–2003/27–1	glass						
D-CCTV 22–2003/32	metal	32” (16:9)	698 × 392	1920 × 1080	25.0 kg	80 W	
D-CCTV 22–2003/32–1	glass						
D-CCTV 22–2003/42	metal	42” (16:9)	930 × 523	1920 × 1080	42.0 kg	80 W	
D-CCTV 22–2003/42–1	glass						
D-CCTV 22–2003/46	metal	46” (16:9)	1018 × 572	1920 × 1080	47.7 kg	100 W	
D-CCTV 22–2003/46–1	glass						

PERIPHERAL EQUIPMENT

PTZ cameras control console
PCD-1C-CCTV-2003/1
remote control of PT platforms and cameras, and varifocal lens cameras

Model	Code	Mounting	Supply voltage	Connection interface	Control protocols	Power consumption	Weight	Operating temperature	IP rating
PCD-1C-CCTV-2003/1	ЦИУЛ.421414.201	Panel	19–36 V DC	RS–485, Ethernet	ONVIF/Pelco	6 W	0.8 kg	–15...+55 ºC	IP22
	ЦИУЛ.421414.201–01	Desk-top	19–36 V DC	RS–485, Ethernet	ONVIF/Pelco	6 W	0.8 kg	–15...+55 ºC	IP22

Pan / tilt platform

Supply voltage 19...36 V
IP rating IP66

RT-1-CCTV-22-2003/1

RT-1-CCTV-22-2003/2

Model	RT–1 (RT-1-CCTV-22-2003/1)	RT–2 (RT-1-CCTV-22-2003/2)	RT–2 (RT-1-CCTV-22-2003/4)	PTR–407Ex (RT-1-CCTV-22-2003/3)
Code	ЦИУЛ.452796.201	ЦИУЛ.452796.202	ЦИУЛ.452796.204	ЦИУЛ.452796.203
Control protocol	Pelco	ONVIF/ Pelco	ONVIF/ Pelco	Pelco
Power consumption	60 W	120 W	120 W	200 W
Max. load	4 kg	14 kg	14 kg	40 kg
Pan rotation angle	0°...355°	0°...360°	0°...360°	0°...360°
Tilt rotation angle	–10°...80°	–60°...60°	–60°...+75°	–90°...90°
Material	steel	aluminum	stainless steel	stainless steel
Installed equipment	CMS–100A, CMS –100, CMS –140У	CMS–100A, CMS–100, CMS–140У, CMS–140У/С, TMA–130, CTMS–160/10,5/У	CMS–100A, CMS–100, CMS–140У, CMS–140У/С, TMA–130, CTMS–160/10,5/У	CMA–130Ex, CMS–150Ex, CMA–130У/Ex, CMS–150У/Ex
Explosion proof	–	–	–	yes
Operating temperature	–40...+55 °C	–40...+55 °C	–40...+55 °C	–60...+55 °C
Weight	10.73 kg	10.00 kg	20.60 kg	21.00 kg

VGA-splitter VD1
amplifies and splits input VGA signal into two outputs or longer distance.

VGA-splitter VD1–2

VGA-splitter VD1–2

Model	Code	Type of signal	Inputs	Outputs	Supply voltage	Operating temperature	IP rating	Weight
VGA-splitter VD1–2 (VD1–2 CCTV–2003/1)	ЦИУЛ.468347.201	VGA	1	2	19–36 VDC	–15...+55 °C	IP22	2.00 kg
VGA-splitter VD1–3 (VD1–3 CCTV–2003/1)	ЦИУЛ.468347.202	CV	1	3	19–36 VDC	–15...+55 °C	IP22	1.34 kg

Infrared illuminator IS-CCTV X–2003/1

Infrared band is invisible to human eye ensuring discreet surveillance. The IR searchlight switches on automatically depending on the lighting conditions. Open deck installation (IP66).

Model	Code	Illumination range	Emission wave length	Supply voltage	Power consumption	Weight	Operating temperature	IP rating	Mounting
IS-CCTV 1–2003/1	ЦИУЛ.676513.201–02	70 m	850 nm	9–36 VDC	32 W	2.3 kg	–40...+55 °C	IP66	Wall
IS-CCTV 2–2003/1	ЦИУЛ.676513.201–01	100 m	850 nm	9–36 VDC	32 W	2.3 kg	–40...+55 °C	IP66	Wall
IS-CCTV 3–2003/1	ЦИУЛ.676513.201	240 m	850 nm	9–36 VDC	32 W	2.3 kg	–40...+55 °C	IP66	Wall

Motion sensor PD-1
Combined type of detection (IR and microwave emission) reduces the number of false alarms.

Model	Code	Detection type	Detection range	Supply voltage	Power consumption	Weight	Operating temperature	IP rating	Mounting
PD-1CCTV–2003/1	ЦИУЛ.425158.201	IR + microwave	15 m	10–36 V DC	1 W	0.5 kg	–40...+55 °C	IP66	Wall

Built-in trackball TB–1–50

Model	Code	Supply voltage	Power consumption	Weight	Operating temperature	IP rating	Mounting
B1-50LF-CCTV-2003/1	ЦИУЛ.467219.201	5 VDC (from USB port)	1 W	0.15 kg	–15...+55 ºC	IP66 (front panel) IP20 (rear panel)	panel

The signal converters SC1–X
The signal converters transmit Ethernet signal by coaxial cable. When digital CCTV system is installed using existing coaxial cables. The units can be used only in receiver-transmitter combination — together with POE–SW–24 CCTV–2003/1.

Model	Code	Supply voltage	Power consumption	Line length	Weight	Operating temperature	IP rating	Mounting
Transmitter SC1-1	ЦИУЛ.468157.202	48 V POE	1 W	200 m	0.6 kg	–40...+55 ºC	IP56	wall
Receiver SC1-2	ЦИУЛ.468157.201	48 V POE	1 W	200 m	0.6 kg	–40...+55 ºC	IP56	wall

Camera lens wiper CW1–1
used with washer tank WT1-1-CCTV-2003/1.
A part of camera VC-DVS 22121–2003/7.

Model	Code	Supply voltage	Power consumption	Casing material	Washer material	Weight	Operating temperature	IP rating	Mounting
CW1–1	ЦИУЛ.456413.001	24 VDC	7 W	polyethylen	Stainless steel	0.7 kg	–40...+55 °C	IP66	bracket

Washer tank WT 1–1
used with the wiper CW1-1-CCTV-2003/1.
A part of camera VC-DVS 22121–2003/7.

Model	Code	Supply voltage	Power consumption	Max. volume	Hose length	Casing material	Weight	Operating temperature	IP rating	Mounting
WT1–1	ЦИУЛ.321639.001–01	19–36 VDC	30 W	5 l	5 m	polyethylen	3.8 kg	–40...+55 °C	IP66	wall

Active microphone MC–1122
Connected to the video camera..

Model	Code	Supply voltage	Power consumption	Acoustic coverage area	Weight	Operating temperature	IP rating	Mounting
MC–1122	ЦИУЛ.467276.201	12 V (from camera)	0.5 W	7 m	0.5 kg	–40...+55 °C	IP66	wall

Junction box
distributes power from supply units to the system units.

Model	Code	Inputs	Outputs	Switching interfaces	Power filter	Operating temperature	IP rating	Weight
JB–2 (JB–2 CCTV–2003/2)	ЦИУЛ.469436.207–01	1	2	RS–485 / 24 V power	–	–40...+55 °C	IP56	0.95 kg
JB–6 (JB–6 CCTV–2003/3)	ЦИУЛ.469436.208–01	1	6	RS–485 / 24 V power	–	–40...+55 °C	IP56	1.82 kg
JB–124BF (JB–124BF CCTV–2003/1)	ЦИУЛ.469436.209	1	9	24 V power	yes	–40...+55 °C	IP56	1.95 kg
JB–124B (JB–124B CCTV–2003/1)	ЦИУЛ.469436.209–01	1	9	24 V power	–	–40...+55 °C	IP56	1.62 kg

PoE injector / repeater POE-JCT
splits Ethernet line into 4 outputs and provides power supply from PoE network. Used to expand range of Ethernet for 100 m.

Model	Code	Supply voltage	Ports	Weight	Operating temperature	IP rating	Mounting
POE-JCT	ЦИУЛ.468119.201	24 V DC	1 × input port; 4 × output port 10/100Base–TX	2.17 kg	–40...+55 °C	IP56	Wall

HOSPITAL AND REFRIGERATOR ALARM SYSTEM SCS–1002 ЦИУЛ.425511.001

Approved
by the Russian Maritime
Register of Shipping

INTENDED USE

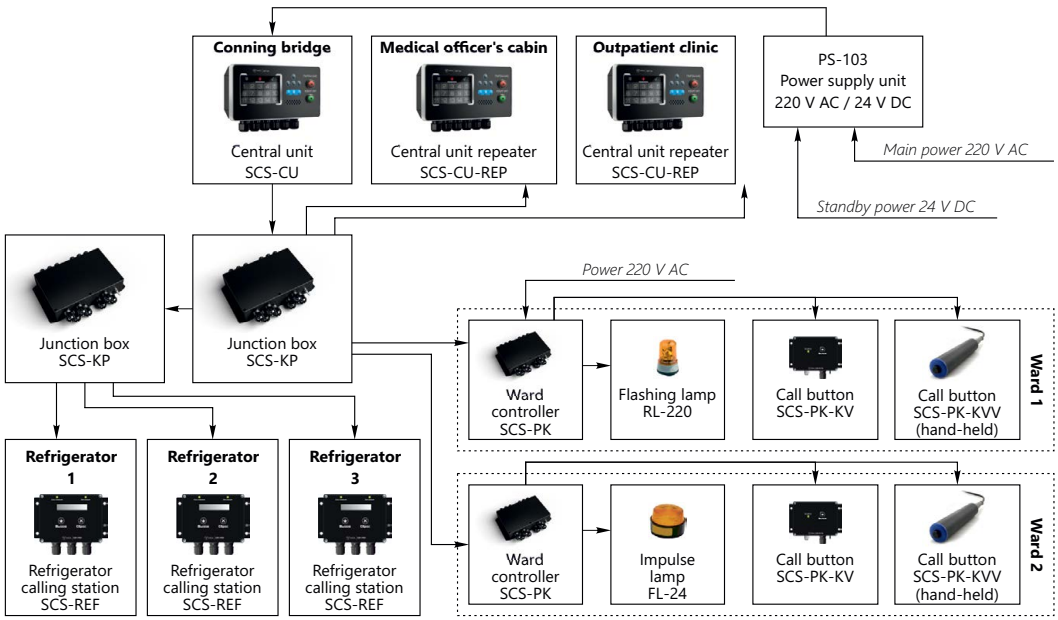
The system is designed for application on sea and river-going ships.
It supplies in-call signals to watch officer station from the button controllers located in refrigerator machines rooms, ship's hospital and other areas where restricted mobility or life threat occur.
The System can be used for other purposes that require remote alarm signals.

SYSTEM FEATURES

Functionality

- Immediate call signaling from the remote calling station with display of the station name
- Call alarm is repeated on the duplicate device
- 32 remote stations can be connected to reception and control device (max.128) via data exchange network RS–485 or 4–20 mA
- Reception and control device can display status of 1/5/10 or 32 (out of 128) remote stations at the same time
- Sound signaling can be muted from the control or duplicate device
- Call alarm can be reset from the call site or reception and control device
- Connection with remote button controllers can be displayed on the reception and control device and duplicate device
- Warning signal is supplied in case of signal circuit failure
- 24/7 operation

STRUCTURAL DIAGRAM



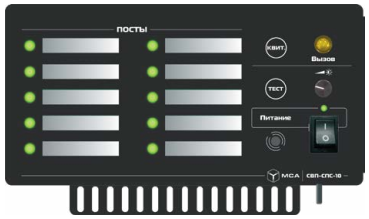
Reception and control devices
Provides sound and light signaling to inform the operator about alert buttons actuation and the site of the supplied signal.

- External signaling devices can be connected
- Indication of remote units status (except CS-PW)
- Control of system power supply (except CS-PW)
- Temporary mute of call signaling
- Brightness control

Model	Code	Controlled	Input voltage	Power consumption	Type of connected units	Display of calling station	IP rating	Operating temperature	Mounting	Notes
CS-CU –PM	ЦИУЛ.468382.001	32	⎓ 24 V	5 W	RS–485	LCD	IP22	–15...+55 °C	panel	Central station
	ЦИУЛ.468382.001–001	32	⎓ 24 V	5 W	RS–485	LCD	IP56	–40...+55 °C	panel	Central station
CS-CU –WM	ЦИУЛ.468382.001–003	32	⎓ 24 V	5 W	RS–485	LCD	IP22	–15...+55 °C	wall	Central station
	ЦИУЛ.468382.001–004	32	⎓ 24 V	5 W	RS–485	LCD	IP56	–40...+55 °C	wall	Central station
SCS-SPS-5	ЦИУЛ.468382.002	5	⎓ 24 V	15 W	RS–485 or 4–wire line	LED	IP22	–15...+55 °C	panel, wall	Ship alarm station
	ЦИУЛ.468382.002–01	5	⎓ 24 V	15 W	RS–485 or 4–wire line	LED	IP56	–40...+55 °C	panel, wall	Ship alarm station
SCS-SPS-10	ЦИУЛ.468382.003	10	⎓ 24 V	15 W	RS–485 or 4–wire line	LED	IP22	–15...+55 °C	panel, wall	Ship alarm station
CS-PW	ЦИУЛ.468382.004	1	⎓ 24 V	1 W	4–wire line	–	IP56	–40...+55 °C	wall	Watch post

CS-CU

SCS-SPS-10



CS-PW

Repeater

Repeats call signaling on the reserve station and displays station number on the LCD.

- Connection of external signaling unit
- Temporary mute of call signaling

Model	Code	Controlled tations	Input voltage	Power consumption	Type of connected stations	Display of call station number	IP rating	Operating temperature	Mounting
CS-CU-REP –PM	ЦИУЛ.468382.001–002	32	⎓ 24 V	5 W	RS–485	LCD	IP22	–15...+55 °C	panel
CS-CU-REP –WM	ЦИУЛ.468382.001–005	32	⎓ 24 V	5 W					wall

Remote calling stations

Repeats and sends call signals on the reserve station.

- onnection of external signaling unit

CS-PK

CS-REF

Model	Code	External buttons	Input voltage	Power consumption	Connection Reception and control devices	IP rating	Operating temperature	Mounting	Functionality
CS-PK	ЦИУЛ.468382.005	2	⎓ 24 V	2 W	RS–485	IP22	–15...+55 °C	wall	repeat
CS-REF	ЦИУЛ.468382.006	0	⎓ 24 V	2 W	RS–485	IP56	–55...+55 °C	wall	send signal

Junction boxes

Model	Code	Number of		Network	Rated current		Switching voltage	IP rating	Operating temperature	Mounting
		inputs	Outputs		Supply circuits	Sign circuits aling				
SCS-KP-2	ЦИУЛ.469436.007	1	2	RS–485	10 A	2 A	250 V	IP56	–40...+55 °C	wall
SCS-KP-6	ЦИУЛ.469436.008	1	6	RS–485	15 A	2 A	250 V	IP22	–15...+55 °C	wall
SCS-KP-6	ЦИУЛ.469436.008–01	1	6	RS–485	15 A	2 A	250 V	IP56	–40...+55 °C	wall

Call buttons

Name	Code	Functionality	Input voltage/ Swicthing current	Connection Of external button	Connection of external alarm	IP rating	Operating temperature	Mounting
CS-PK-KV	ЦИУЛ.468382.007	Call button. Connector for SCS-PK-KVV button	–	–	–	IP22	–15...+55 °C	wall
	ЦИУЛ.468382.007–01		–	–	–	IP22	–15...+55 °C	panel, wall
CS-PK-KV –Ex	ЦИУЛ.468382.100	Call button	–	–	–	IP66	–15...+55 °C	wall
SCS-PK-KVV	ЦИУЛ.468312.002	Call button	–	–	–	IP56	–40...+55 °C	hand-held
CS-KVS	ЦИУЛ.468382.010	Power call button	~220 V, 50 Hz/ 10 A	–	+	IP56	–40...+55 °C	panel, wall
	ЦИУЛ.468382.010 –01	Power call button	⎓ 24 V/ 10 A	–	+	IP56	–40...+55 °C	panel, wall
	ЦИУЛ.468382.010–02	Power call button Call signal	~220 V, 50 Hz/ 3 A	–	+	IP56	–40...+55 °C	panel, wall
SCS-KVT	ЦИУЛ.468382.008	Heatproof call button	–	4– wire line	–	IP56	–40...+125 °C	wall
CS-PV-SB	ЦИУЛ.468382.009	Call and reset button	–	4– wire line	+	IP56	–40...+55 °C	wall
CS-PK-KS	ЦИУЛ.468382.011	Reset button	–	–	+	IP22	–15...+55 °C	wall

SCS-PK-KVV

CS-PK-KV, SCS-KVT, CS-KVS

CS-PK-KS

ANTENNA HEATING SYSTEM AHS–1022 ЦИУЛ.681872.001

INTENDED USE

Automatic heating of antennas exposed on open deck using antenna heating unit (AHU) — an insulated radome with built-in (inside) heaters and temperature sensors.

Temperature settings and control inside each radome are carried out by multipurpose digital repeater DR-209M with digital interface RS-422 (max. 3 units. DR-209M can be mounted directly into the control switchboard or have other locations (desk-top / flush mounting).

Control switchboard of antenna heating system (CSAHS) and additional junction boxes KP-124PW ebsure main / standby power switching.

To connect more than 3 heating units to one repeater DR-209M, use multichannel transceiver MT-158 (ensures connection of max. 7 heating units). Therefore, the System can provide heating of 21 antennas in total.

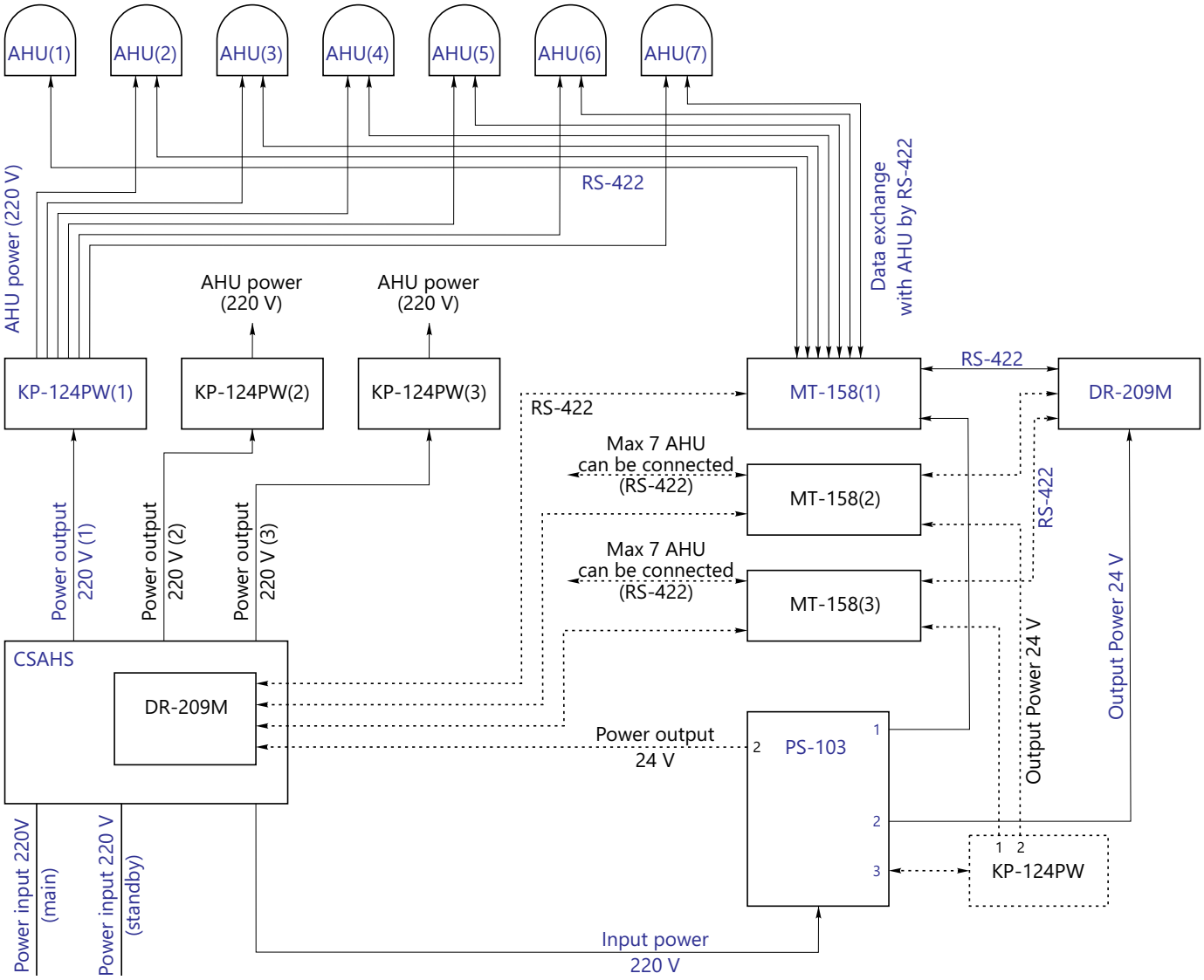
SYSTEM FEATURES

- Control, settings and status of each heating unit are displayed on DR-209M with touch screen
- Two feeders 220 V ensure high reliability of the system power supply; excess power of two independent heaters provides for uninterruptible heating of each antenna. Two sensors allow for temperature monitoring inside the radome
- Small size of units and open architecture allow for expanding the system at any design stage
- Testing of AHU operation can be provided manually and automatically (on schedule or during operation)
- Heating of up to 21 antennas

MAIN SPECIFICATIONS

Main/ standby supply voltage	220 V±10%, 50/60 Hz
Operating temperature for units mounted on open deck	–52...+55 °C
IP rating for units mounted on open deck	IP56

STRUCTURAL DIAGRAM



Location of DR-209M depends on order.

Number of multichannel transceivers MT-158 depends on number of antennas (max. 7 heating units per multichannel transceiver, max. 21 heating units per 3 multichannel transceivers).

If more than 3 consumers are connected to PS-103, one output is connected to junction box KP-124PW.

Antenna heating unit

Model	Code	Radome	Operating voltage	Power Consumption	Dimensions, Ø×H or L×W×H	Weight	IP rating	Operating temperature	Mounting
AHS–1	ЦИУЛ.363614.001	+	~ 220 V, 50 Hz	400 W	370×440.4 mm	7.4 kg	IP56	–52...+60 °C	deck, on the foundation
AHS–1	ЦИУЛ.363614.001–03	–	~ 220 V, 50 Hz	400 W	277.0×218.0×195.0 mm	6.0 kg	–	–52...+60 °C	
AHS–2	ЦИУЛ.363614.001–01	+	~ 220 V, 50 Hz	600 W	700×770.4 mm	11.4 kg	IP56	–52...+60 °C	
AHS–2	ЦИУЛ.363614.001–04	–	~ 220 V, 50 Hz	600 W	422.0×260.2×333.0 mm	9.3 kg	–	–52...+60 °C	
AHS–3	ЦИУЛ.363614.001–02	+	~ 220 V, 50 Hz	1000 W	1133.1×1238.1 mm	22.8 kg	IP56	–52...+60 °C	
AHS–3	ЦИУЛ.363614.001–05	–	~ 220 V, 50 Hz	1000 W	462.0×428.0×299.7 mm	17.2 kg	–	–52...+60 °C	

AHS –1

AHS –2

AHS –3

Control board CSAHS

Model	Code	Operating voltage	Power consumptionn	Repeater	Dimensions, L×W×H	Weight	IP rating	Operating temperature	Mounting
CSAHS	ЦИУЛ.565112.001	~ 220 V, 50 Hz	25 W	+	380×190×517 mm	17.8 kg	IP22	–15...+55 °C	wall
	ЦИУЛ.565112.001–01	~ 220 V, 50 Hz	5 W	–	380×190×517 mm	16.6 kg	IP56	–15...+55 °C	wall

Multipurpose digital repeater DR–209M

Model	Code	Operating voltage	Power consumptionn	Dimensions, L×W×H	Weight	IP rating	Operating temperature	Mounting
DR–209M	ЦИУЛ.467846.009	⎓ 24 V	20 W	160.0×208.0×69.3 mm	1.6 kg	IP22	–15...+55 °C	wall/ panel

MULTIPURPOSE INTEGRATED WORKSTATION YKRM–1

INTENDED USE

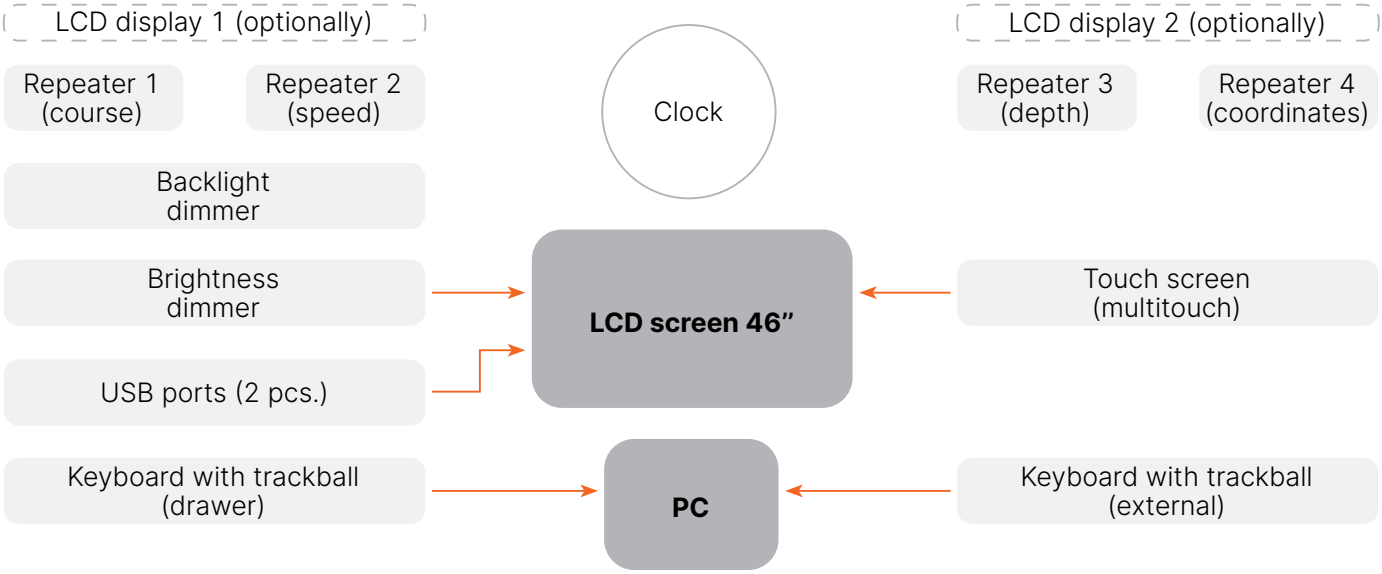
State-of-the-art workstation with a wide range of functionalities

- Dispatching station
- VTMS operator station
- Navigator station
- Emergency assessment station, management and forecasting
- Training station
- Control station, e.g. for unmanned aircraft, vessels
- Chart table

SYSTEM FEATURES

- Convenient and ergonomic combination of the controls and data display elements
- Built-in touch LCD with brightness dimming and sensor disable button
- Two standard reliable keyboards with trackballs
- Drawers for paper maps, books, manuals and navigational instruments within reach
- Two versions: ”standing” or ”sitting”, customized solutions
- Options:
  – specialized controls;
  – various PC configurations

STRUCTURAL DIAGRAM



PROPULSION-STEERING COLUMN CONTROL SYSTEM SURK–1005 ЦИУЛ.421455.002

INTENDED USE

SURK-1005 is designed to control propulsion-steering columns (starboard and port) and display propulsion and steering data on the control consoles and external ship systems. SURK-1005 ensures full control over azimuthal drives of column rotation, hydraulic and electric types, lubrication system, interfacing with frequency converters and other propulsion units (electromagnetic brake, tachometer, etc.)

Three types of SURK-1005 control:

- local – from front panel of LSU switchboard
- remote – from one of remote control stations RCS
- automatic – using autopilot (underway), dynamic positioning system (DP) and/or Joystick System

SURK-1005 is designed according to modular design principle with dual redundancy based on state-of-the-art microcontrollers (performance 180 mln flops). The number of internal modules can be changed to increase input or output signals from sensors, propulsion units and external ship systems. The system's reconfiguration allows for solving a wide variety of tasks.

SYSTEM FEATURES

- Operates with any external ship systems: electrical power system (EPS), integrated control system for technical facilities (ICS TF), alarm warning system (AWS), VDR, conning display, etc.
- Modular design principle with dual redundancy
- Supported interfaces: RS-422/485 (Modbus, Profibus, NMEA), 4...20 mA, dry contact relays.
- High-performance state-of-the-art processors
- Customizable displays and main screen controls
- Software testing
- Non-volatile alarm and error history
- Uninterruptible PSU provides autonomous power up to 30 minutes
- Combined, separate and portable versions of remote control stations
- Ergonomic lever to control speed and column rotation angle
- Compliant with RMRS regulations
- IP rating – IP44

INTERFACE DISPLAY

Local control panel of the local switchboard is equipped with 8” resistive touch screen produced by NPK MCA, pointer indicators of main propulsion motor rpm and load, and electronic indicator of propulsion column rotation angle.

Remote control stations are equipped with touch screens. The main screen displays all necessary data to monitor steering column and main propulsion system status: operating parameters of the control system, electric system, main propulsion motor and azimuthal rotation system. Menu items, their name and number can be customized on request.

Additional screens allows for in depth testing of the steering column status and connected systems.

SYSTEM COMPONENTS

- Local control switchboard 1005-LSU
- Uninterruptible PSU UPS-214-24
- Switching unit
- Remote control station:
  – control panel
  – display unit TSD–8
  – rotation and speed control unit LAT-219
- Portable control station 1005-RSCP

SCL–225

Remote control station (max. 16 stations)

Combined remote control station

Separate remote control station

External ship systems

Local control switchboard 1005-LSU

Sensors, lubrication system, azimuthal rotation system

Switching unit

PSU with a built-in storage battery

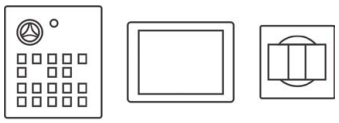
Electric drive of propulsion-steering column (electric motor and frequency converter)

Portable remote control station 1005-RSCP

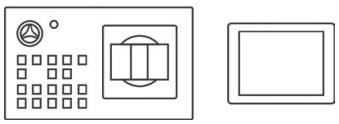
Propulsion-steering columns

LAYOUTS OF REMOTE CONTROL STATIONS

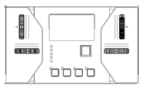
separate



combined



portable



Go to table of contents

THRUSTER CONTROL SYSTEM KRPU–1011 ЦИУЛ.421455.001

SYSTEM DESCRIPTION

Thruster control system KRPU-1011 controls the thruster, direction and speed of propeller rotation (by sending control signals to frequency converter), and all thruster units (frequency converter, electric motor, lubrication system, etc.).

Three types of control:
- Local – using control panel of the local switchboard;
- Remote – using one of remote control stations RCS;
- Automatic – by dynamic positioning system and/or Joystick System.

Local control panel of switchboard LS is equipped with 8” resistive touch screen, produced by NPK MCA, and duplicating pointer indicators and controls.

Microcontrollers of KRPU-1011 are based on state-of-the-art processor with performance 180 mln flops. The system is created according to modular design principle with modular dual redundancy. The number of internal modules can be changed to increase input or output signals from thruster sensors and external ship systems.

Approved by the Russian Maritime Register of Shipping

SYSTEM FEATURES

- Modular design with dual redundancy and wide range of expansion options
- Supported interfaces: RS–422/485 (Modbus, Profibus, NMEA), 4...20 mA, dry contacts
- Operates with dynamic positioning system and other ship systems: VDR, electrical power system (EPS), integrated control system for technical facilities (ICS TF), alarm warning system (AWS), conning display, etc.
- State-of-the-art high-performance processor
- Uninterruptible PSU provides autonomous power up to 30 minutes
- Software testing
- Non-volatile error and alarm history
- Certificated by RMRS

Power supply unit with a built-in storage battery

Remote control stations RCS (max 16)

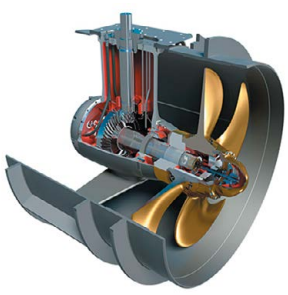
Local switchboard LS

Switching unit

External ship systems

Thruster sensor and lubrication system

Thruster electric drive (electric motor and frequency converter)



Tunnel thruster

SYSTEM COMPONENTS

- Local control switchboard LS, IP44
- Uninterruptible power supply BPS-114, IP44
- Switching unit SU, IP22
- Remote control station RCS, IP22

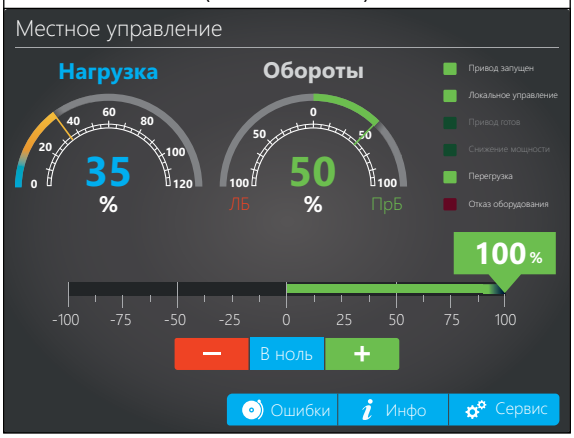
The main screen contains all necessary information:

- thruster status
- motor rpm and load
- type of control
- alarm and warning signals

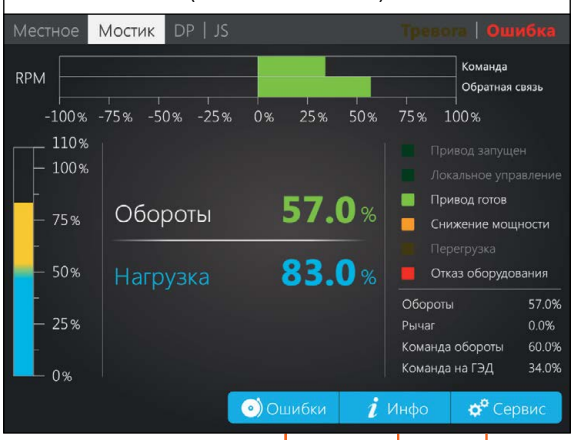
CONTROL PANEL OF SWITCHBOARD LS

Additional thruster controls appear on the screen in the local control mode. Additional menu sections allow for in depth testing of the thruster and connected systems status.

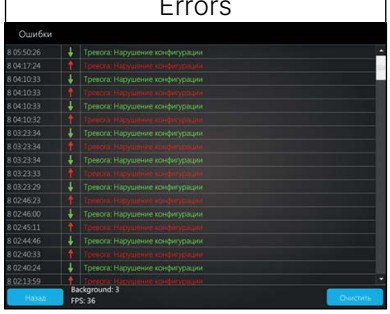
Main screen of the switchboard LS (local control)



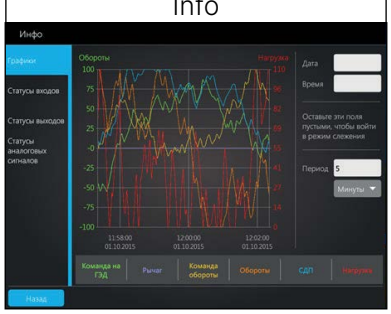
Main screen of the switchboard LS (remote control)



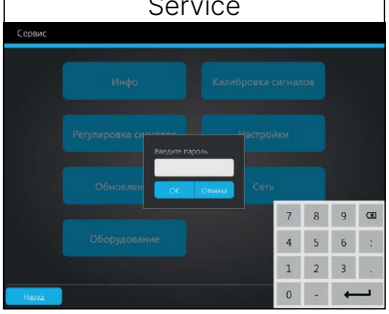
Errors



Info



Service



STEERING GEAR CONTROL SYSTEM KARM–1021 ЦИУЛ.421455.004

SYSTEM DESCRIPTION

Steering gear control system KARM-1021 is designed to control operation of one or two hydraulic steering gears from the local or remote control panels.
Each steering gear consists of two hydrostations.
The System has two main types of hydrostation control:

- automatic (digital steering control system),
- straight forward control..

Three types of control:

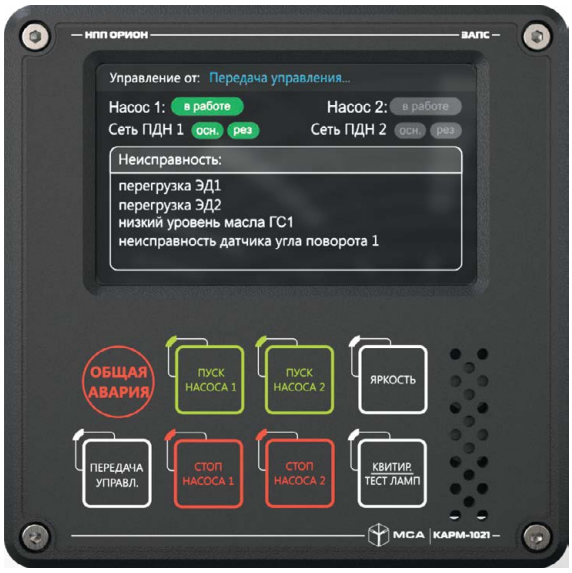
- Local – using local control panel LCP
- Remote – using remote control station RCS
- Automatic – by autopilot system

SYSTEM FEATURES

- Operates with any external ship system: autopilot, electrical power system (EPS), integrated control system for technical facilities (ICS TF), alarm warning system (AWS), VDR, conning display, etc.
- Modular design with dual redundancy
- Supported interfaces: RS–422/485 (Modbus, Profibus, NMEA),4...20 mA, dry contacts
- State-of-the-art high-performance processor
- Software testing
- Rotation angle is controlled from automatic steering wheel ASW
- Uninterruptible power supply unit, built in a switchboard PMA
- Complies with the Russian Maritime Register of Shipping Regulations
- IP rating – IP54

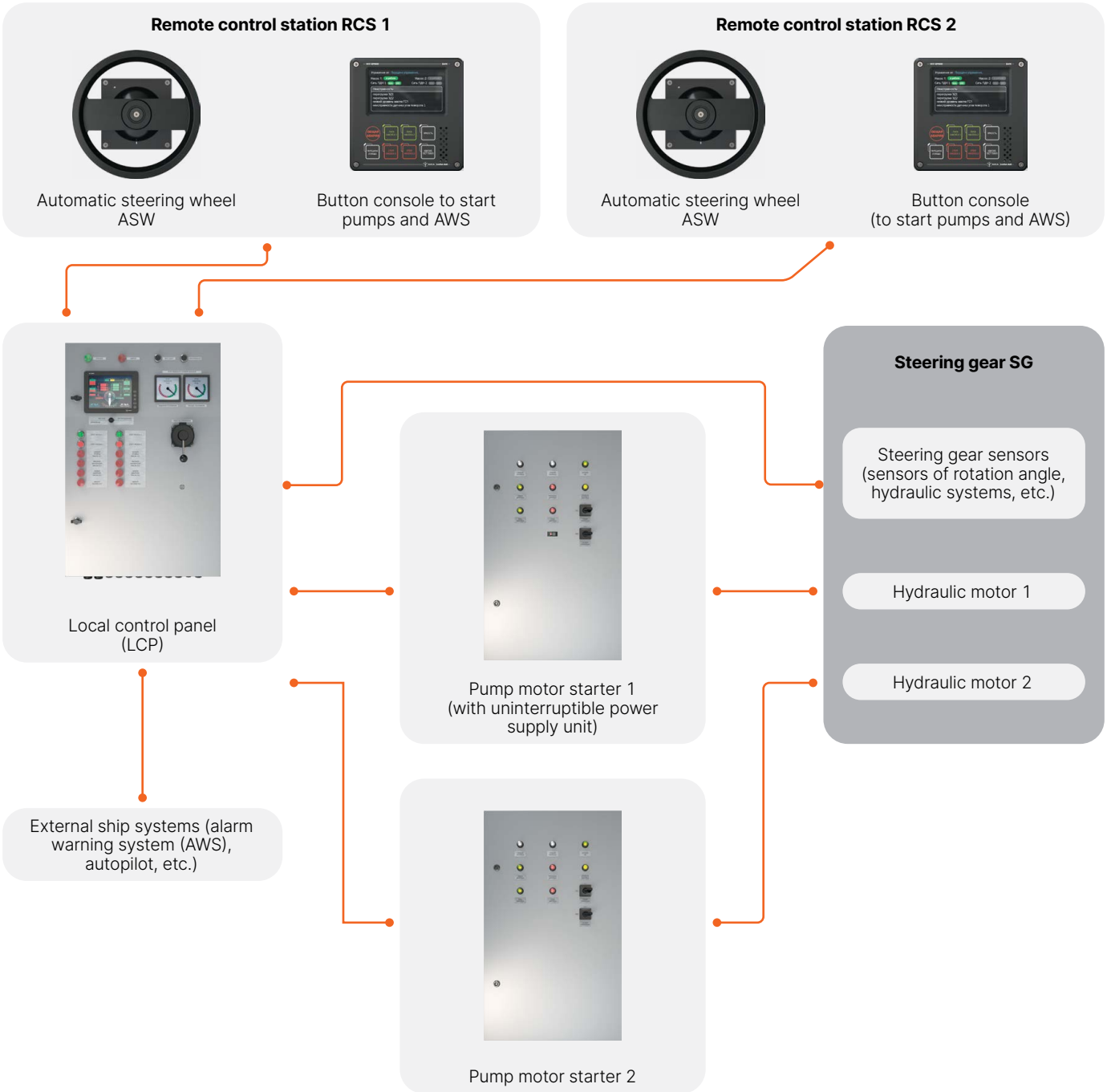
SYSTEM INTERFACE

Remote control stations are equipped with button console RCP (touch screen). RCP displays main steering gear data.



SYSTEM COMPONENTS

- Local control panel LCP
- Pump motor actuators PMA
- Remote control station RCS:
  – Automatic steering wheel ASW
  – Straight forward control lever SCL
  – Button console to start pumps and AWS
- Sensor of column rotation angle SRA



CONTROL SYSTEM OF PROPULSION EQUIPMENT CSPE-1205

SYSTEM DESCRIPTION

CSPE-1205 is a hardware and software system that controls the propulsion/steering unit based on a propeller or azimuth thruster and monitors the status of the units. .

CSPE-1205 enables control of:
- Frequency converter of electric steering engine (FC ESE is not included in CSPE-1205)
- FC of the electric steering engine (FC may be a part of CSPE-1205, engine power up to 1.5 kW, higher power values are on request)
- Thruster with power up to 20 kW
- Steering gear (slide valve or proportional valve)
- Peripheral systems (lubrication, cooling, etc.)

Operation modes:
- local — using local switchboard
- remote — from the control stations in the wheelhouse, at the stern, central control room, etc.
- straight forward (emergency) — control using buttons
- automatic — using levers and/or joysticks

It is possible to configure information exchange with third-party systems and transfer control to autopilot and dynamic positioning systems, as well as transmit and display the main data (e.g., engine speed, steering angle) to the on-board computer..

Modular design of the system enables to use optimal number of components for every project.

CSPE-1205 can include (depending on the vessel parameters and units):
- backbone components – Local control panel of switchboard
- remote station equipment LAT-219, SCL-225, RCS-P/Sb, RCS-C/CM
- power equipment Steering gear power panel SGPP, Thruster power panel TPP

The system may be outfitted with:
- sensors of column rotation angle SRA
- power supply units (e.g., PS-103 or PS-203 of required rated values)
- data conversion and distribution devices (e.g., MDU-102 or NC-217)
- interfaces and data converters (e.g., ADS-111)

CSPE-1205 has a type approval certificate issued by The Russian Classification Society (RCS).

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