

APPROVED

DIGITAL TALK-BACK SYSTEM ICB-131

Technical description

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INTRODUCTION

This operating manual describes the devices included in DIGITAL TALK-BACK SYSTEM ICB-131.

This document describes structure, operation, technical specifications of the products manufactured by «NPK MSA» LLC.

The products described in this document may be used as components of other systems produced by «NPK MSA» LLC.

TERMS AND ABBREVIATIONS

ATX	Automatic telephone exchange
CPAS	Command public address system
CU	Central unit
CUU	Central control unit
OM	Operating manual
PAC	Public address communication
PC	Personal computer
PCB	Printed circuit board
SC	System components
UU	User unit
VDR	Video data recorder
PTT	Push-to-talk

CENTRAL UNITS

CENTRAL UNIT CU-0131.6, CU-0131.12

Types

CU-0131.6	–	6 channels
CU-0131.12	–	12 channels

Description

Ensures switching among the connected users, subsequent establishing of communication channels to conduct talk-back communication.

Features:

ensures connection with external systems via external control ports (general alarm, ATX, CPAS, VDR).

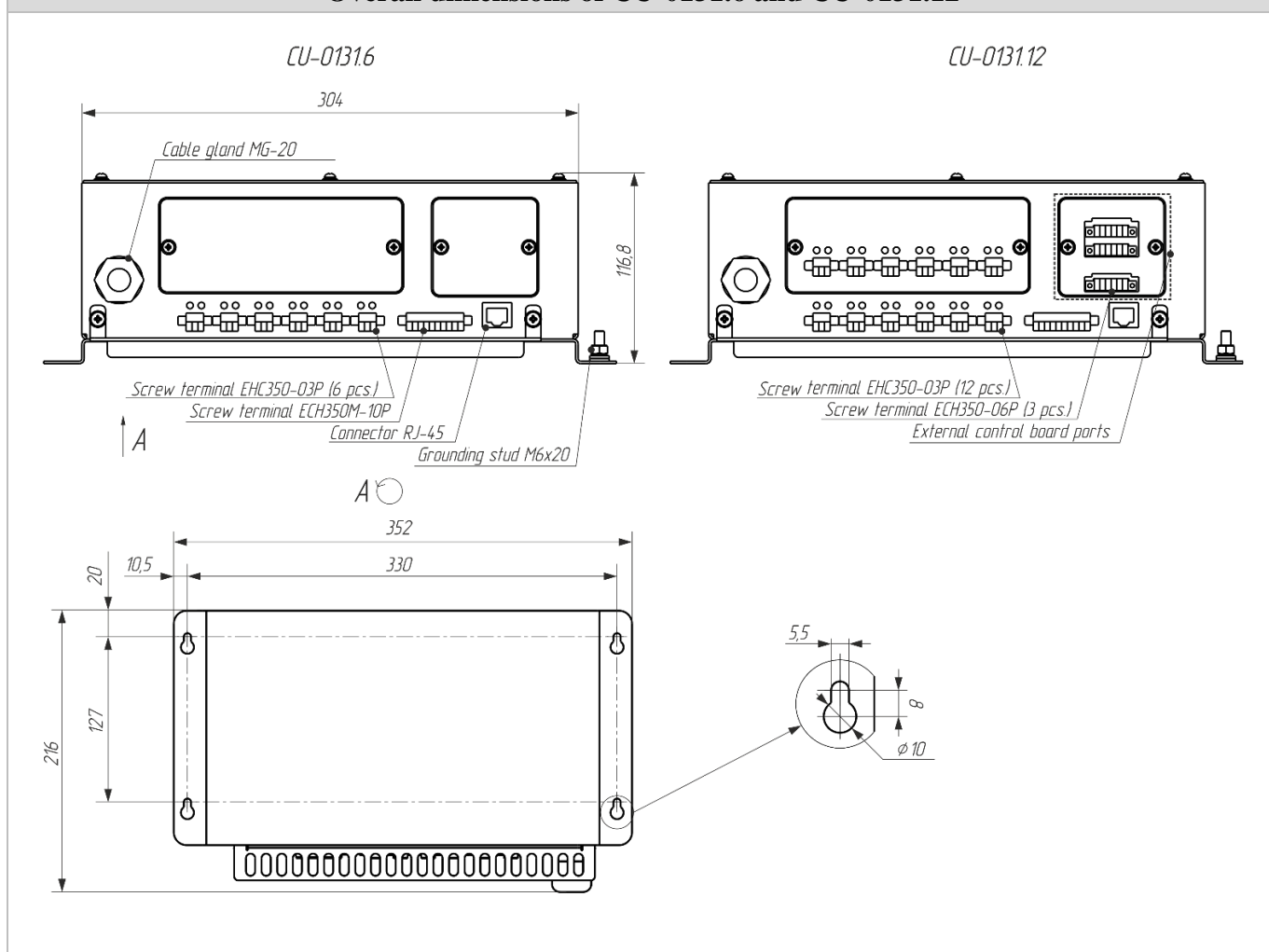
Technical specifications

Parameter	Value
Power supply voltage, V	24 DC
Max. power consumption, W	10
Operating temperature, °C	-15...+55
Limiting temperature, °C	-60...+70
Max. weight, kg	4
IP rating	IP22
Mounting	wall

Figure 1 describes example of external systems connection to CU.

Figure 2 describes example of SC connection to CU.

Overall dimensions of CU-0131.6 and CU-0131.12



CENTRAL UNIT CU-0131.18, CU-0131.24

Types

CU-0131.18	–	18 channels
CU-0131.24	–	24 channels

Description

Ensures switching among the connected users, subsequent establishing of communication channels to conduct talk-back communication.

Features:

ensures connection with external systems via external control ports (general alarm, ATX, CPAS, VDR).

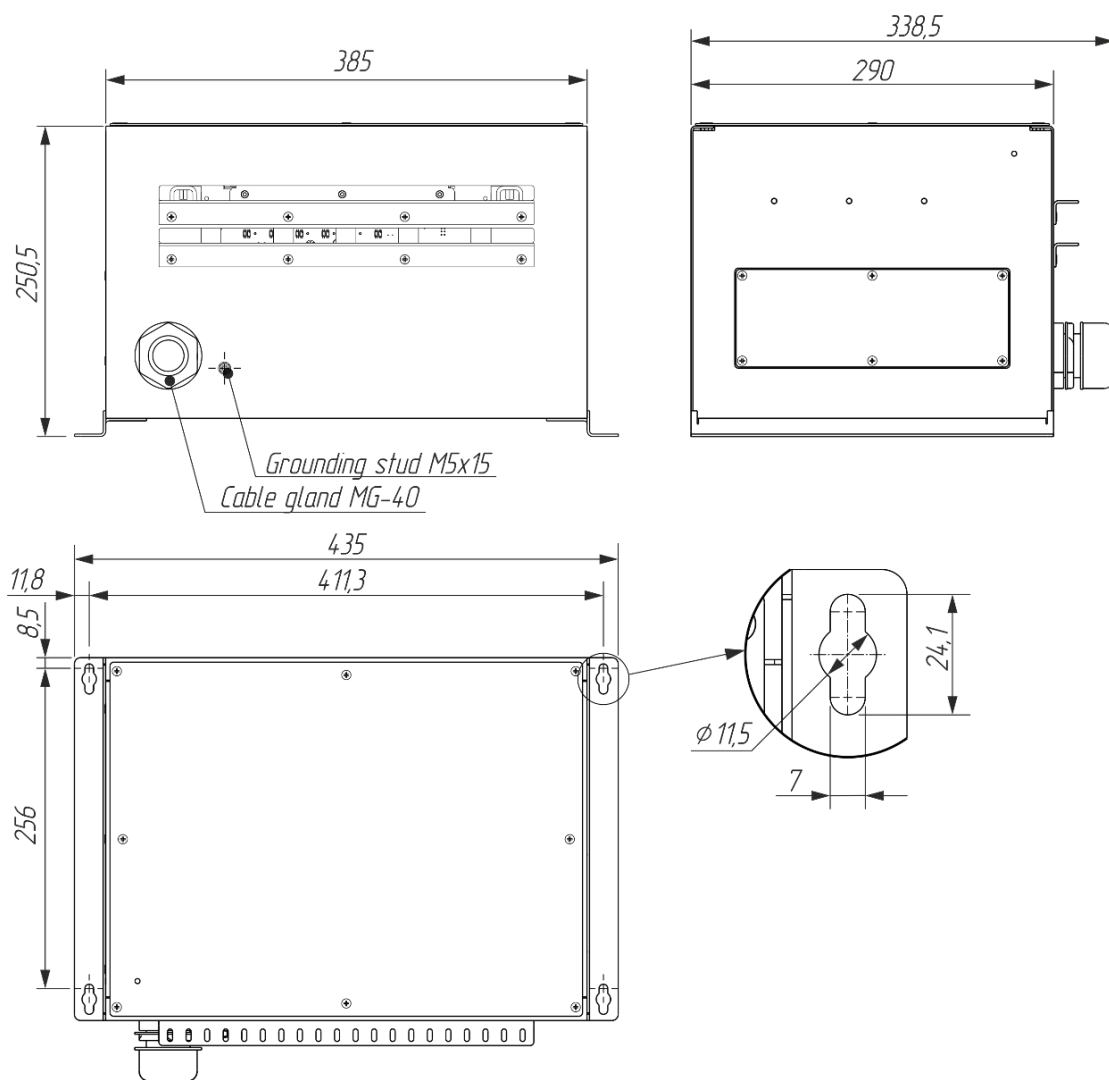
Technical specifications

Parameter	Value
Power supply voltage, V	24 DC
Max. power consumption, W	20
Operating temperature, °C	-15...+55
Limiting temperature, °C	-60...+70
Max. weight, kg	9
IP rating	IP22
Mounting	wall

Figure 1 describes example of external systems connection to CU.

Figure 2 describes example of SC connection to CU.

Overall dimensions of CU-0131.18 and CU-0131.24



CENTRAL UNIT CU-0131.30, CU-0131.36

Types

CU-0131.30	–	30 channels
CU-0131.36	–	36 channels

Description

Ensures switching among the connected users, subsequent establishing of communication channels to conduct talk-back communication.

Features:

ensures connection with external systems via external control ports (general alarm, ATX, CPAS, VDR).

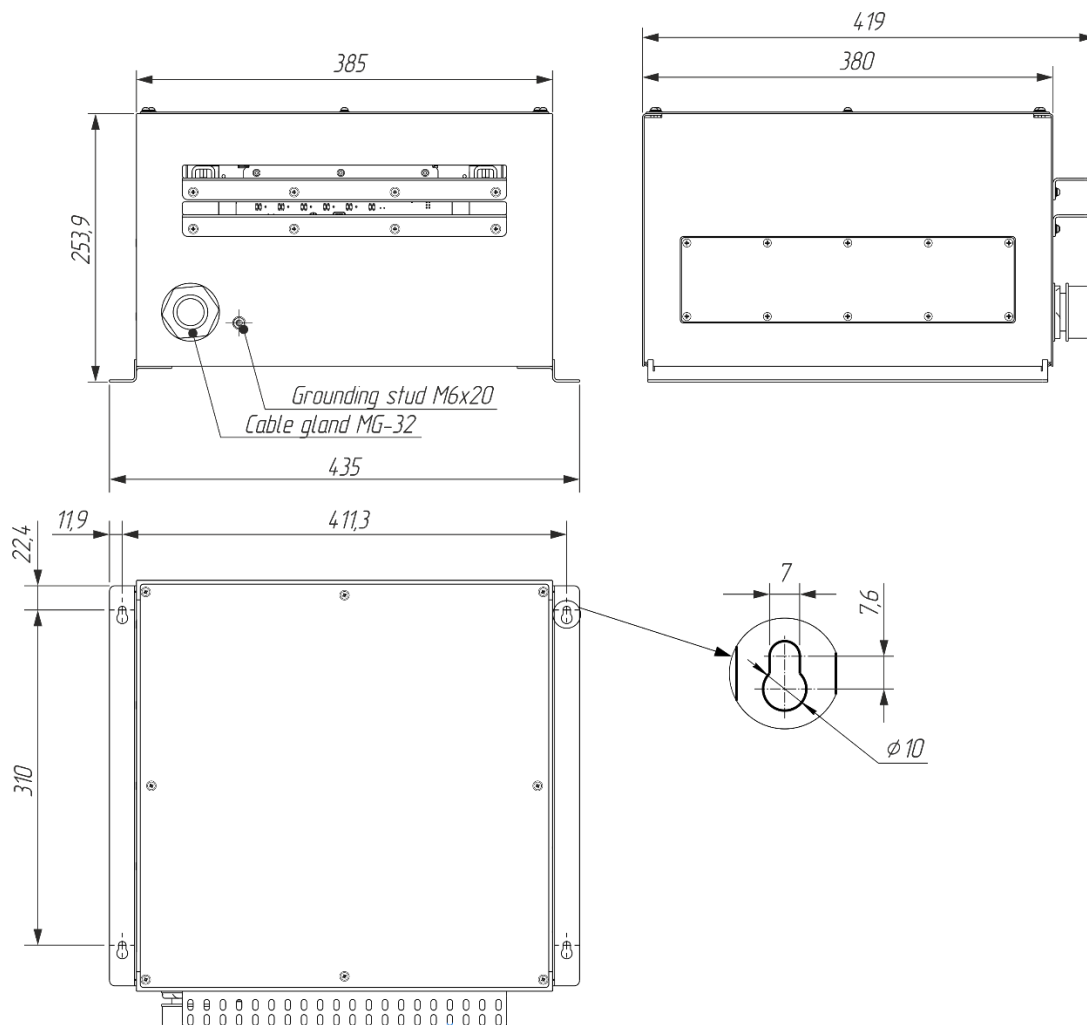
Technical specifications

Parameter	Value
Power supply voltage, V	24 DC
Max. power consumption, W	30
Operating temperature, °C	-15...+55
Limiting temperature, °C	-60...+70
Max. weight, kg	17,7
IP rating	IP22
Mounting	wall

Figure 1 describes example of external systems connection to CU.

Figure 2 describes example of SC connection to CU.

Overall dimensions of CU-0131.30 and CU-0131.36



CONNECTION DIAGRAMS OF EXTERNAL SYSTEMS TO CU

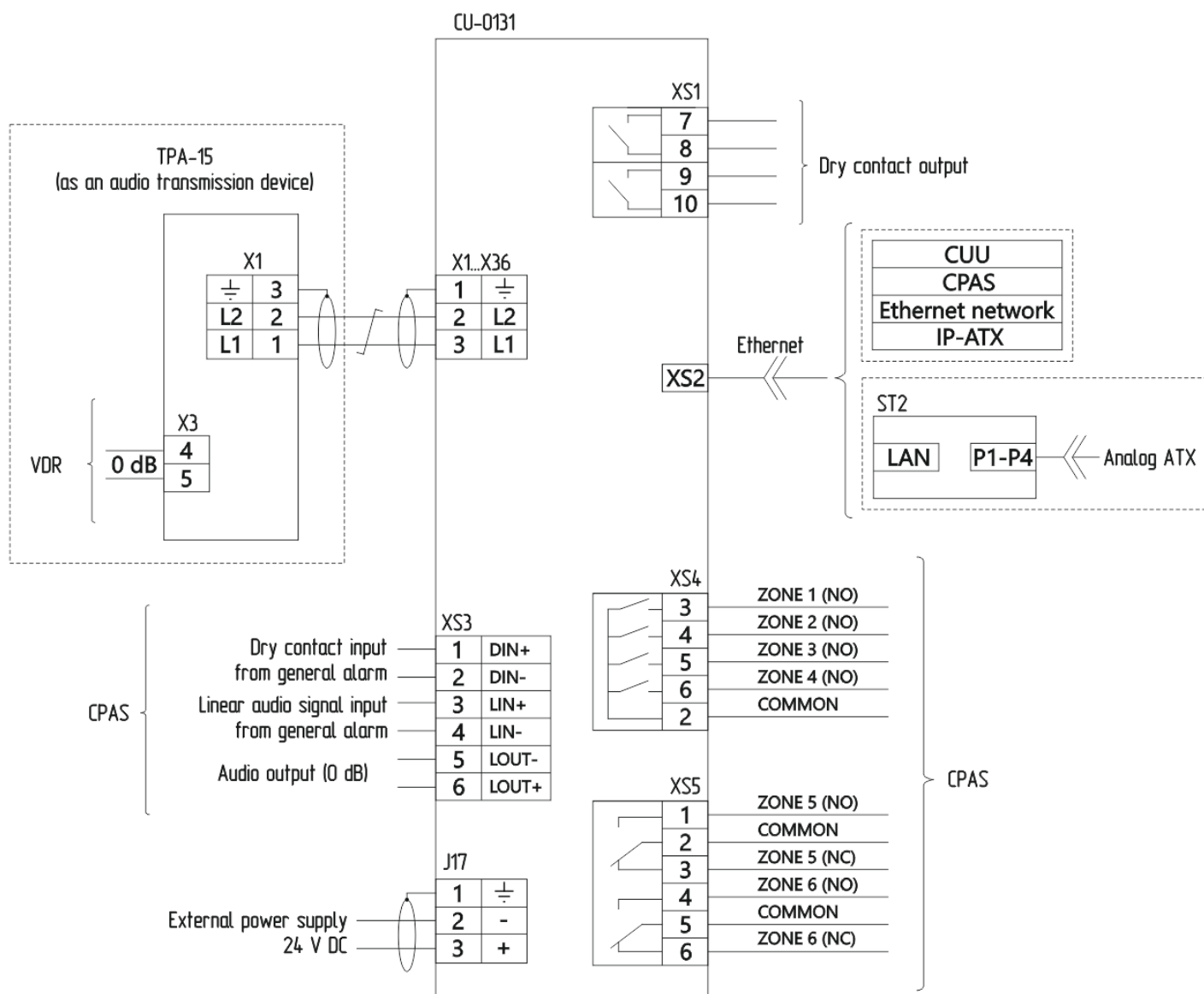


Figure 1 – Example of external systems connection to CU

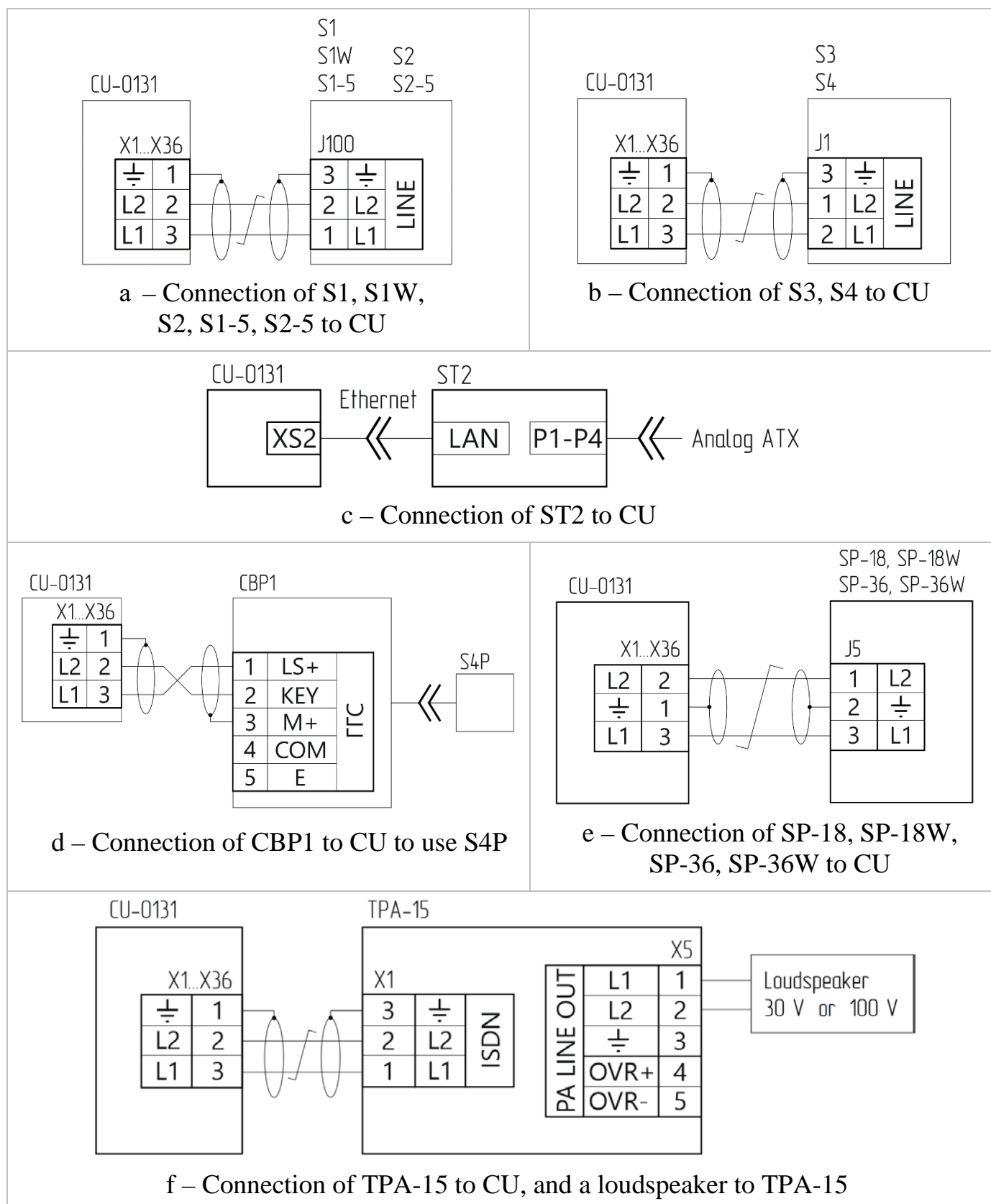


Figure 2 – Example of SC connections to CU

Note – Depending on UU, grounding may be marked on PCB as: «**E**», «**L**», «**⏏**» or «**⏏**».

SUBSTATION PANELS

SUBSTATION PANEL SP-18

Types

SP-18-WM	–	18 users
SP-18.12-WM	–	12 users
SP-18.6-WM	–	6 users

Description

Ensures a call and talk-back communication with other system users; max. 18 users.

Features:

- bridge wing substation, signaling units, foot switch, and external loudspeaker may be connected;
- light indication of calling user;
- connection of external microphone to receive voice communication;
- «general list» mode (initiator transmits commands to all UUs);
- call and communication with external ATX users (except type for 6 users);
- backlight and controls brightness dimming, volume control of built-in speaker.

Technical specifications

Parameter	Value
Power supply	from user line
Type of connection	ISDN line
Max. power consumption, W	10
Built-in speaker	+
Built-in microphone	-
Operating temperature, °C	-15...+55
Limiting temperature, °C	-60...+70
Weight, kg	1.5
IP rating	IP44
Mounting	wall

Peripheral equipment

- microphones M1 and M2;
- bridge wing substation SW-1;
- foot switch FB1;
- loudspeakers 30 V;
- signaling units.

Figure 3 describes example of SW-1 connection to substation panel.

Figure 2 describes example of SP-18 connection to CU.

Figure 4 describes layout of terminals; for the description of their assignment see Table 1.

Overall dimensions of SP-18-WM

248
18,5
211
4 holes $\varnothing 5,5$ Connector Lumberg KGV50
29
121
63
A
154,5
75,9
A(1:2)
B
Cable gland MG-16 (8 pcs.)
Grounding stud M4x15
While mounting, leave 100 mm free space from the surface B to connect the Product

Substation panel SP-18

Types

SP-18-TM	–	18 users
SP-18.12-TM	–	12 users
SP-18.6-TM	–	6 users

Description

Ensures a call and talk-back communication with other system users; max. 18 users.

Features:

- bridge wing substation, signaling units, foot switch, and external loudspeaker may be connected;
- «general list» mode (initiator transmits commands to all UUs);
- light indication of calling user;
- connection of external microphone to receive voice communication;
- call and communication with external ATX users (except type for 6 users);
- backlight and controls brightness dimming, volume control of built-in speaker.

Technical specifications

Parameter	Value
Power supply	from user line
Type of connection	ISDN line
Max. power consumption, W	10
Built-in speaker	+
Built-in microphone	-
Operating temperature, °C	-15...+55
Limiting temperature, °C	-60...+70
Weight, kg	1.9
IP rating	IP44
Mounting	on a bracket

Peripheral equipment

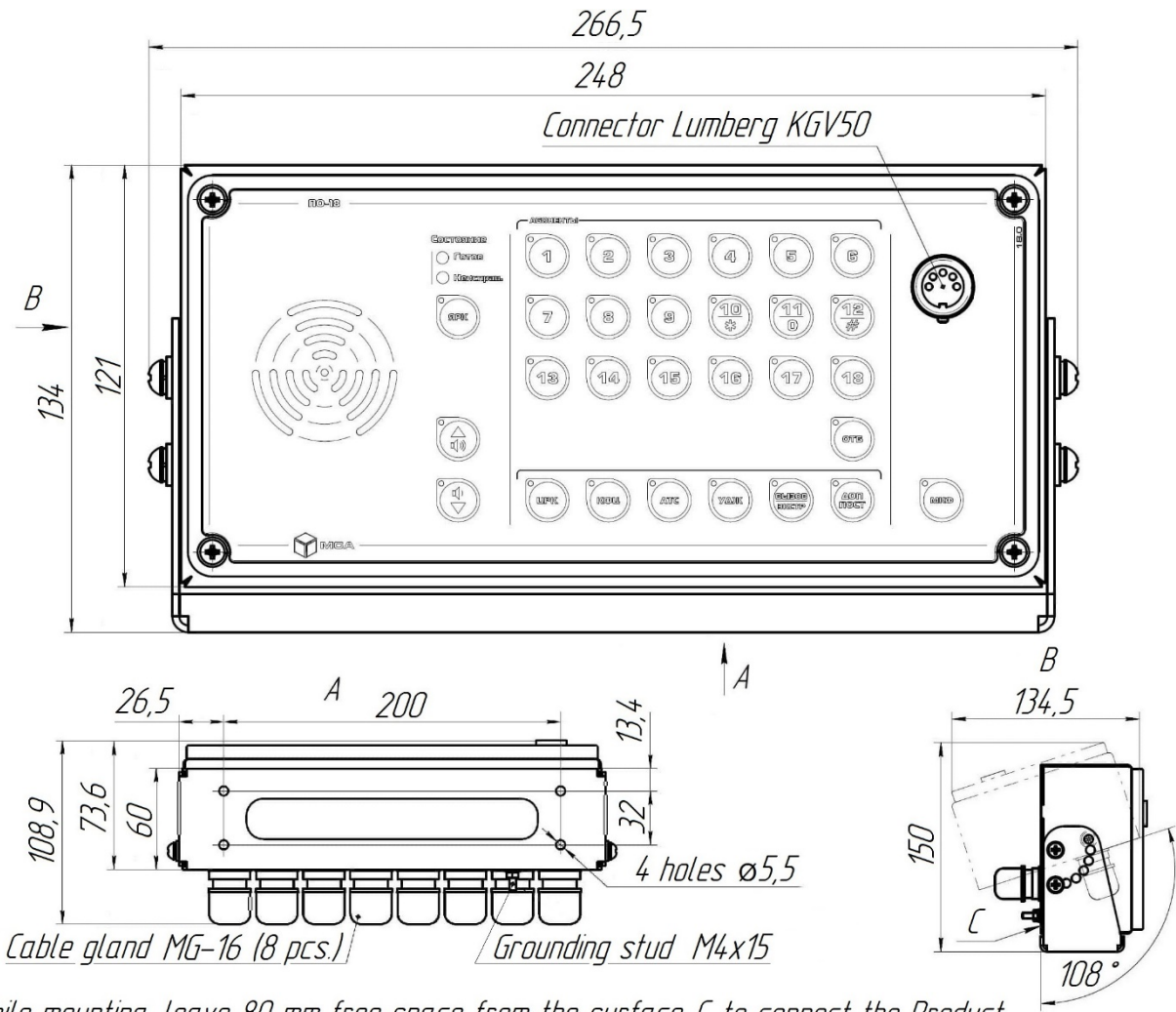
- microphones M1 and M2;
- bridge wing substation SW-1;
- foot switch FB1;
- loudspeakers 30 V;
- signaling units.

Figure 3 describes example of SW-1 connection to substation panel.

Figure 2 describes example of SP-18 connection to CU.

Figure 4 describes layout of terminals; for the description of their assignment see Table 1.

Overall dimensions of SP-18-TM



SUBSTATION PANEL SP-18

Types

SP-18-PM	–	18 users
SP-18.12-PM	–	12 users
SP-18.6-PM	–	6 users

Description

Ensures a call and talk-back communication with other system users; max. 18 users.

Features:

- bridge wing substation, signaling units, foot switch, and external loudspeaker may be connected;
- «general list» mode (initiator transmits commands to all UUs);
- light indication of calling user;
- connection of external microphone to receive voice communication;
- call and communication with external ATX users (except type for 6 users);
- backlight and controls brightness dimming, volume control of built-in speaker.

Technical specifications

Parameter	Value
Power supply	from user line
Type of connection	ISDN line
Max. power consumption, W	10
Built-in speaker	+
Built-in microphone	-
Operating temperature, °C	-15...+55
Limiting temperature, °C	-60...+70
Weight, kg	0.8
IP rating	IP44
Mounting	panel

Peripheral equipment

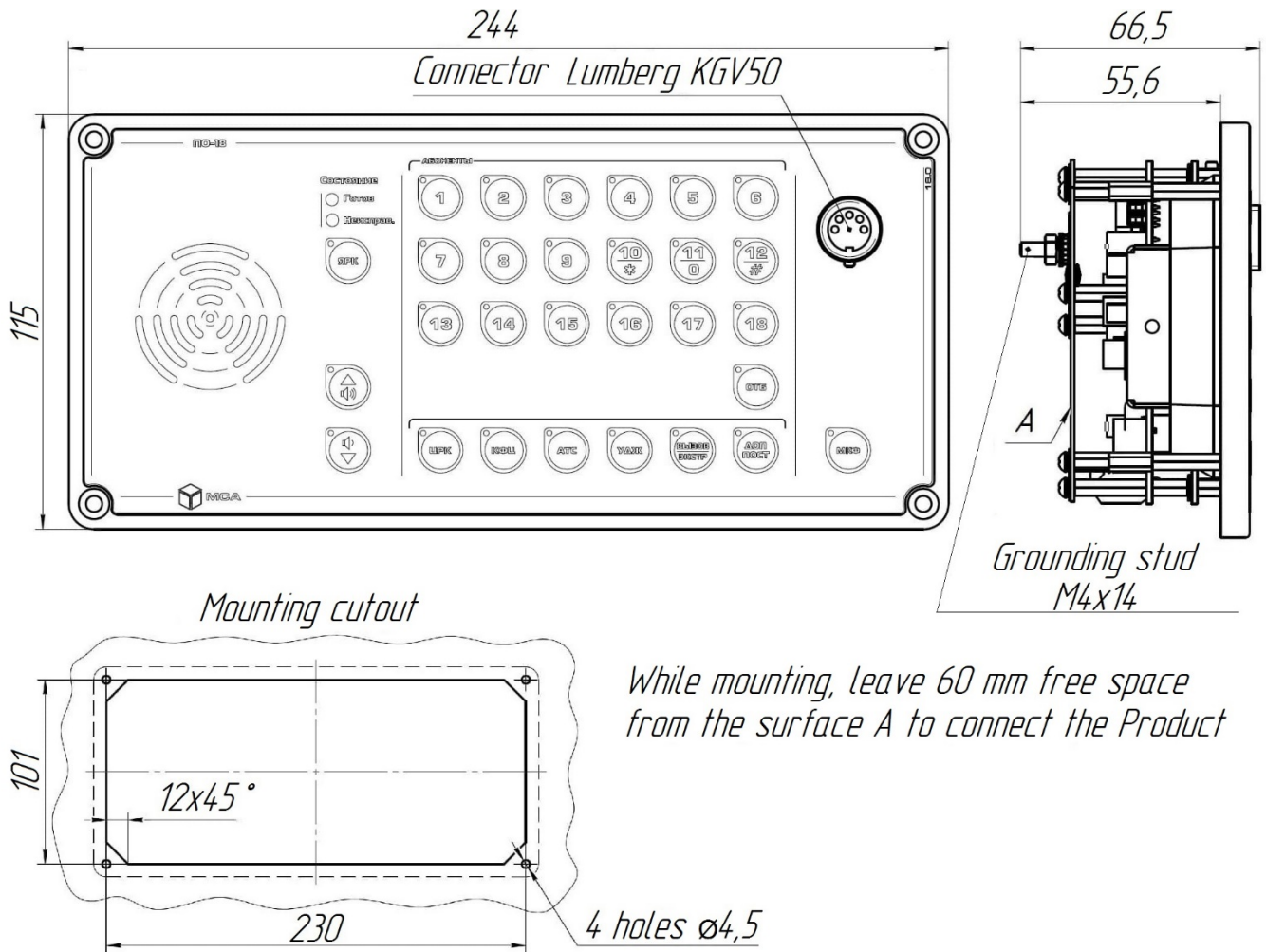
- microphones M1 and M2;
- bridge wing substation SW-1;
- foot switch FB1;
- loudspeakers 30 V;
- signaling units.

Figure 3 describes example of SW-1 connection to substation panel.

Figure 2 describes example of SP-18 connection to CU.

Figure 4 describes layout of terminals; for the description of their assignment see Table 1.

Overall dimensions of SP-18-PM



SUBSTATION PANEL SP-18W

Types

SP-18W	–	18 users
SP-18.12W	–	12 users
SP-18.6W	–	6 users

Description

Ensures a call and talk-back communication with other system users; max. 18 users.

Features:

- bridge wing substation, signaling units, foot switch, and external loudspeaker may be connected;
- «general list» mode (initiator transmits commands to all UUs);
- light indication of calling user;
- connection of external microphone to receive voice communication;
- call and communication with external ATX users (except type for 6 users);
- backlight and controls brightness dimming, volume control of built-in speaker;
- waterproof;
- waterproof connector for external communication device.

Technical specifications

Parameter	Value
Power supply	from user line
Type of connection	ISDN line
Max. power consumption, W	10
Built-in speaker	+
Built-in microphone	-
Operating temperature, °C	-15...+55
Limiting temperature, °C	-60...+70
Weight, kg	2.2
IP rating	IP56
Mounting	wall

Peripheral equipment

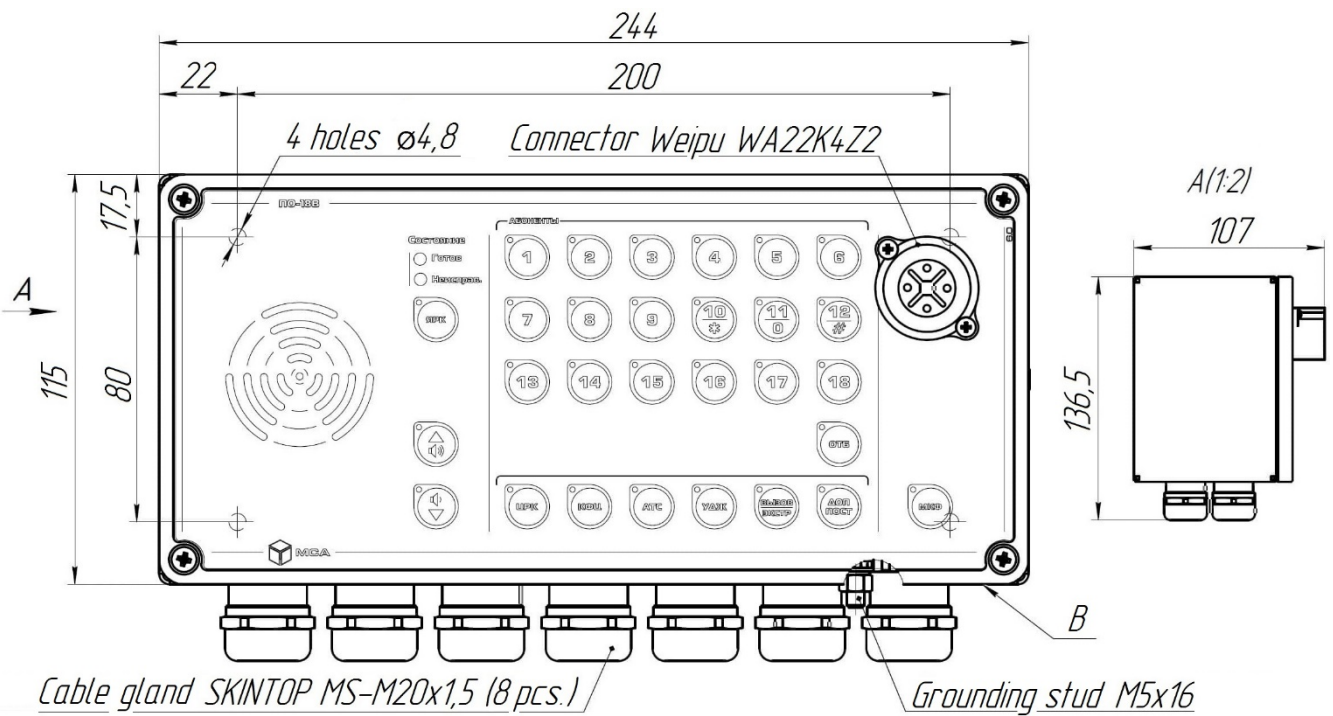
- microphones M3-W and M3-10W;
- bridge wing substation SW-1;
- foot switch FB1;
- loudspeakers 30 V;
- signaling units;
- headsets HS-4C and HS-4AC.

Figure 3 describes example of SW-1 connection to substation panel.

Figure 2 describes example of SP-18W connection to CU.

Figure 4 describes layout of terminals, for the description of their assignment see Table 1.

Overall dimensions of SP-18W



While mounting, leave 100 mm free space from the surface B to connect the Product

SUBSTATION PANEL SP-36

Types

SP-36-WM	–	36 users
SP-36.30-WM	–	30 users
SP-36.24-WM	–	24 users

Description

Ensures a call and talk-back communication with other system users; max. 36 users.

Features:

- bridge wing substation, signaling units, foot switch, and external loudspeaker may be connected;
- «general list» mode (initiator transmits commands to all UUs);
- light indication of calling user;
- connection of external microphone to receive voice communication;
- call and communication with external ATX users (except a type for 6 users);
- backlight and controls brightness dimming, volume control of built-in speaker.

Technical specifications

Parameter	Value
Power supply	from user line
Type of connection	ISDN line
Max. power consumption, W	18
Built-in speaker	+
Built-in microphone	-
Operating temperature, °C	-15...+55
Limiting temperature, °C	-60...+70
Weight, kg	2.25
IP rating	IP44
Mounting	wall

Peripheral equipment

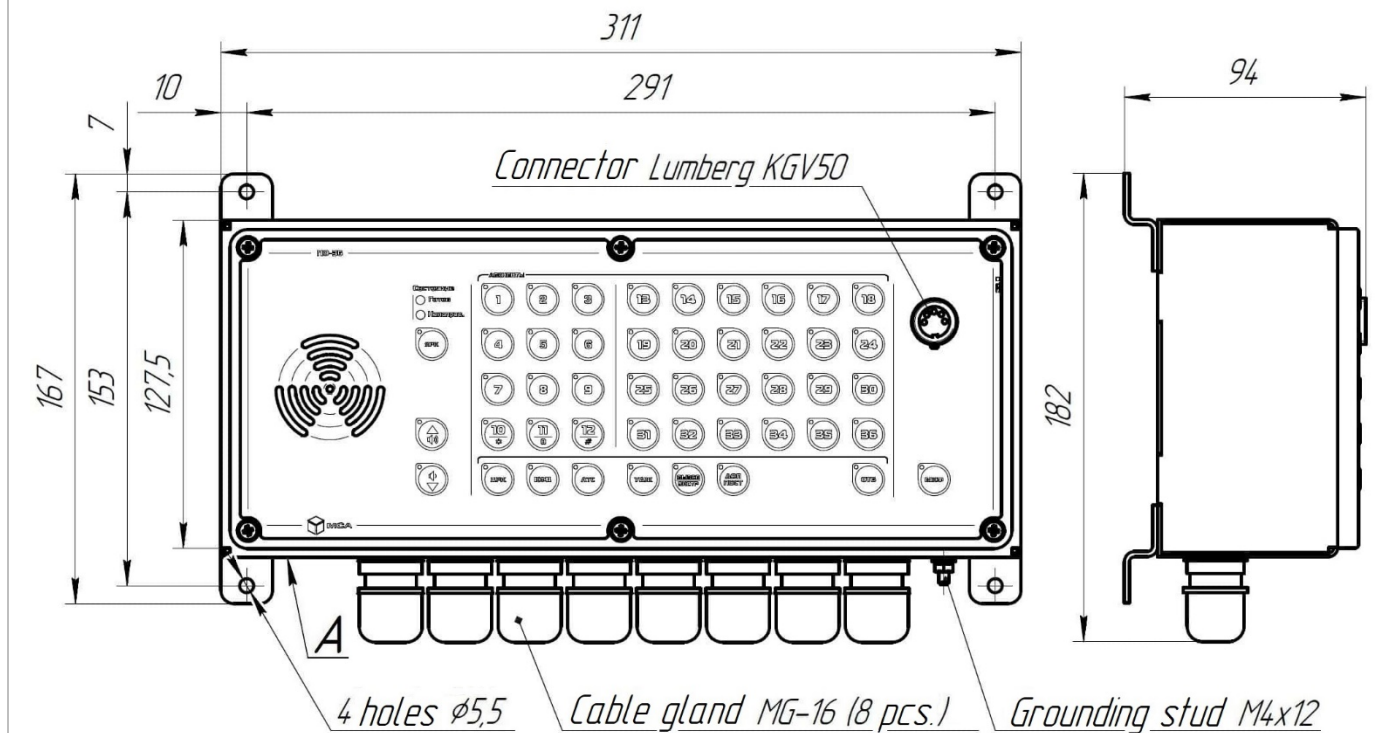
- microphones M3-W and M3-10W;
- bridge wing substation SW-1;
- foot switch FB1;
- loudspeakers 30 V;
- signaling units.

Figure 3 describes example of SW-1 connection to substation panel.

Figure 2 describes example of SP-36 connection to CU.

Figure 4 describes layout of terminals, for the description of their assignment see Table 1.

Overall dimensions of SP-36-WM



*While mounting, leave 100 mm free space
from the surface A to connect the Product*

SUBSTATION PANEL SP-36

Types

SP-36-TM	–	36 users
SP-36.30-TM	–	30 users
SP-36.24-TM	–	24 users

Description

Ensures a call and talk-back communication with other system users; max. 36 users.

Features:

- bridge wing substation, signaling units, foot switch, and external loudspeaker may be connected;
- «general list» mode (initiator transmits commands to all UUs);
- light indication of calling user;
- connection of external microphone to receive voice communication;
- call and communication with external ATX users (except a type for 6 users);
- backlight and controls brightness dimming, volume control of built-in speaker.

Technical specifications

Parameter	Value
Power supply	from user line
Type of connection	ISDN line
Max. power consumption, W	18
Built-in speaker	+
Built-in microphone	-
Operating temperature, °C	-15...+55
Limiting temperature, °C	-60...+70
Weight, kg	2.4
IP rating	IP44
Mounting	on a bracket

Peripheral equipment

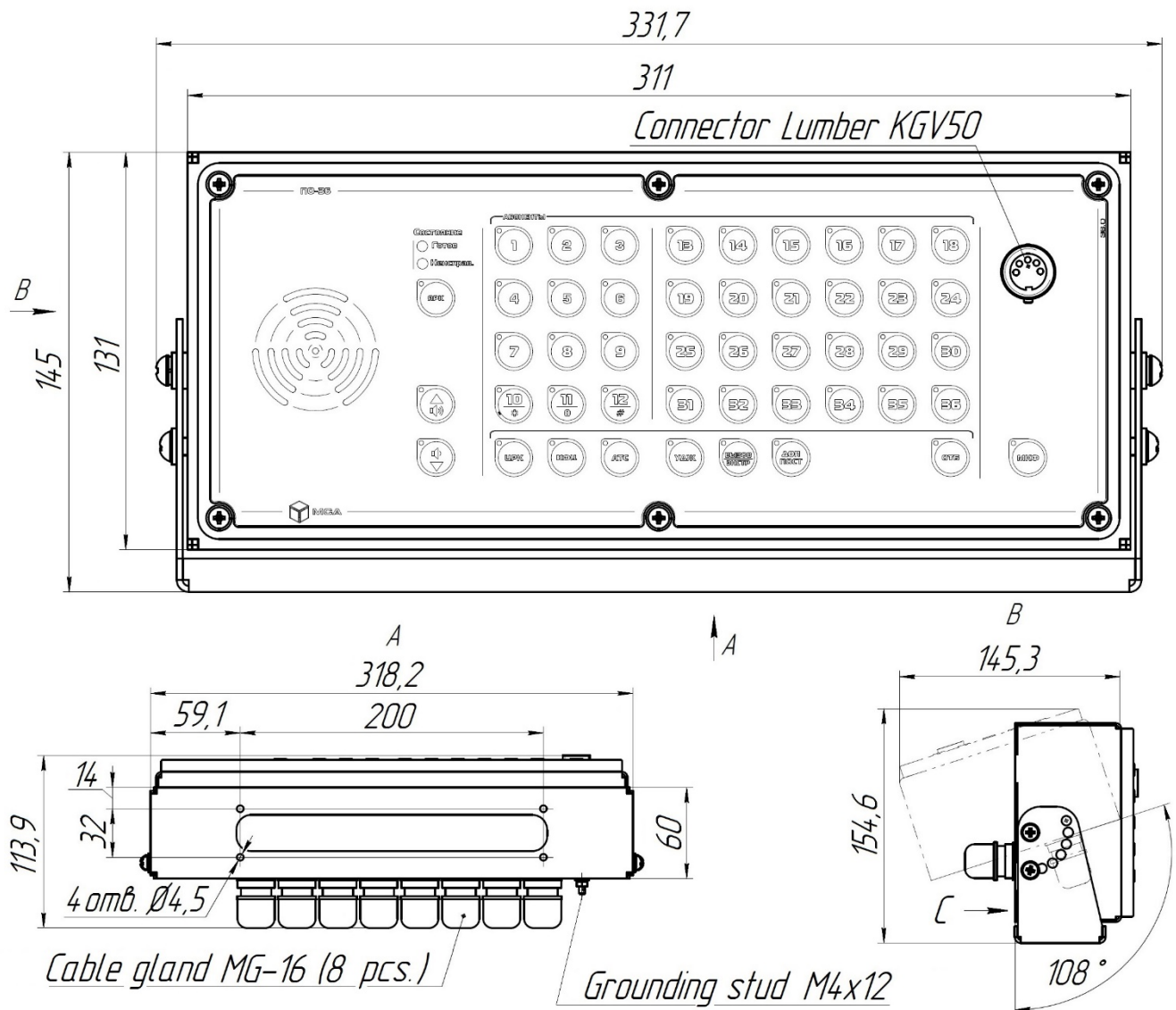
- microphones M1 and M2;
- bridge wing substation SW-1;
- foot switch FB1;
- loudspeakers 30 V;
- signaling units.

Figure 3 describes example of SW-1 connection to substation panel.

Figure 2 describes example of SP-36 connection to CU.

Figure 4 describes layout of terminals; for the description of their assignment see Table 1.

Overall dimensions of SP-36-TM



While mounting, leave 80 mm free space from the surface C to connect the Product

SUBSTATION PANEL SP-36

Types

SP-36-PM	–	36 users
SP-36.30-PM	–	30 users
SP-36.24-PM	–	24 users

Description

Ensures a call and talk-back communication with other system users; max. 36 users.

Features:

- bridge wing substation, signaling units, foot switch, and external loudspeaker may be connected;
- «general list» mode (initiator transmits commands to all UUs);
- light indication of calling user;
- connection of external microphone to receive voice communication;
- call and communication with external ATX users (except type for 6 users);
- backlight and controls brightness dimming, volume control of built-in speaker.

Technical specifications

Parameter	Value
Power supply	from user line
Type of connection	ISDN line
Max. power consumption, W	18
Built-in speaker	+
Built-in microphone	-
Operating temperature, °C	-15...+55
Limiting temperature, °C	-60...+70
Weight, kg	1.1
IP rating	IP44
Mounting	panel

Peripheral equipment

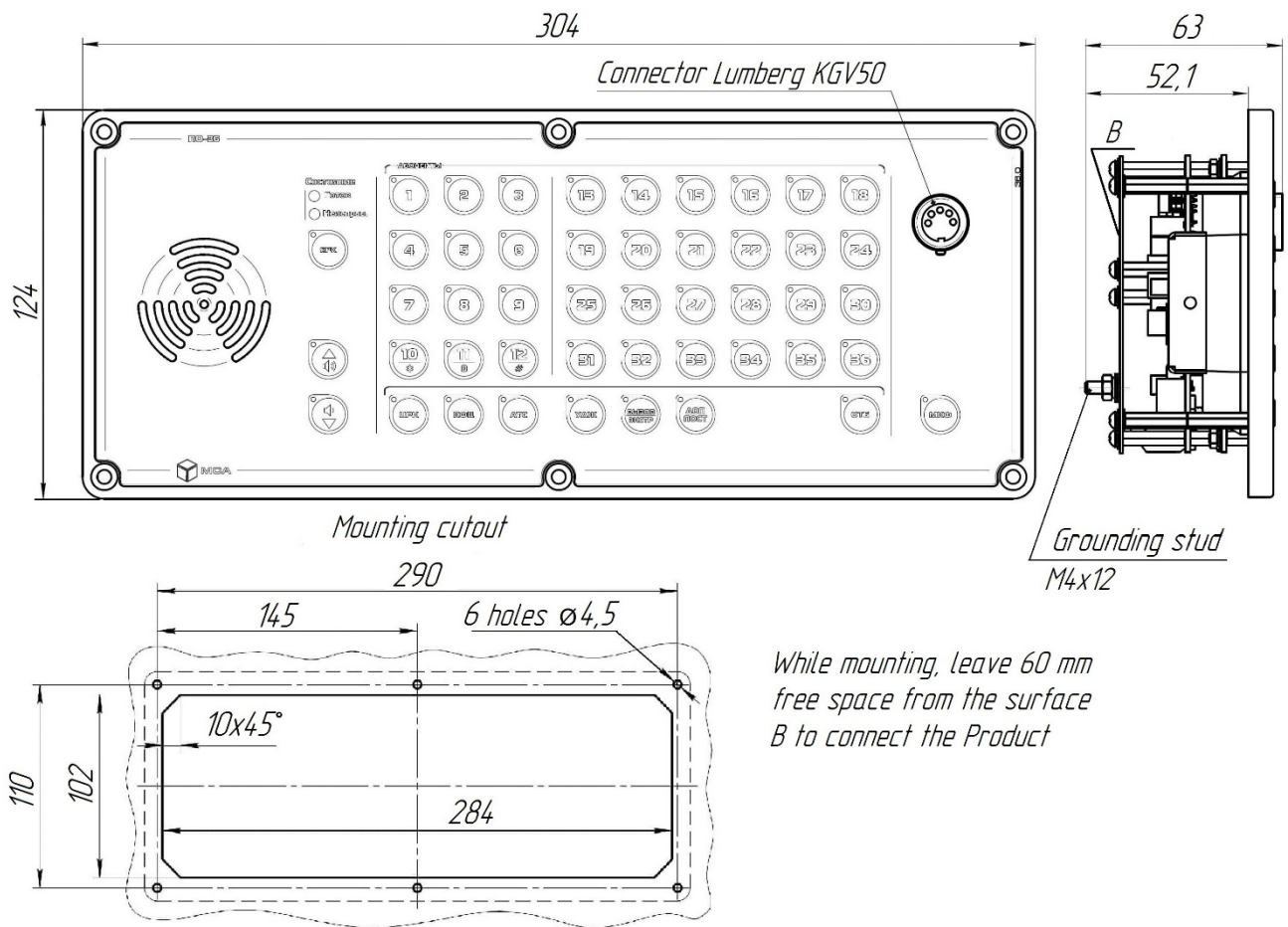
- microphones M1 and M2;
- bridge wing substation SW-1;
- foot switch FB1;
- loudspeakers 30 V;
- signaling units.

Figure 3 describes example of SW-1 connection to substation panel.

Figure 2 describes example of SP-36 connection to CU.

Figure 4 describes layout of terminals; for the description of their assignment see Table 1.

Overall dimensions of SP-36-PM



SUBSTATION PANEL SP-36W

Types

SP-36W	– 36 users
SP-36.30W	– 30 users
SP-36.24W	– 24 users

Description

Ensures a call and talk-back communication with other system users; max. 36 users.

Features:

- bridge wing substation, signaling units, foot switch, and external loudspeaker may be connected;
- «general list» mode (initiator transmits commands to all UUs);
- light indication of calling user;
- connection of external microphone to receive voice communication;
- call and communication with external ATX users (except type for 6 users);
- backlight and controls brightness dimming, volume control of built-in speaker;
- waterproof;
- waterproof connector for external communication device.

Technical specifications

Parameter	Value
Power supply	from user line
Type of connection	ISDN line
Max. power consumption, W	18
Built-in speaker	+
Built-in microphone	-
Operating temperature, °C	-15...+55
Limiting temperature, °C	-60...+70
Weight, kg	3.0
IP rating	IP56
Mounting	wall

Peripheral equipment

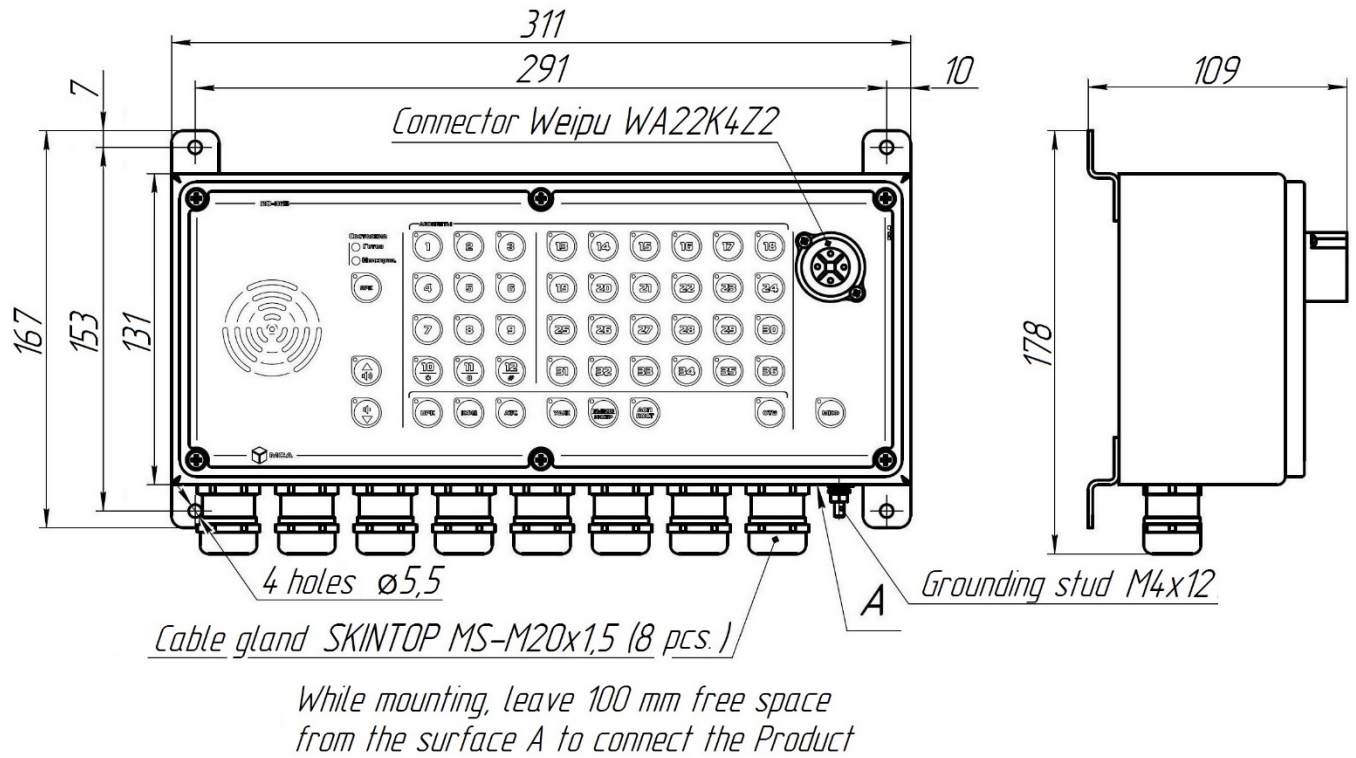
- microphones M3-W and M3-10W;
- bridge wing substation SW-1;
- foot switch FB1;
- loudspeakers 30 V;
- signaling units;
- headsets HS-4C and HS-4AC.

Figure 3 describes example of SW-1 connection to substation panel.

Figure 2 describes example of SP-36W connection to CU.

Figure 4 describes layout of terminals; for the description of their assignment see Table 1.

Overall dimensions of SP-36W



CONNECTION DIAGRAM OF BRIDGE WING SUBSTATIONS TO SUBSTATION PANEL

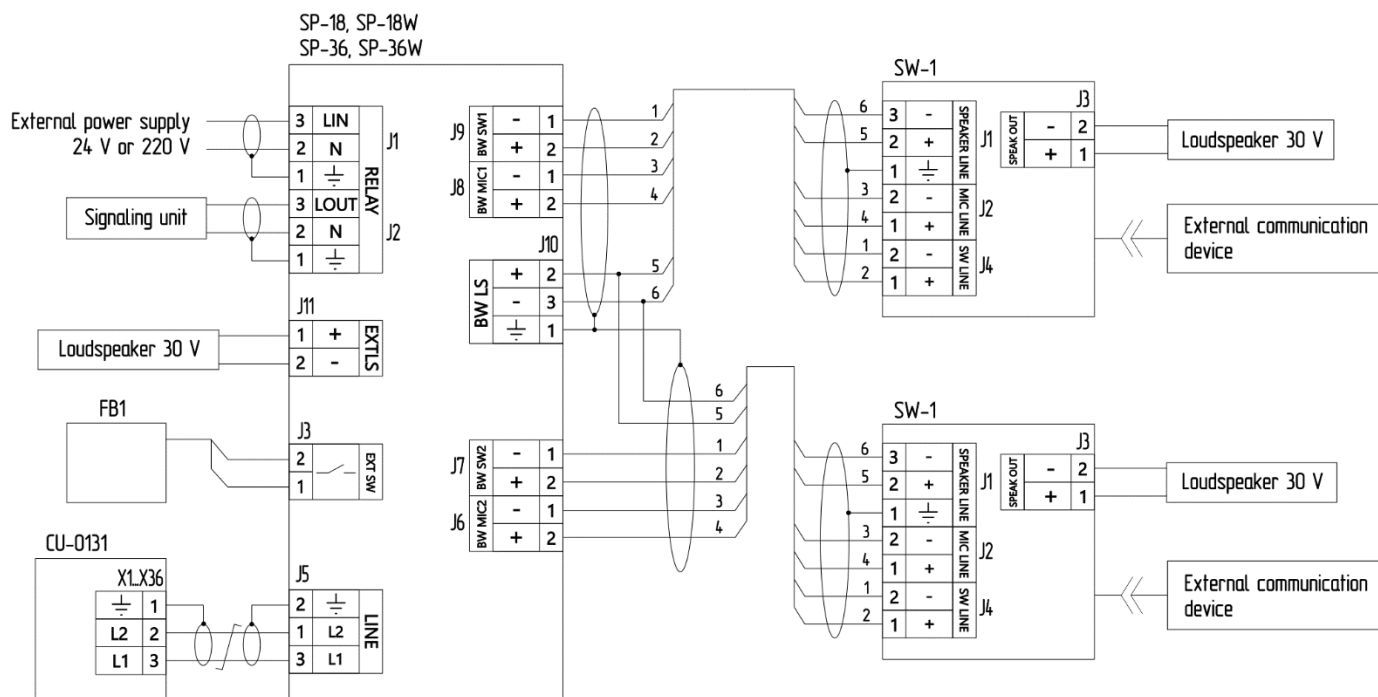


Figure 3 – Connection of bridge wing substations to substation panels

Note – Depending on UU, grounding may be marked on PCB as: «**E**», «**L**», «**///**» or «**⏏**».

LAYOUT AND DESCRIPTION OF SUBSTATION PANEL TERMINALS

Figure 4 and Table 1 describe names and function of substation panels SP-18, SP-18W, SP-36, SP-36W terminals.

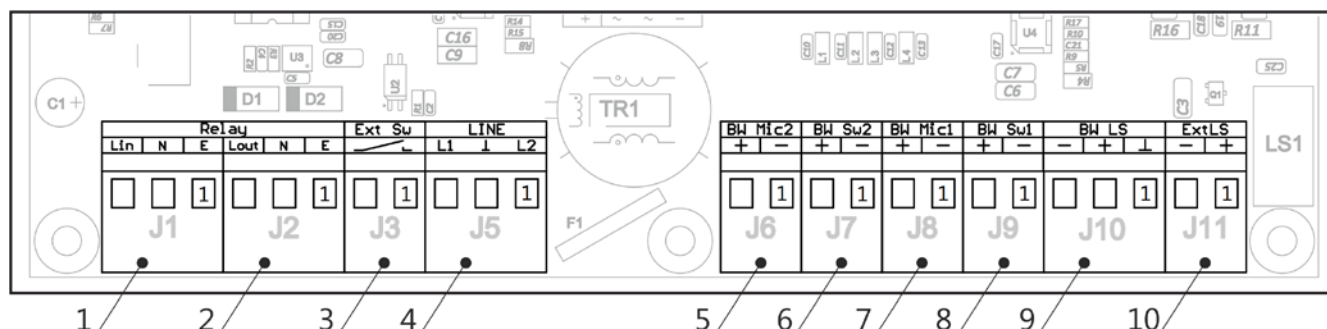


Figure 4 – Layout of substation panel terminals

Table 1 – Description of substation panel terminals

№	Name	Function
1	Relay*	Connection of external power supply for signaling unit
2		Connection of external signaling unit
3	Ext Sw	Connection of FB1 button to control microphone status
4	LINE	Connection of ISDN user line from CU
5	BW Mic2	Connection of bridge wing substation №2 microphone
6	BW Sw2	Connection of bridge wing substation №2 button
7	BW Mic1	Connection of bridge wing substation №1 microphone
8	BW Sw1	Connection of bridge wing substation №1 button
9	BW LS	Connection of bridge wing substation loudspeaker
10	ExtLS	Connection of external loudspeaker

Note

1 «*» - connection of RB-139G-XX unit control signal is carried out to contacts «Lin» and «Lout» terminals J1 and J2.

2 Only later versions of substation panels SP-18, SP-18W, SP-36 and SP-36W starting from version ICB-131-SP-main_Rev.1.6 are equipped with terminals J1 and J2.

For the description of controls and LED light indicators see Operating manual.

BRIDGE WING SUBSTATION SW-1

Types

SW-1-WM
 SW-1-PM

Description

The wing substation is a remote station that is connected to substation panel ensuring talk-back communication with system users located in the bridge wing.

Features:

- waterproof connector for microphone;
- loudspeaker may be connected;
- operates with all substation panels included in the System.

Technical specifications

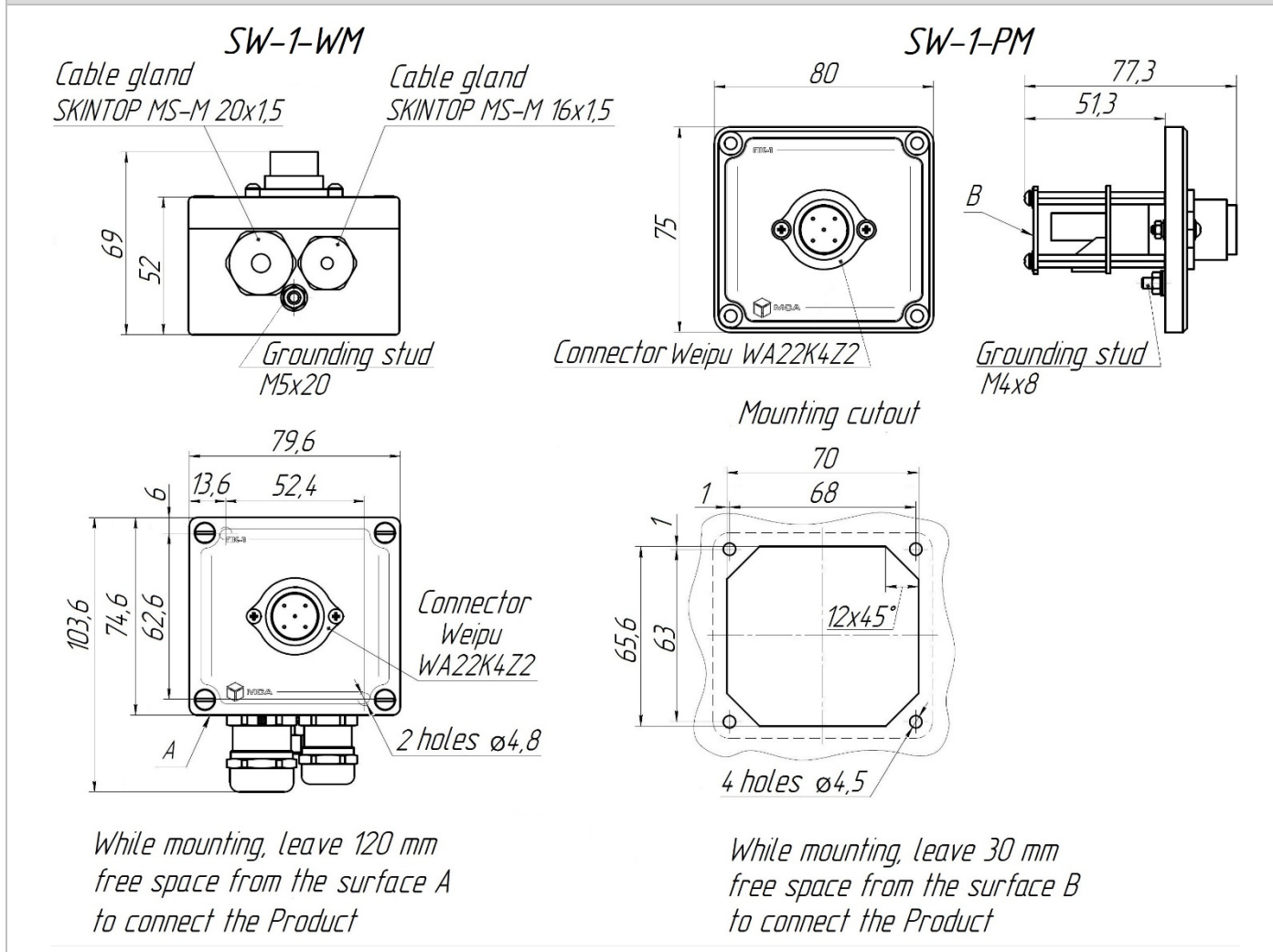
Parameter	Value	
Type	SW-1-WM	SW-1-PM
Operating temperature, °C	-40...+55	
Weight, kg	0.38	0.24
IP rating	IP56	
Mounting	wall	panel

Peripheral equipment

- microphone M3-W and M3-10W;
- loudspeaker 30 V.

Figure 3 describes example of SW-1 connection to substation panel.

Overall dimensions



TALK-BACK STATIONS

TALK-BACK STATION S1

Types

S1-PM
S1-WM

Description

Ensures talk-back public address communication with one or several pre-defined system users.

Features:

- call button;
- button to switch on microphone;
- controls backlight;
- dry contact output.

Technical specifications

Parameter	Value	
Type	S1-PM	S1-WM
Power supply	from user line	
Type of connection	ISDN line	
Max. power consumption, W	4	
Built-in speaker	+	
Built-in microphone	+	
Operating temperature, °C	-15...+55	
Weight, kg	0.5	0.7
IP rating	IP44	
Mounting	panel	wall

Peripheral equipment

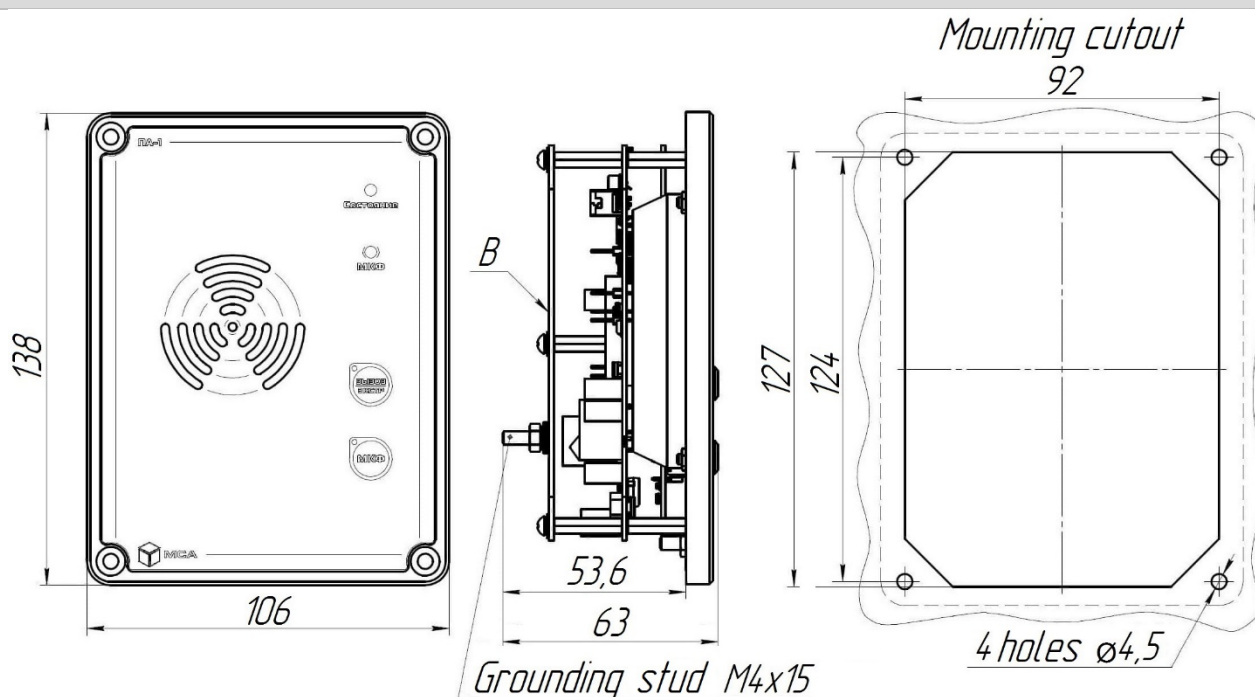
Signaling units
(only using RB-139G-24 or RB-139G-220).

Figure 2a describes example of S1 connection to CU.

Figure 10b describes example of S1 connection in talk-back communication mode.

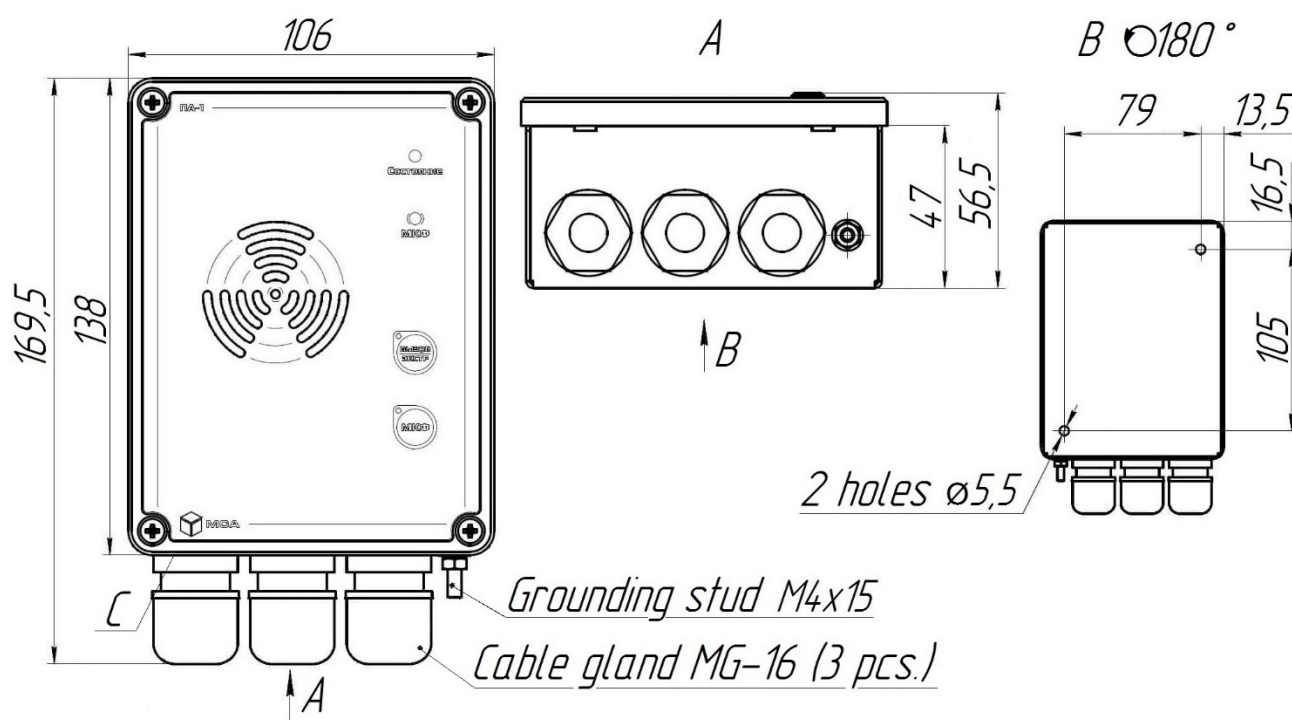
Layout of terminals and their description is shown in Figure 5 and Table 2.

Overall dimensions of S1-PM



While mounting, leave 20 mm free space from the surface B to connect the Product

Overall dimensions of S1-WM



*While mounting, leave 120 mm free space from the surface *C* to connect the Product*

TALK-BACK STATION S1W

Description

Ensures talk-back public address communication with one or several pre-defined system users.

Features:

- call button with backlight;
- a button to switch on microphone with backlight;
- dry contact output;
- waterproof.

Technical specifications

Parameter	Value
Power supply	from user line
Type of connection	ISDN line
Max. power consumption, W	4
Built-in speaker	+
Built-in microphone	+
Operating temperature, °C	-40...+55
Weight, kg	0.87
IP rating	IP56
Mounting	wall

Peripheral equipment

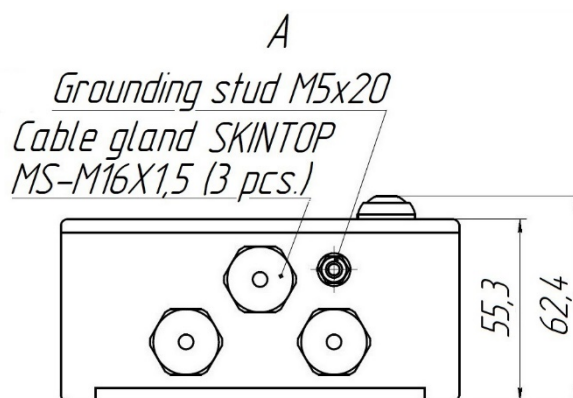
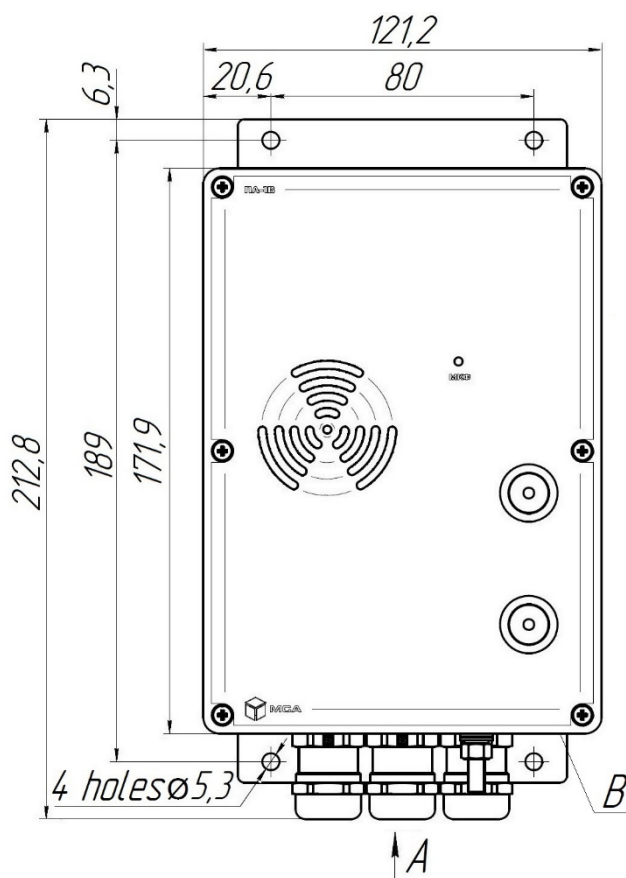
Signaling units
(only using RB-139G-24 or RB-139G-220).

Figure 2a describes example of S1W connection to CU.

Figure 10b describes example of S1W connection in talk-back communication mode.

Layout of terminals and their description is shown in Figure 5 and Table 2.

Overall dimensions of S1W



While mounting, leave 120 mm free space from the surface B to connect the Product

TALK-BACK STATION S2

Types

S2-PM
S2-WM

Description

Ensures talk-back public address communication with one or several pre-defined system users.

Features:

- controls backlight;
- call button;
- button to switch on microphone;
- connector for external communication device;
- dry contact output.

Technical specifications

Parameter	Value	
	S2-PM	S-2-WM
Power supply	from user line	
Type of connection	ISDN line	
Max. power consumption, W	4	
Built-in speaker	+	
Built-in microphone	-	
Operating temperature, °C	-15...+55	
Weight, kg	0.47	0.70
Mounting	panel	wall
IP rating	IP44	

Peripheral equipment

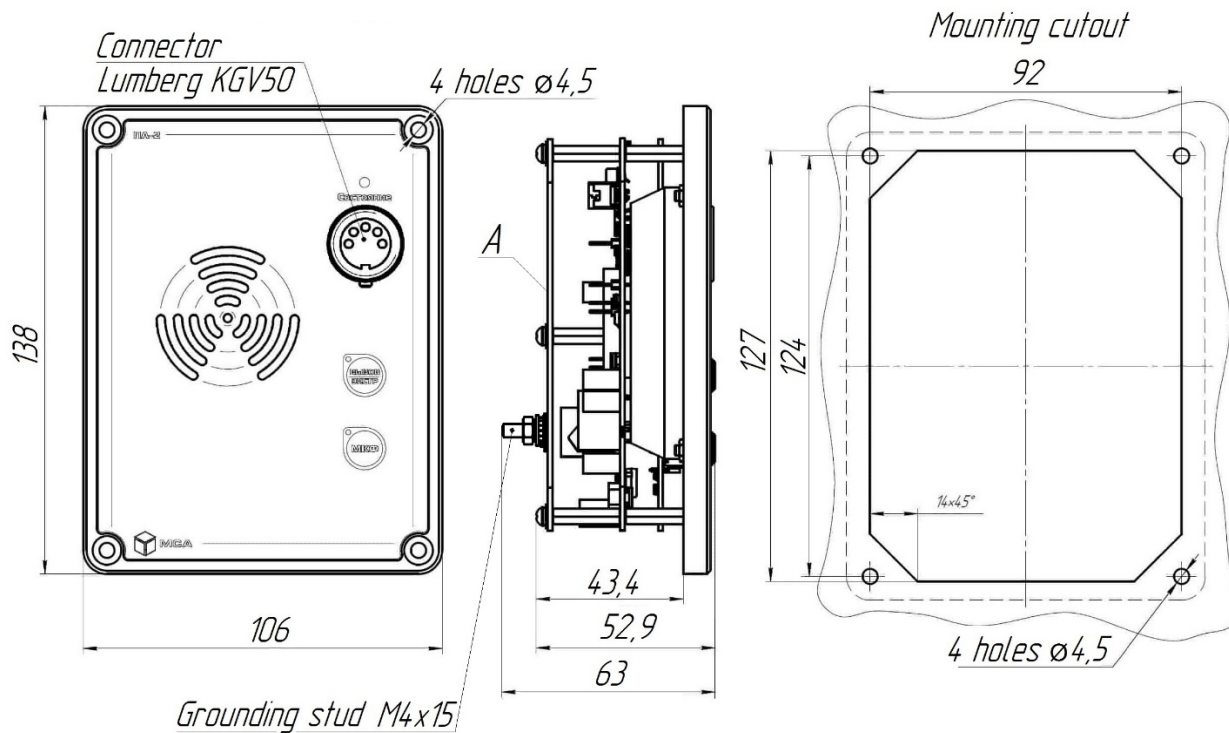
- microphones M1 and M2;
- signaling units (only using RB-139G-24 or RB-139G-220).

Figure 2a describes example of S2 connection to CU.

Figure 10b describes example of S2 connection in talk-back communication mode.

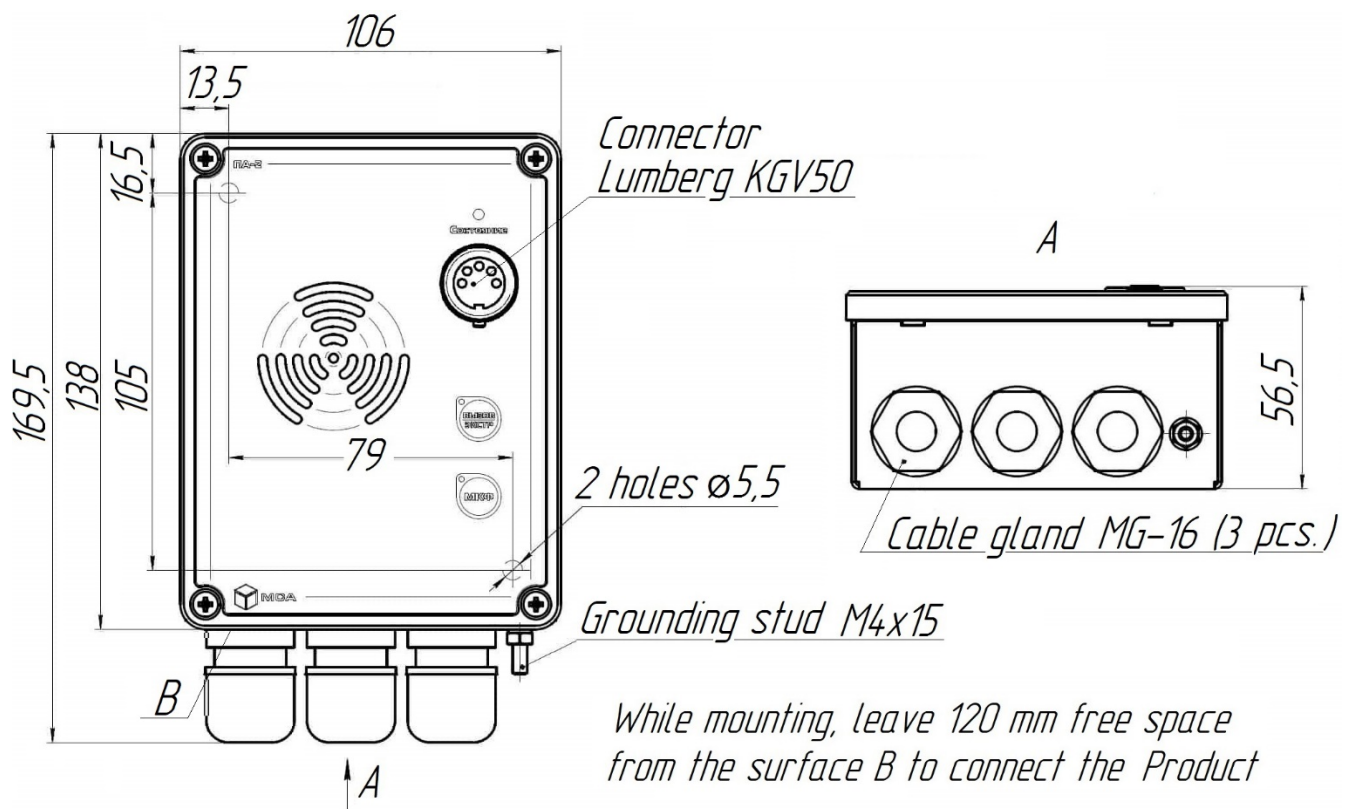
Layout of terminals and their description is shown in Figure 5 and Table 2.

Overall dimensions of S2-PM



While mounting, leave 30 mm free space from the surface A to connect the Product

Overall dimensions of S2-WM



LAYOUT AND DESCRIPTION OF TALK-BACK STATIONS S1, S1W, S2 TERMINALS

Figure 5 and Table 2 describe names and function of talk-back stations S1, S1W, S2 terminals.

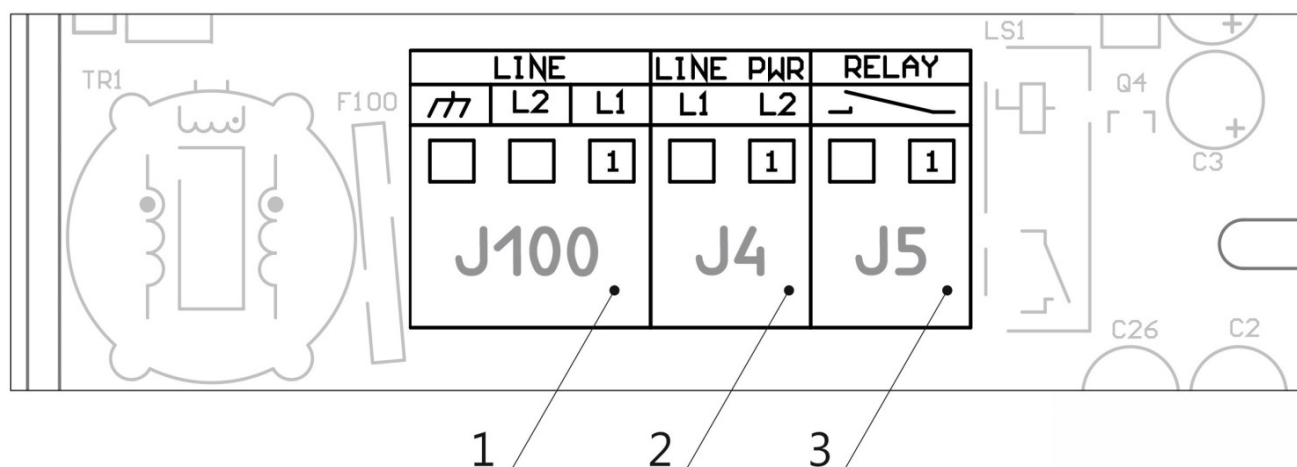


Figure 5 – Layout of talk-back stations S1, S1W, S2 terminals

Table 2 – Description of talk-back stations S1, S1W, S2 terminals

№	Name	Function
1	LINE	Connection of ISDN user line from CU
2	LINE PWR	Connection of external power supply 24 V DC *
3	RELAY	Dry contact output
* Used only in pair communication mode (based on Point-to-point).		

For the description of controls and LED light indicators see Operating manual.

TALK-BACK STATION S1-5

Types

S1-5-PM
S1-5-WM

Description

Ensures talk-back public address communication with one or several pre-defined system users.

Features:

- backlight brightness dimming button;
- call buttons;
- button to switch on microphone;
- signaling unit may be connected.

Technical specifications

Parameter	Value	
	S1-5-PM	S1-5-WM
Power supply	from user line	
Type of connection	ISDN line	
Max. power consumption, W	6	
Number of buttons to select zones, pcs.	5	
Built-in speaker	+	
Built-in microphone	+	
Operating temperature, °C	-15...+55	
Weight, kg	0.6	1.1
Mounting	panel	wall
IP rating	IP44	

Peripheral equipment

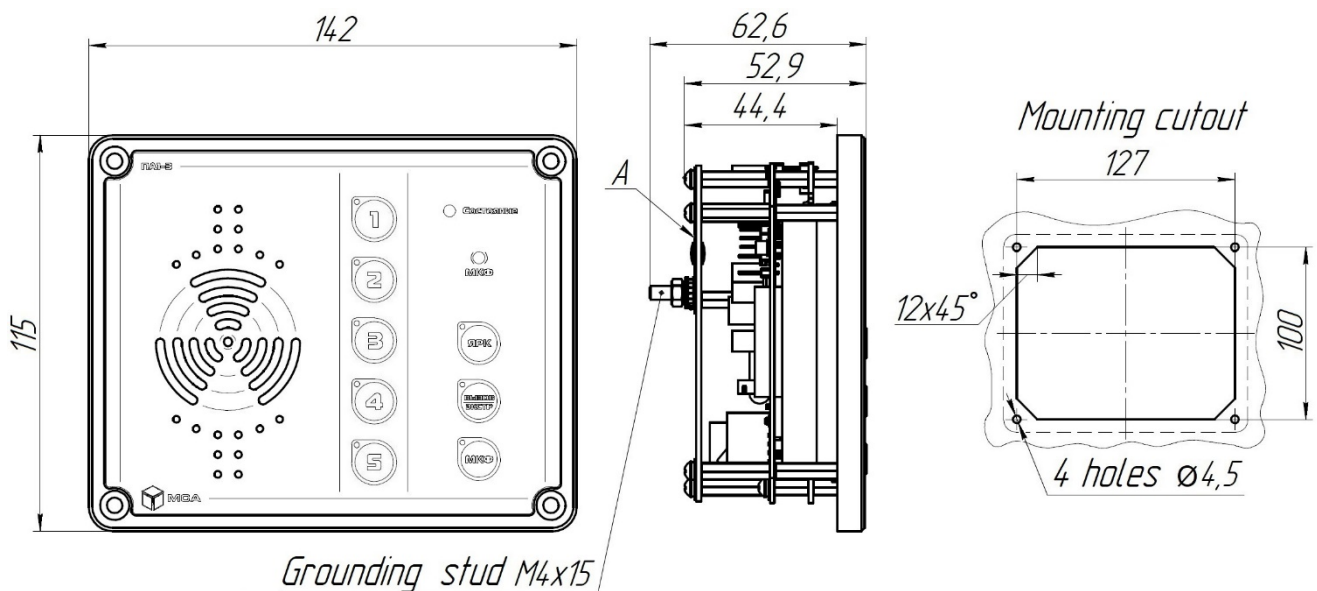
Signaling units.

Figure 2a describes example of S1-5 connection to CU.

Figure 10a describes example of S1-5 connection in talk-back communication mode.

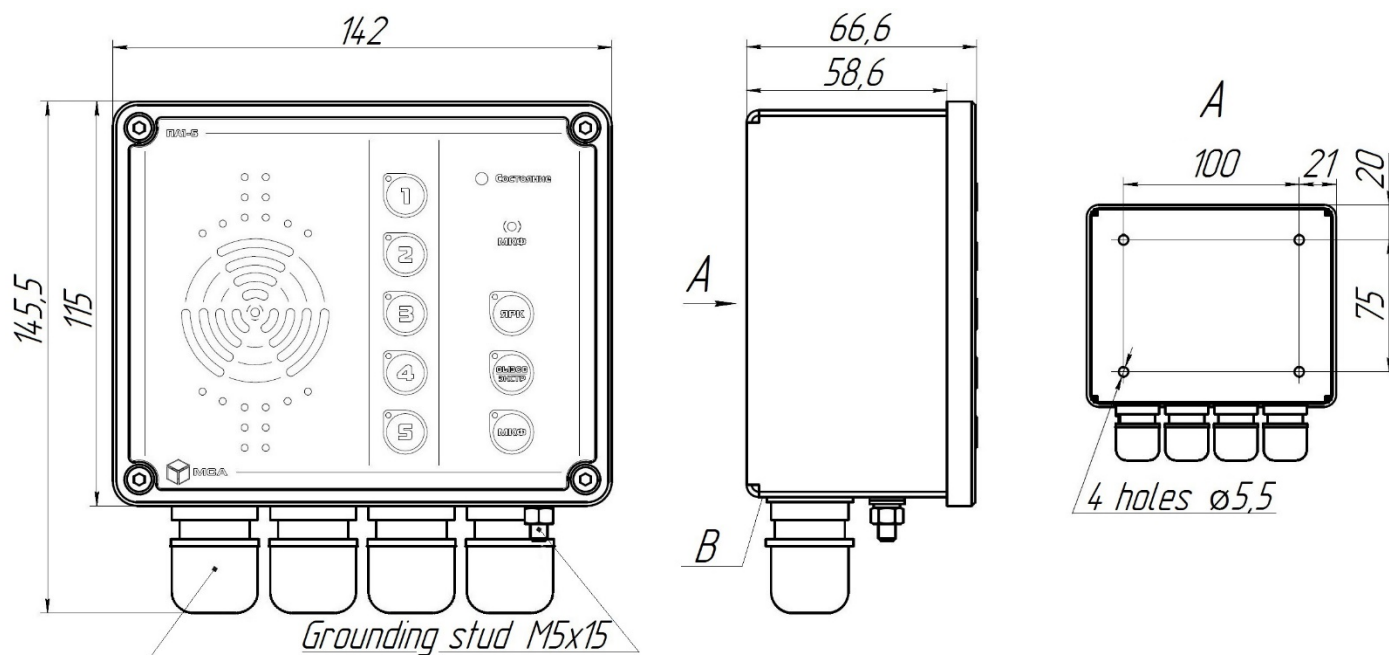
Layout of terminals and their description is shown in Figure 6 and Table 3.

Overall dimensions of S1-5-PM



While mounting, leave 30 mm free space from the surface A to connect the Product

Overall dimensions of S1-5-WM



While mounting, leave 120 mm free space from the surface B to connect the Product

TALK-BACK STATION S2-5

Types

S2-5-PM
S2-5-WM

Description

Ensures talk-back public address communication with one or several pre-defined system users.

Features:

- backlight brightness dimming button;
- call buttons;
- button to switch on microphone;
- signaling unit may be connected.

Technical specifications

Parameter	Value	
	S2-5-PM	S2-5-WM
Power supply	from user line	
Type of connection	ISDN line	
Max. power consumption, W	6	
Built-in speaker	+	
Built-in microphone	-	
Number of buttons to select zones, pcs.	5	
Operating temperature, °C	-15...+55	
Weight, kg	0.5	1.0
Mounting	panel	wall
IP rating	IP44	

Peripheral equipment

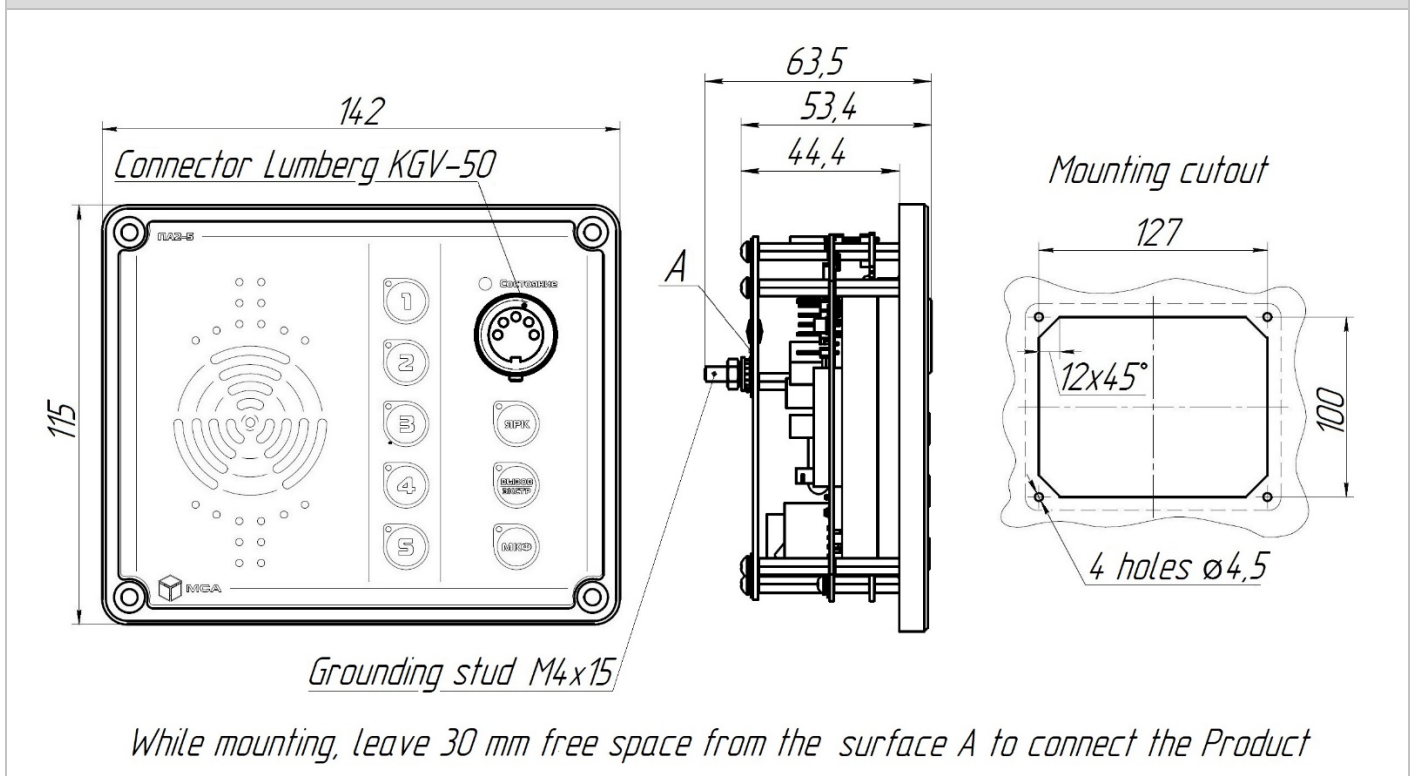
- microphones M1 and M2;
- signaling units.

Figure 2a describes example of S2-5 connection to CU.

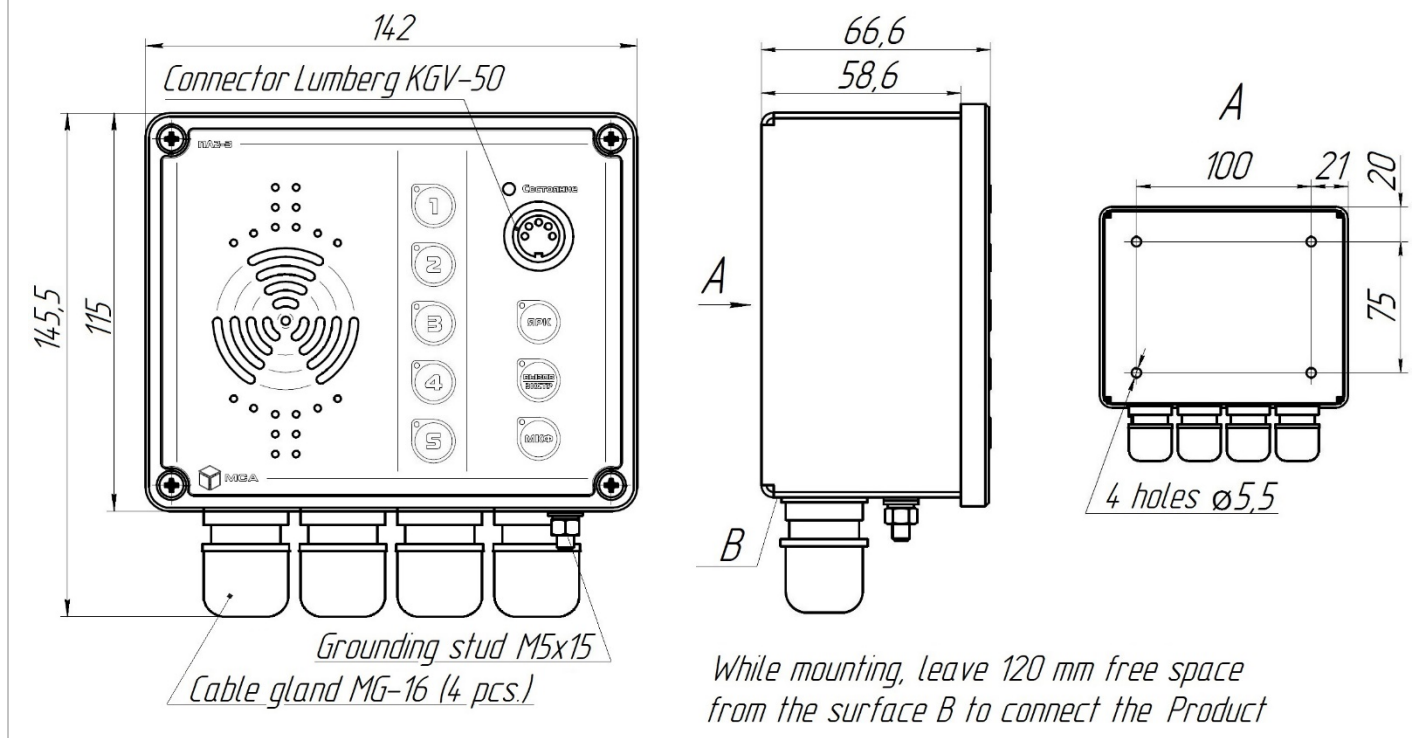
Figure 10a describes example of S2-5 connection in talk-back communication mode.

Terminals layout and function are shown in Figure 6 and Table 3.

Overall dimensions of S2-5-PM



Overall dimensions of S2-5-WM



LAYOUT AND DESCRIPTION OF TALK-BACK STATIONS TERMINALS S1-5, S2-5

Figure 6 and Table 3 describe names and function of talk-back stations S1-5, S2-5 terminals.

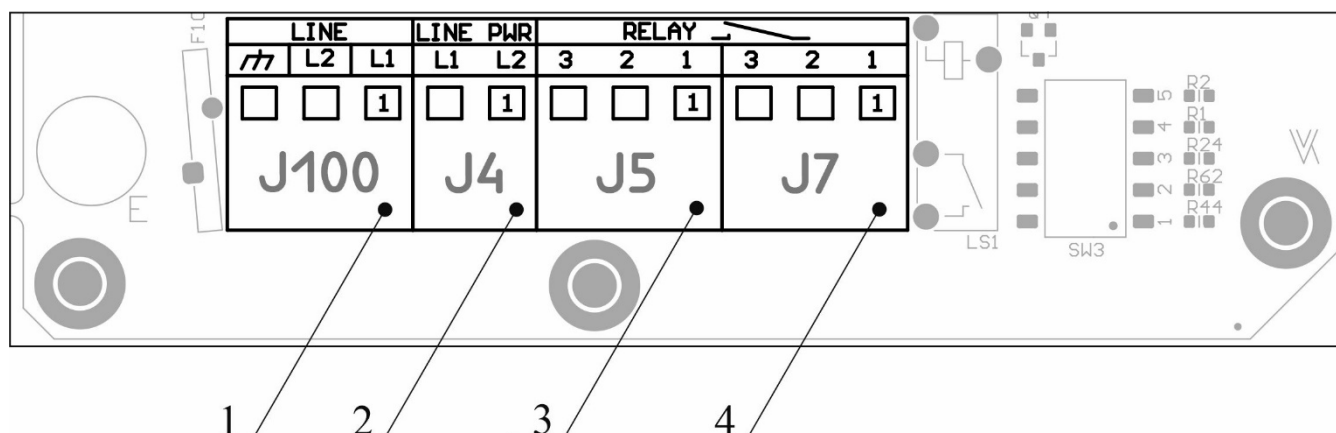


Figure 6 – Layout of talk-back stations terminals S1-5 and S2-5

Table 3 – Description of talk-back stations terminals S1-5 and S2-5

№	Name	Function
1	LINE	Connection of ISDN user line from CU
2	LINE PWR	Connection of external power supply 24 V DC*
3	RELAY	Connection of external power supply for signaling unit
4		Connection of signaling unit
Notes		
1 «*» terminal is used only in pair communication mode (based on Point-to-point).		
2 Connection of unit RB-139G-XX control signal is carried out to contact «1» terminals J5 and J7.		

For the description of controls and LED light indicators see Operating manual.

TALK-BACK STATION S3

Description

Ensures talk-back public address communication with one or several pre-defined system users. Stations are applied in areas with increased level of noise and humidity.

Features:

- connector for external communication device;
- call button;
- loudspeaker may be connected;
- signaling unit may be connected;
- waterproof.

Technical specifications

Parameter	Value
Power supply	from user line
Type of connection	ISDN line
Auxiliary power consumption, W	max. 5 (w/o loudspeakers power)
Max. power of connected loud-speaker, W	15
Built-in microphone	-
Built-in speaker	-
Operating temperature, °C	-40...+55
Weight, kg	0.8
Mounting	wall
IP rating	IP56

Peripheral equipment

- microphones M3-W and M3-10W;
- headsets HS-4C and HS-4AC;
- loudspeakers 30 V;
- signaling units.

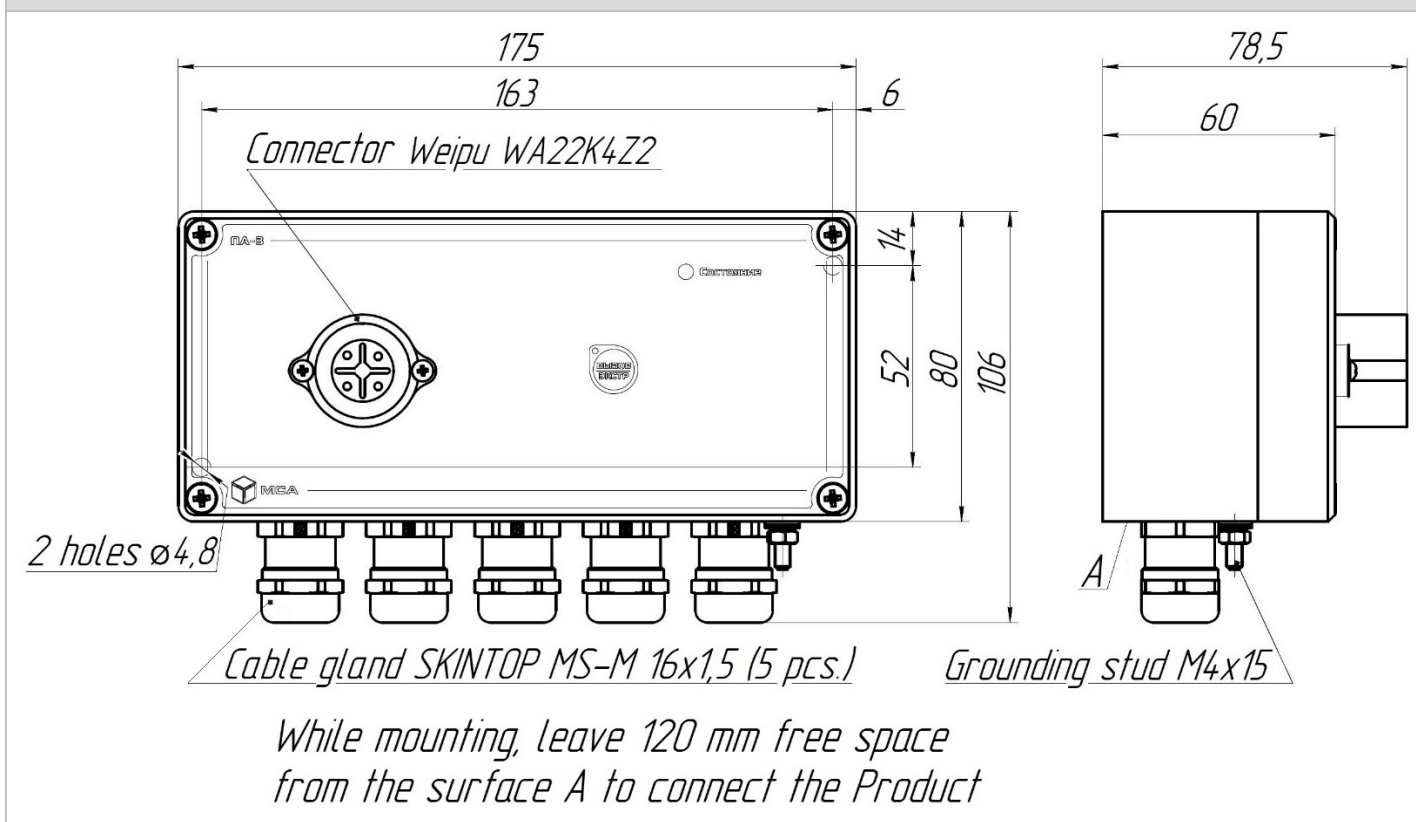
Figure 2b or Figure 7 describe example of S3 connection to CU.

Figure 10a describes example of S3 connection in pair communication mode.

Figure 7 describes example of peripheral equipment connection to S3.

Figure 8 and Table 4 describe layout and assignment of terminals.

Overall dimensions of S3



CONNECTION DIAGRAM OF PERIPHERAL EQUIPMENT TO TALK-BACK STATION S3

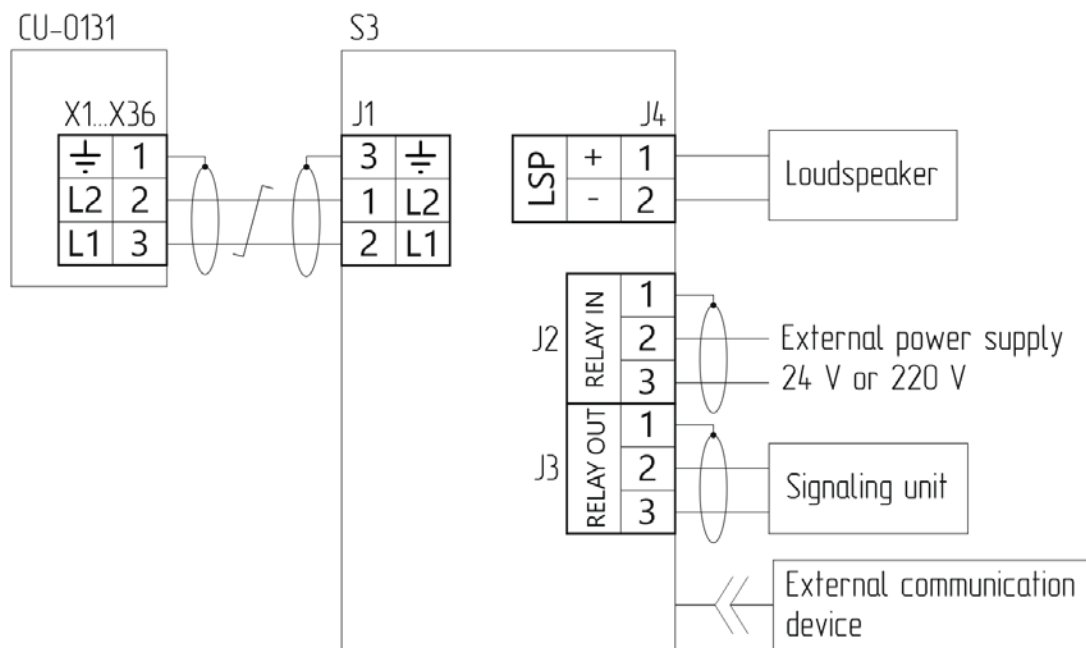


Figure 7 – Example of peripheral equipment connection to talk-back station S3

Note – Depending on UU, grounding may be marked on PCB as: «E», « \perp », « /// » or « \perp ».

LAYOUT AND DESCRIPTION OF TALK-BACK STATION TERMINALS S3

Figure 8 and Table 4 describe names and function of talk-back station S3 terminals.

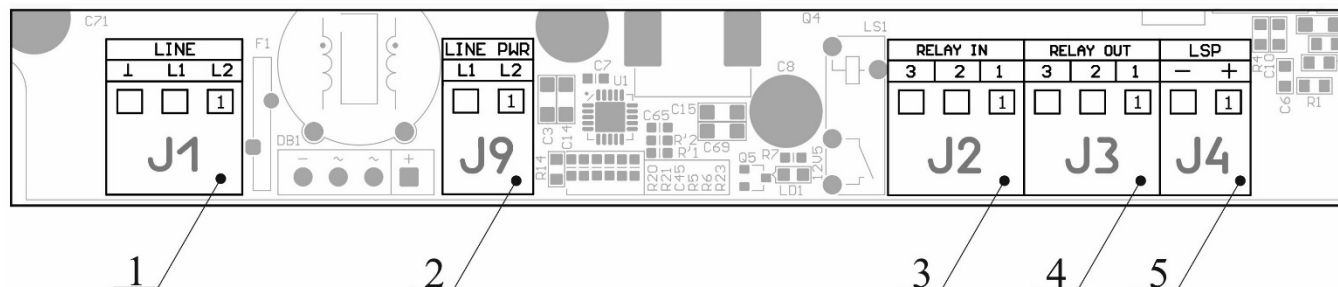


Figure 8 – Layout of talk-back station S3 terminals

Table 4 – Description of talk-back station S3 terminals

№	Name	Function
1	LINE	Connection of ISDN user line from CU
2	LINE PWR	Connection of external power supply 24 V DC*
3	RELAY IN**	Connection of external power supply for signaling unit
4	RELAY OUT**	Connection of signaling unit
5	LSP	Connection of external loudspeaker
Notes 1 «*» terminal is used only in pair communication mode (based on Point-to-point). 2 «**» connection of unit RB-139G-XX control signal to contact «3» terminals J2 and J3.		

For the description of controls, functional elements and LED light indicators see Operating manual.

TALK-BACK STATION S4

Description

Ensures talk-back communication (half-duplex mode) with one or several pre-defined system users using external loudspeaker. Stations are applied in areas with increased level of noise and humidity.

Features:

- waterproof;
- external loudspeaker acts as a microphone and speaker, i.e. receives and reproduces voice communication. To switch between reception and transmission modes, press (and then release) microphone button of user (except S4);
- call button.

Technical specifications	
Parameter	Value
Power supply	from user line
Type of connection	ISDN line
Auxiliary power consumption, W	max. 4 (w/o loudspeaker power)
Max. power of connected loudspeaker, W	10
Built-in microphone	-
Built-in speaker	-
Operating temperature, °C	-40...+55
Weight, kg	0.72
IP rating	IP56
Mounting	wall

Peripheral equipment

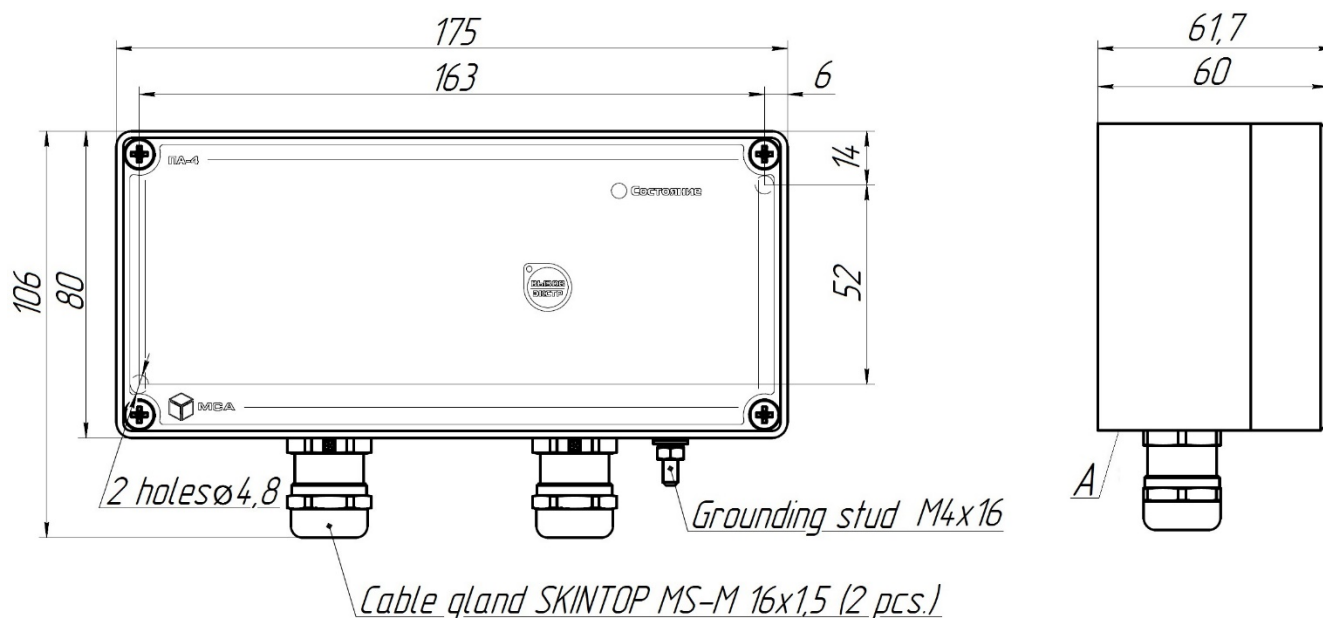
loudspeakers 30 V.

Figure 2b describes example of S4 connection to CU.

Figure 10b describes example of S4 connection in pair communication mode.

Figure 9 and Table 5 describe layout and assignment of terminals.

Overall dimensions of S4



LAYOUT AND DESCRIPTION OF TALK-BACK STATION TERMINALS S4

Figure 9 and Table 5 describe names and function of talk-back station S4 terminals.

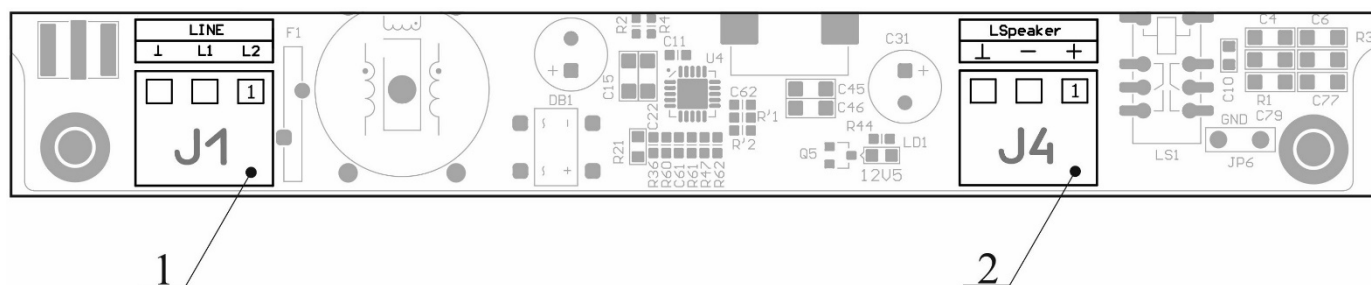


Figure 9 – Layout of talk-back station S4 terminals

Table 5 – Description of talk-back station S4 terminals

№	Name	Function
1	LINE	Connection of ISDN user line from CU
2	LSpeaker	Connection of external loudspeaker

For the description of controls, functional elements and LED light indicators see Operating manual.

TALK-BACK STATION S4P

Description

Ensures talk-back communication (half-duplex mode) with one pre-defined system user via built-in speaker. Portable, may be connected to socket CBP1. The unit may be applied on open deck.

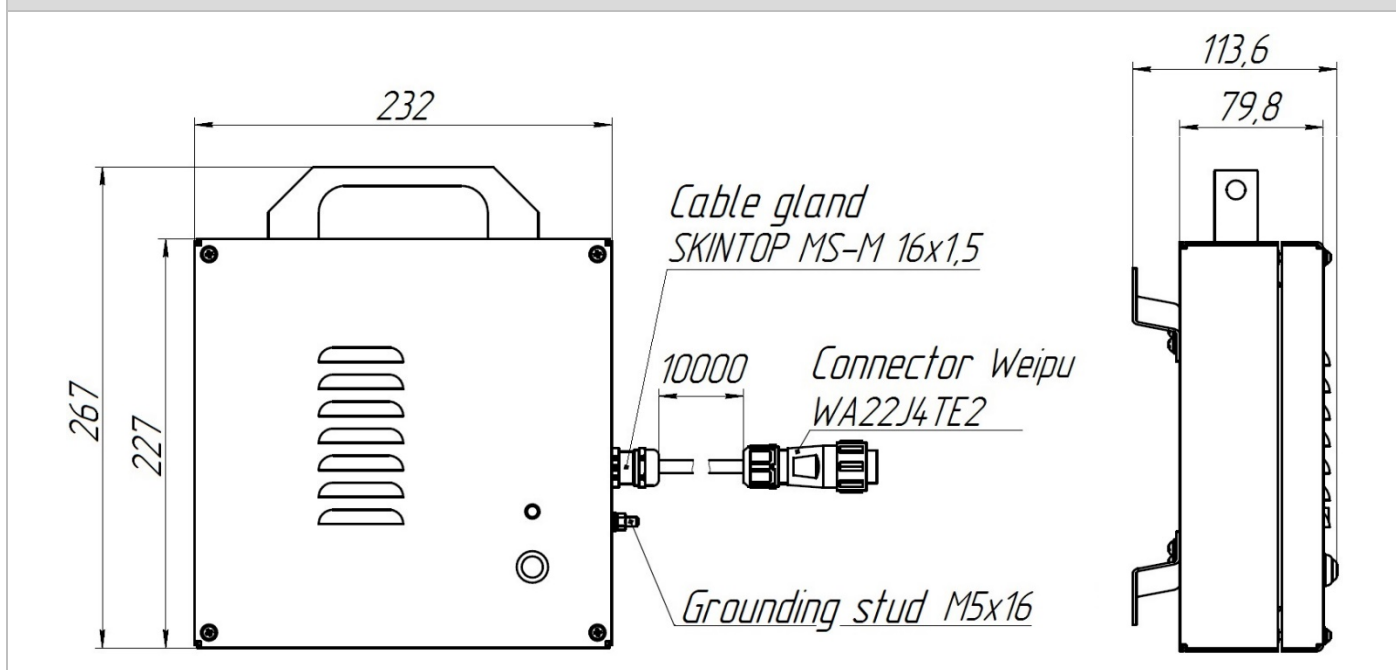
Features:

- waterproof;
- call button with backlight;
- built-in speaker acts as a microphone and speaker, receives and reproduces voice communication. To switch between reception and transmission modes, press (and then release) microphone button of user;
- standard 10 m cable with a connector for socket CBP1;
- bracket to wind up a cable.

Technical specifications	
Parameter	Value
Power supply	from user line
Type of connection	ISDN line
Max. power consumption, W	15
Built-in microphone	-
Built-in speaker	+
Operating temperature, °C	-40...+55
Weight, kg	2.2
IP rating	IP56
Mounting	portable

Peripheral equipment
socket CBP1.

Overall dimensions of S4P



CONNECTION DIAGRAM OF TALK-BACK STATIONS OPERATION IN PAIR COMMUNICATION MODE

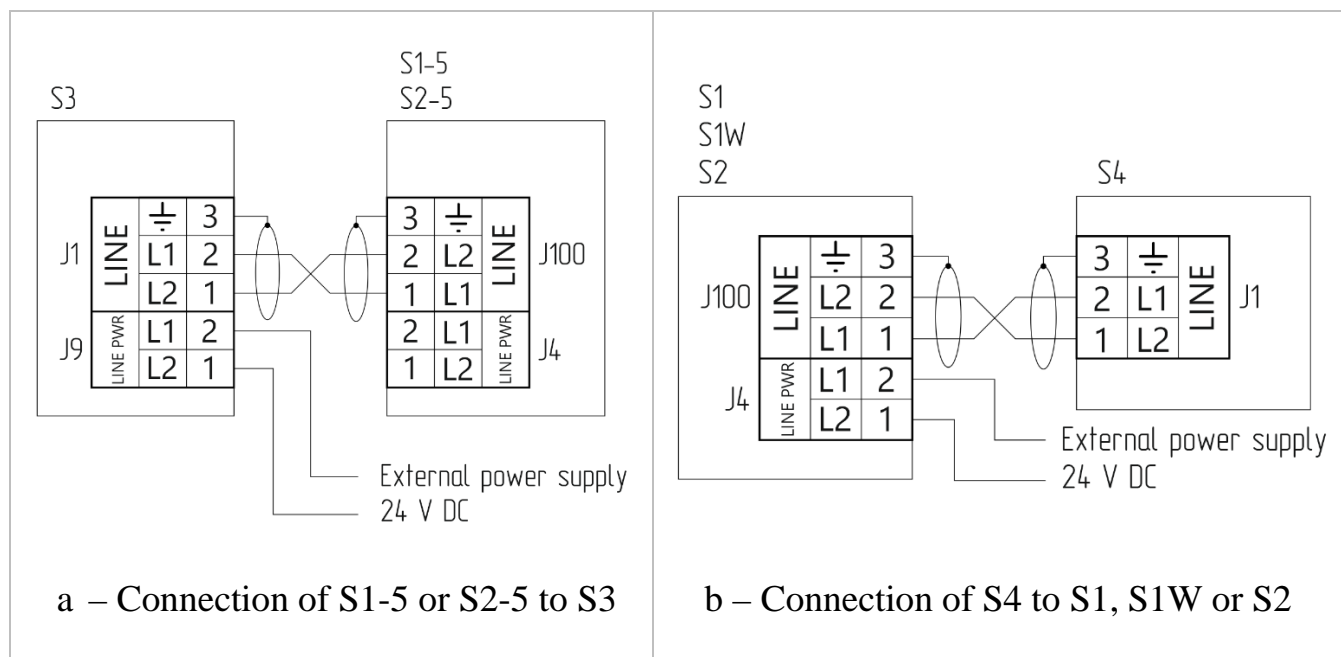


Figure 10 – Example of talk-back stations connection for operation in pair communication mode.

Notes – Depending on UU, grounding may be marked on PCB as: «**E**», «**L**», «**///**» or «**⏏**».

CIRCUIT SWITCHING, DISTRIBUTION, CONNECTING, SWITCHING UNITS

SOCKET HS-CB

Description

Peripheral unit to connect headset or microphone to UU.

Features:

- waterproof;
- quick connector with protective cover;
- may operate together with SP-18, SP-36 and S3.

Technical specifications

Parameter	Value
Operating temperature, °C	-40...+55
Weight, kg	0.7
IP rating	IP56
Mounting	wall

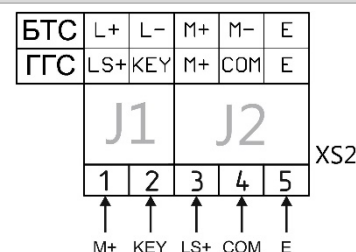
Description of PCB terminals

Contact	Function
LS+	headphones
KEY	PTT switch
M+	microphone
COM	common
E	earthing (ground)

Peripheral equipment

- headsets HS-4C and HS-4AC;
- microphones M3-W and M3-10W.

Connection diagram

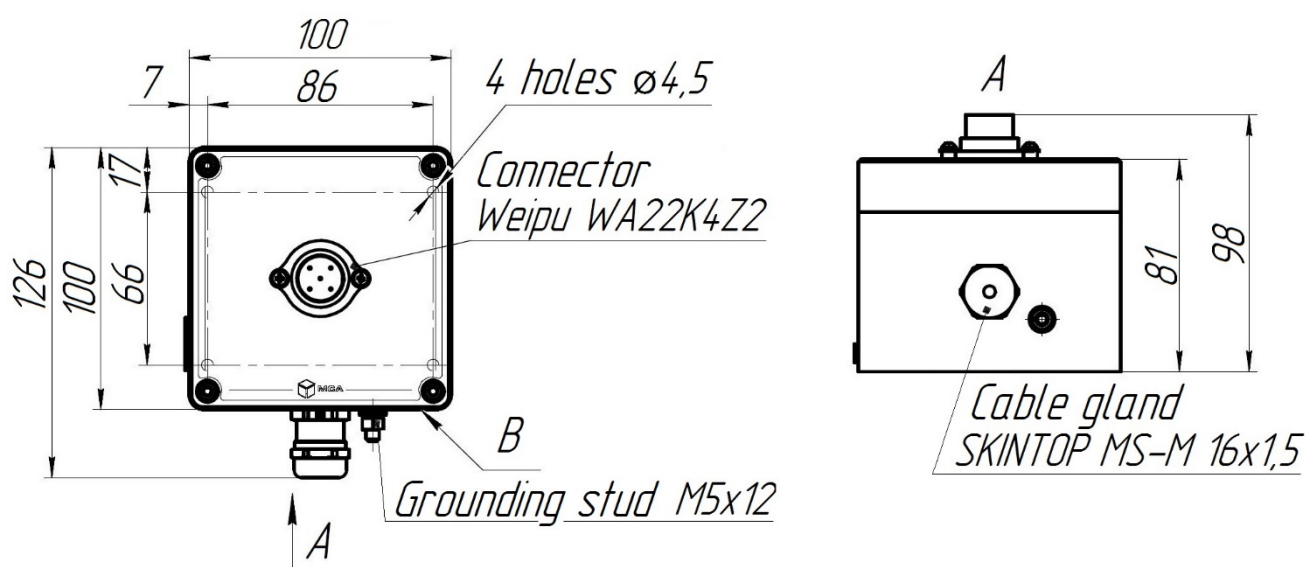


Note

BTC - BTS

ГГC - Public address (PA)

Overall dimensions of HS-CB



While mounting, leave 80 mm free space from the surface B to connect the Product

SOCKET CBP1

Description

Socket to connect portable talk-back station S4P to the system users. It is a remote communication station connected to CU-0131.

Features:

- waterproof;
- quick connector with protective cover.

Technical specifications

Parameter	Value
Operating temperature, °C	-40...+55
Weight, kg	0.6
IP rating	IP56
Mounting	wall

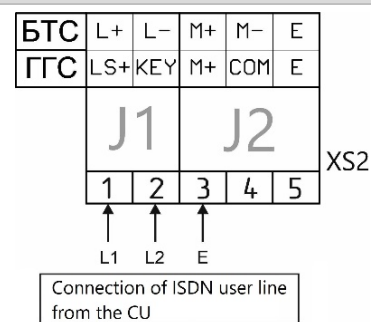
Description of PCB terminals

Contact	Function
L1	To connect ISDN user line
L2	
E	

Peripheral equipment

portable talk-back station S4P.

Connection diagram

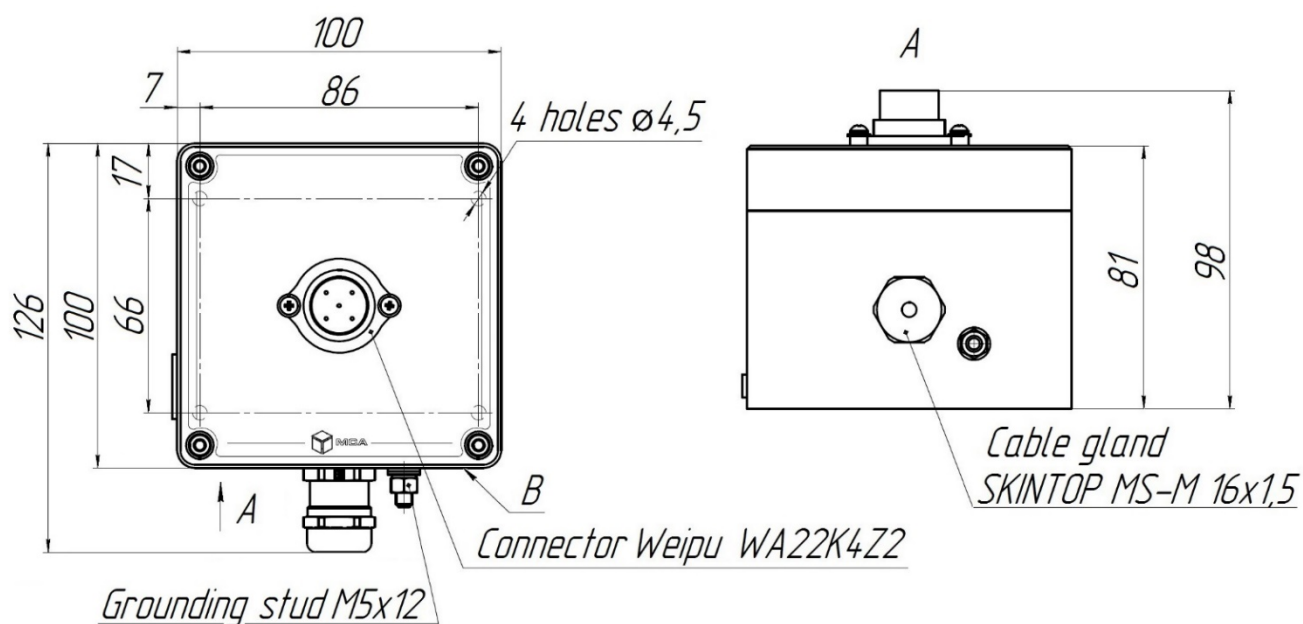


Note

BTC - BTS

ГТС - Public address (PA)

Overall dimensions of CBP1



While mounting, leave 110 mm free space from the surface B to connect the Product

SIGNAL CONVERTER ST2

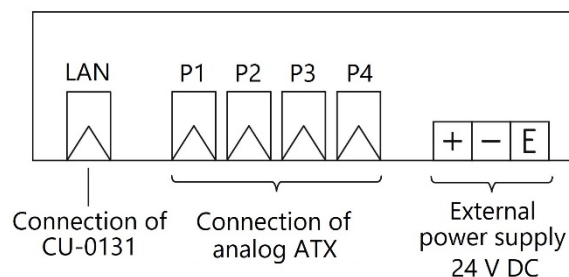
Description

Designed to connect loudspeaker and public address systems (produced by «NPK MSA» LLC) to external analog ATX.

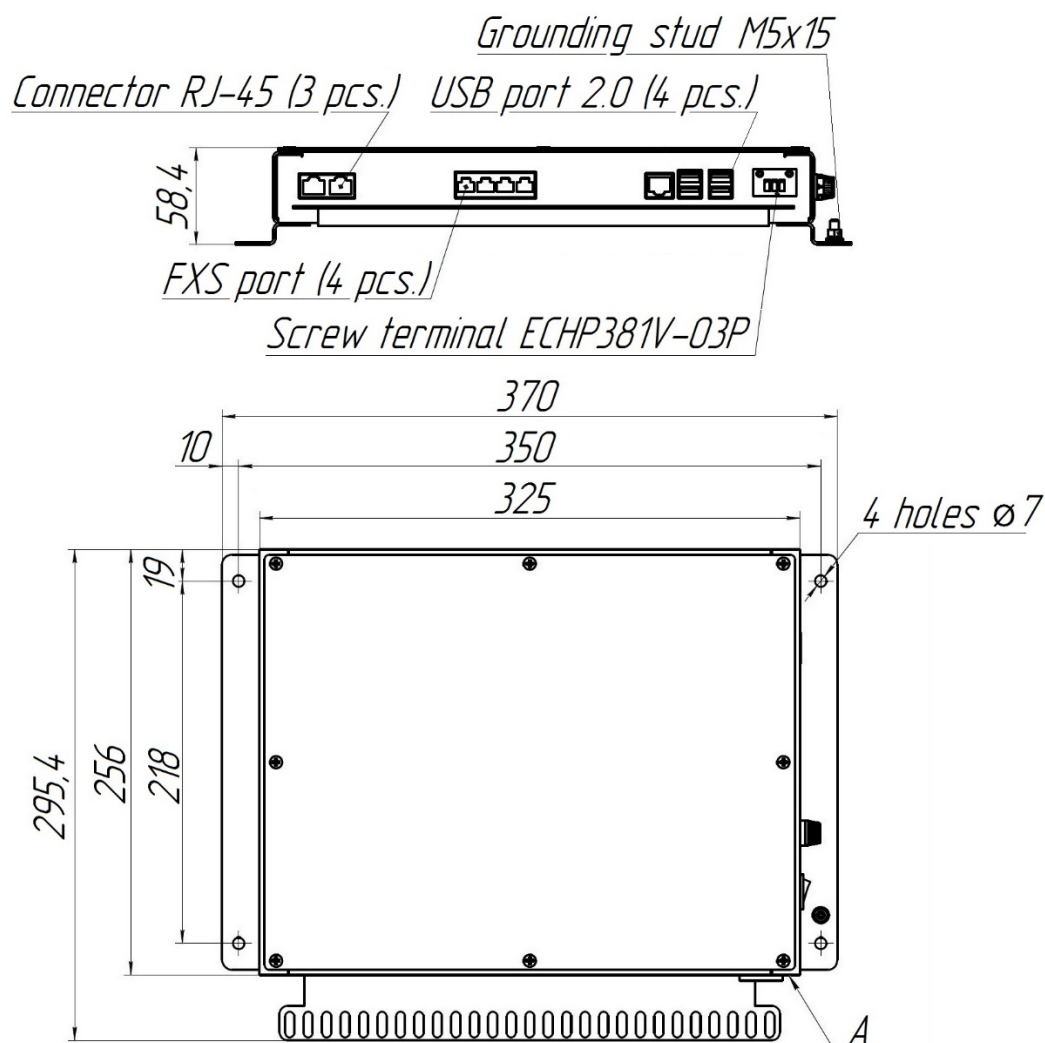
Feature – converts Ethernet signals into FXO and vice versa.

Technical specifications	
Parameter	Value
Power supply voltage, V	24 DC
Power consumption, W	22
Number of FXO ports, pcs.	4
Number of Ethernet ports, pcs.	1
Operating temperature, °C	-15...+55
Weight, kg	4.2
IP rating	IP22
Mounting	wall

Connection diagram



Overall dimensions of ST2



While mounting, leave 80 mm free space from the surface A to connect the Product

JUNCTION BOX KP-124PW

Description

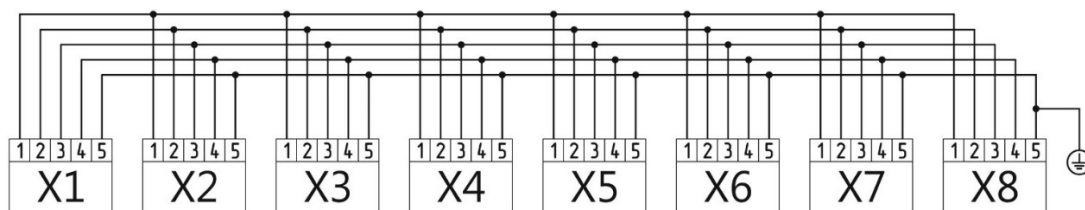
Splits input lines to 7 outputs.

Feature – waterproof.

Technical specifications

Parameter	Value
Number of terminals, pcs.	1 (input) and 7 (output)
Circuits in terminal, pcs.	4 + ground
Total passing current, A	15 (max. 5 per terminal)
Max. switching voltage, V	250
Operating temperature, °C	-40...+55
Weight, kg	2.1
IP rating	IP56
Mounting	wall

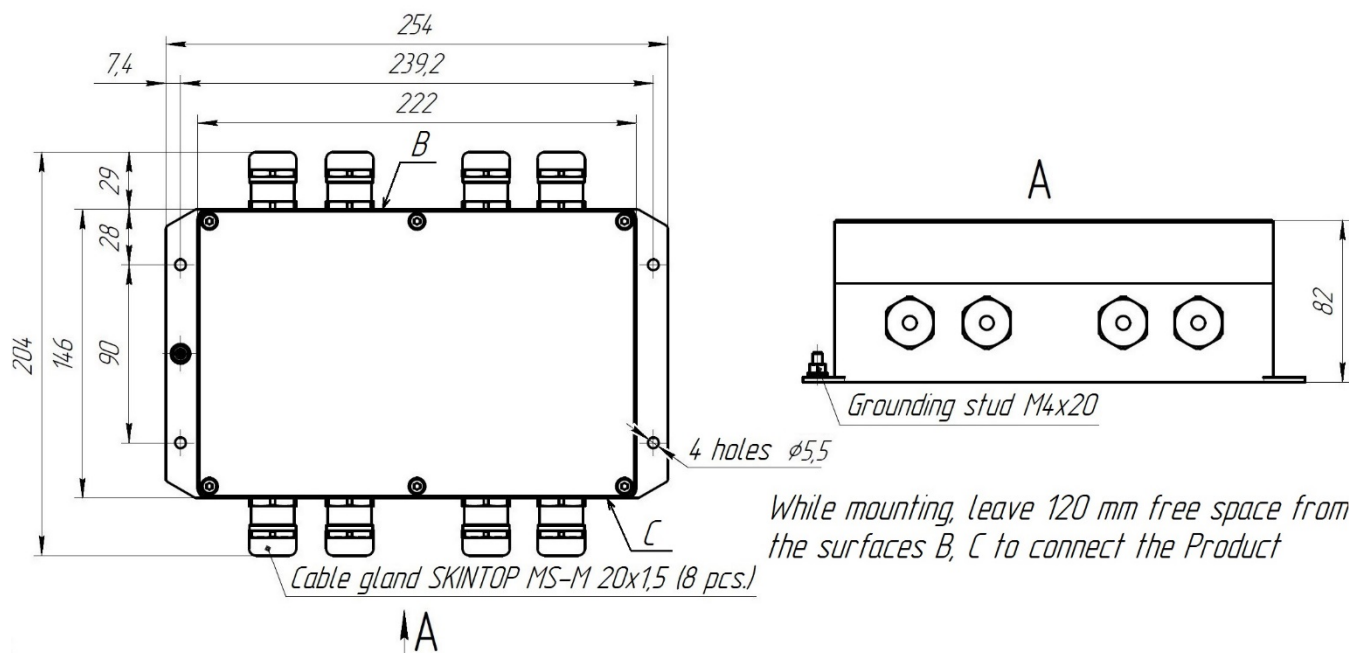
Connection diagram



Terminal	Function
X1	input
X2...X8	output 1...7

Note – Contact 5 is connected to ground bus for cable shield and grounding.

Overall dimensions of KP-124PW



Description

Feature – waterproof.

Technical specifications	
Parameter	Value
Number of terminals, pcs.	1 (input) and 3 (output)
Circuits in terminal, pcs.	5
Total passing current, A	15 (max. 5 per terminal)
Max. switching voltage, V	250 AC
Operating temperature, °C	-40...+55
Weight, kg	0.4
IP rating	IP56
Mounting	wall

Terminal	Function
J1	input
J2...J4	outputs 1...3

Technical drawing of the SKINTOP MS-M 20x1,5 cable gland assembly. The drawing shows a rectangular plate with dimensions 115x148 mm. It features four SKINTOP MS-M 20x1,5 cable glands (labeled B and C) and four M4x20 grounding studs (labeled A). The plate has four Ø4,5 holes at the corners. Dimensions include 6 mm for the top edge offset, 29 mm for the top edge offset, 15 mm for the top edge offset, 90 mm for the top edge offset, 60 mm for the top edge offset, and 103 mm for the top edge offset.

While mounting, leave 120 mm free space from the surfaces B, C to connect the Product

RELAY UNIT RB-139G

Types

RB-139G-220

RB-139G-24

Description

Controls external alarm units by signals received from UUs; ensures switching of external power supply to connected alarm devices.

Features:

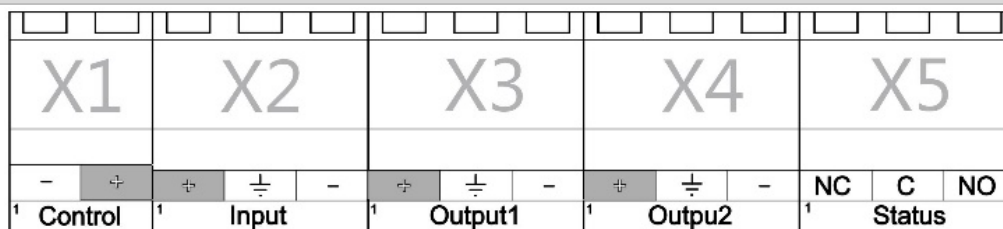
- waterproof;
- two signaling units may be connected;
- may be used together with substation panels SP-18*, SP-18W*, SP-36*, SP-36W* and talk-back stations S1, S1W, S1-5*, S2, S2-5*, S3*;
- sound and light signaling units with power supply 220 V 50 (60) Hz or 24 V DC may be connected.

* connect control signal of unit RB-139G type to terminals assigned to connect a signaling unit.

Technical specifications

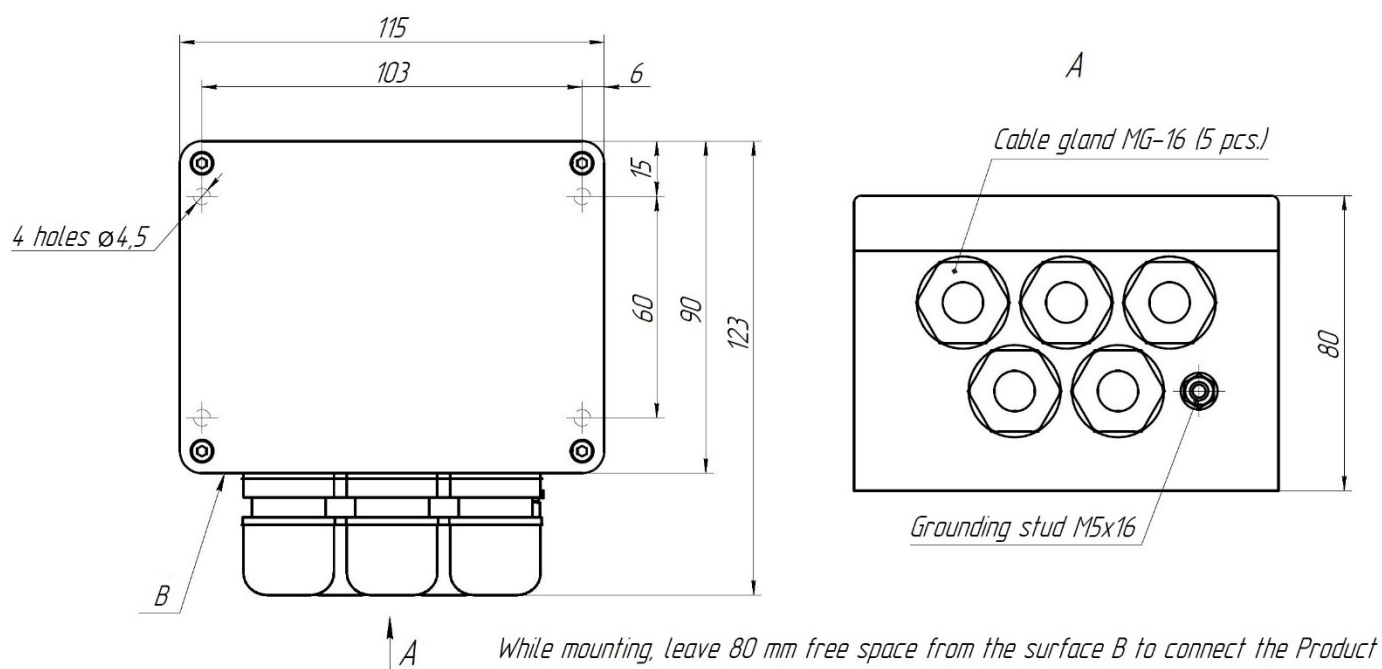
Parameter	Value	
	RB-139G-220	RB-139G-24
Switching voltage, V	220 AC	24 DC
Max. switching current, A	8	
Number of output terminals, pcs.	2	
Circuits in terminal	2 + ground	
Control signal	dry contact	
Operating temperature, °C	-40...+55	
Weight, kg	0.44	
IP rating	IP56	
Mounting	wall	

Connection diagram



Terminal	Function
X1	Connection of dry contact from substation panels and talk-back stations
X2	Connection of input voltage
X3, X4	Connection of signaling unit №1 and №2
X5	Control of relay contacts status (closed or opened)

Overall dimensions of RB-139G



CONNECTION DIAGRAM OF SIGNALING UNITS TO RELAY UNIT **RB-139G**

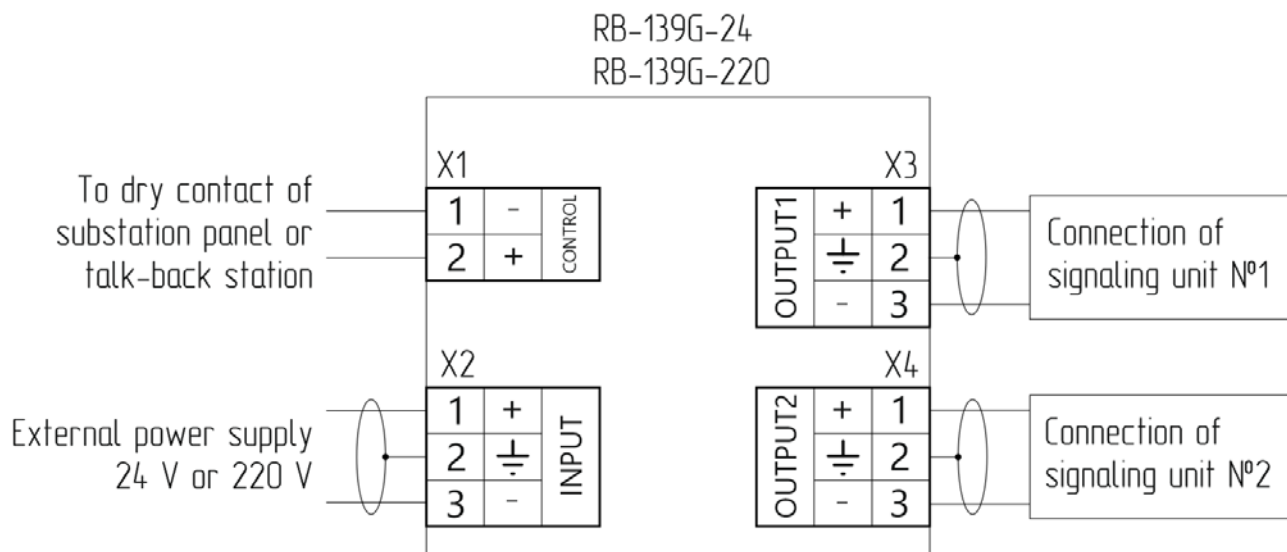


Figure 11 – Example of signaling units connection to relay unit RB-139G type

Note – Depending on UU, grounding may be marked on PCB as: «**E**», «**L**», «**///**» or « **$\frac{+}{-}$** ».

MATCHING TRANSFORMER T-140B

Types

T-140B-U1
T-140B-U2
T-140B-U3

Description

Designed to convert sound signal amplitude within wide bandwidth.

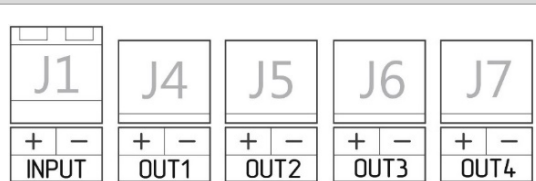
Features:

- waterproof;
- loudspeakers may be connected to zones with operating voltage 12 V, 24 V or 48 V;
- galvanic isolation of windings – 2 kV.

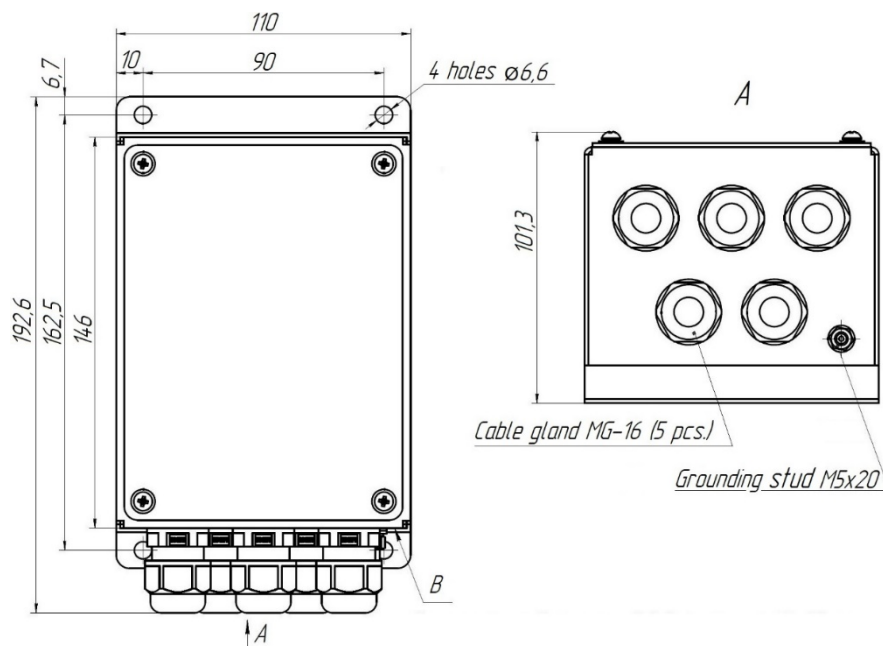
Technical specifications

Parameter	Value		
	T-140B-U1	T-140B-U2	T-140B-U3
Operating bandwidth, Hz	50 ... 15000		
Input voltage, V	12	24	48
Output voltage, V	100		
Max. output power, W	50		
Operating temperature, °C	-40...+55		
Weight, kg	2.43		
IP rating	IP56		
Mounting	wall		

Connection diagram

	Terminal	Function
	J1	Connection of PA line (zone) with operating voltage 12 V, 24 V or 48 V
	J4...J7	Connection of loudspeakers №1...№4 with operating voltage 100 V

Overall dimensions of T-140B



CORD CE

Description

Designed to extend cord of external communication devices (microphones, headsets, intercom helmets).

Feature – waterproof.

Technical specifications

Parameter	Value
Length, m	See overall dimensions
Operating temperature, °C	–40...+55
Weight, kg	See overall dimensions
IP rating	IP56

Compatible SC

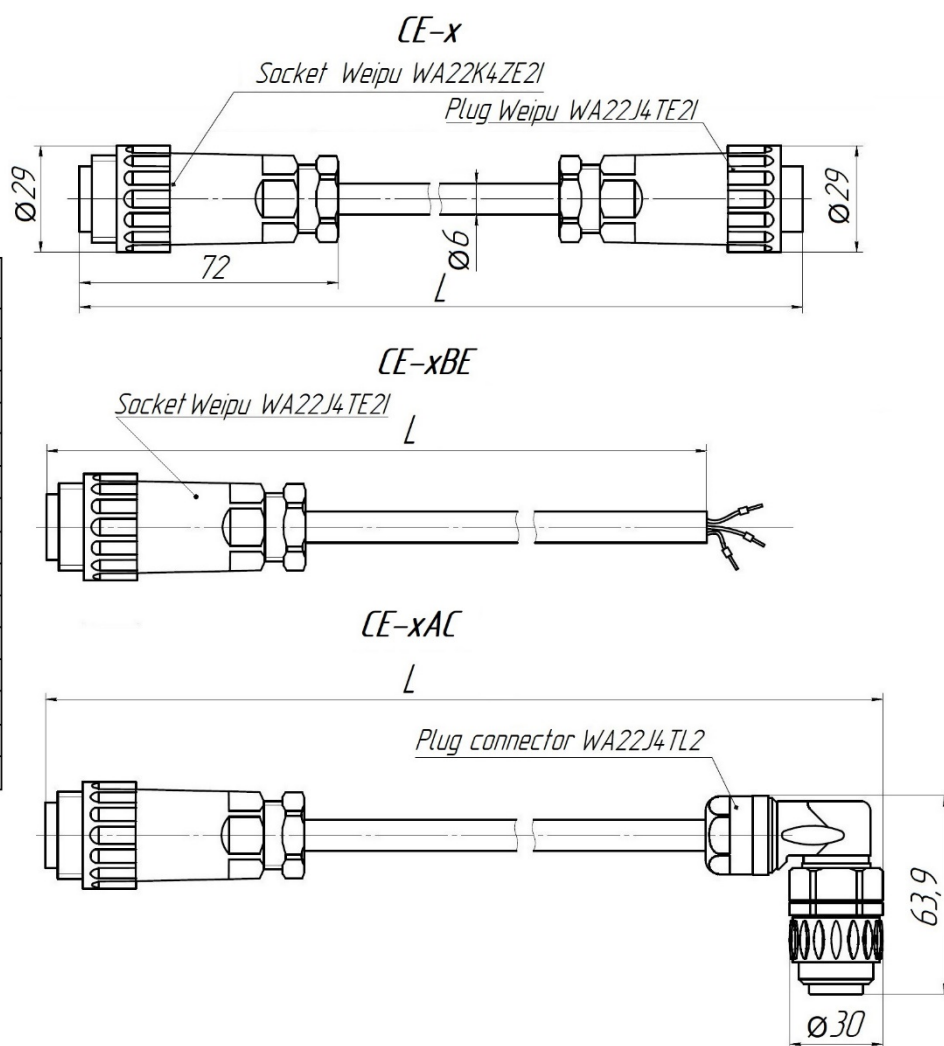
- microphones M3-W and M3-10W;
- headsets HS-4, HS-4C, HS-4AC.

Types

CE-x: socket – straight plug;
 CE-xBE: socket – bare ends;
 CE-xAC: socket – angle plug,
 where x – cord length.

Overall dimensions of CE

Code	L, m	Weight, kg
CE-1,5	1,5	0,093
CE-3	3,0	0,185
CE-5	5,0	0,240
CE-7	7,0	0,314
CE-10	10,0	0,450
CE-1,5BE	1,5	0,063
CE-3BE	3,0	0,125
CE-5BE	5,0	0,210
CE-7BE	7,0	0,294
CE-10BE	10,0	0,420
CE-1,5AC	1,5	0,083
CE-3AC	3,0	0,145
CE-5AC	5,0	0,230
CE-7AC	7,0	0,314
CE-10AC	10,0	0,440



FOOT SWITCH FB1

Description

Designed to switch on and off a microphone of communication device when manual control is not available.

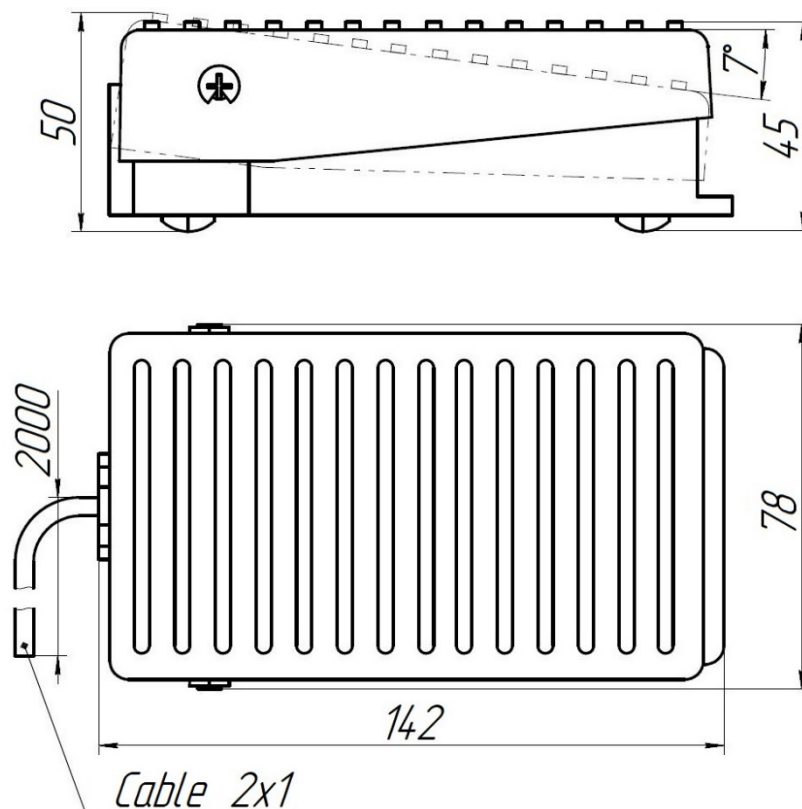
Features:

- may be used together with substation panels SP-18, SP-18W, SP-36, SP-36W;
- delivered with standard 2 m cable;
- operator's hands are free.

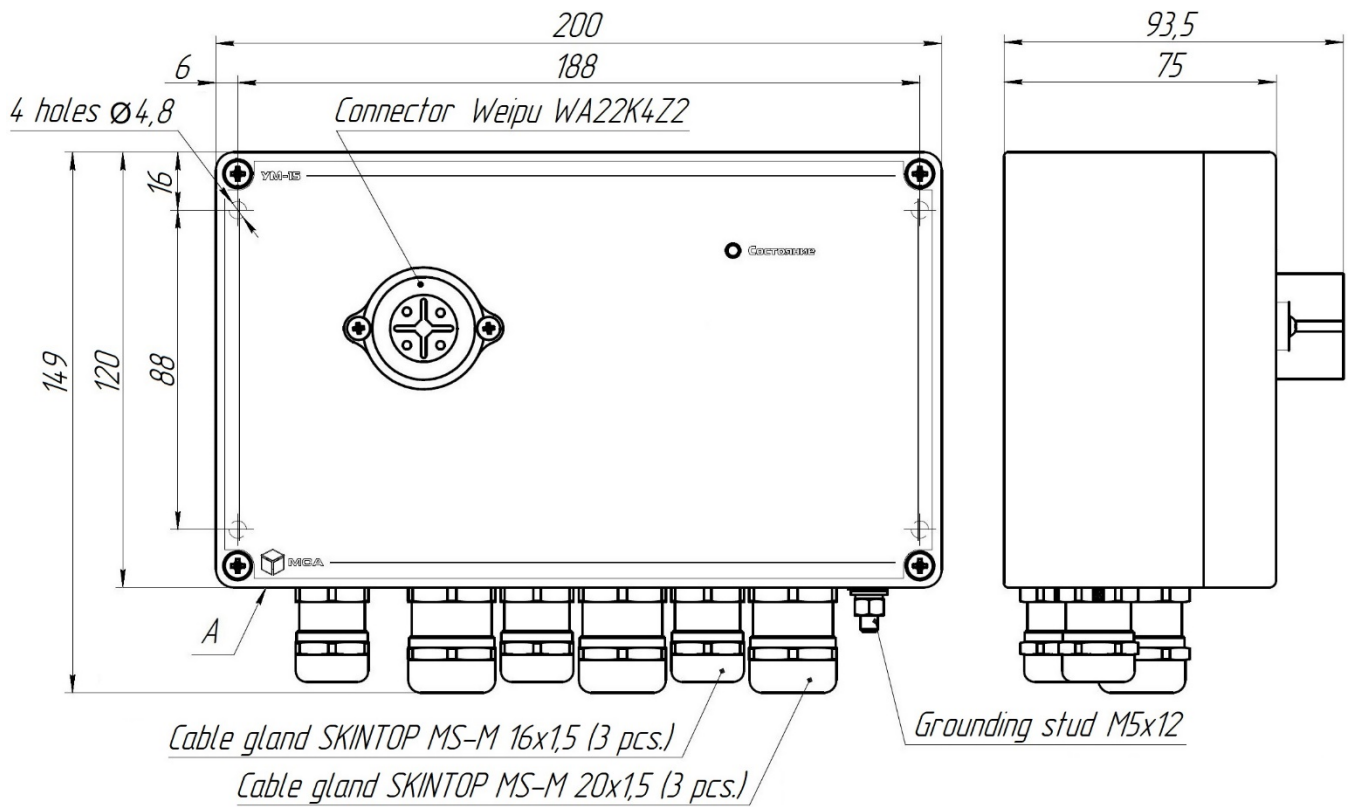
Technical specifications

Parameter	Value
Max. switching voltage, V	250
Max. switching current, A	4
Type of output signal	dry contact
Type and number of contacts, pcs.	1 normally opened
Operating temperature, °C	-15...+55
Weight, kg	0.48
IP rating	IP44
Mounting	Desk-top

Overall dimensions of FB1



Overall dimensions of TPA-15



While mounting, leave 120 mm free space from the surface A to connect the Product

CONNECTION DIAGRAM OF PERIPHERAL EQUIPMENT TO AMPLIFIER TPA-15

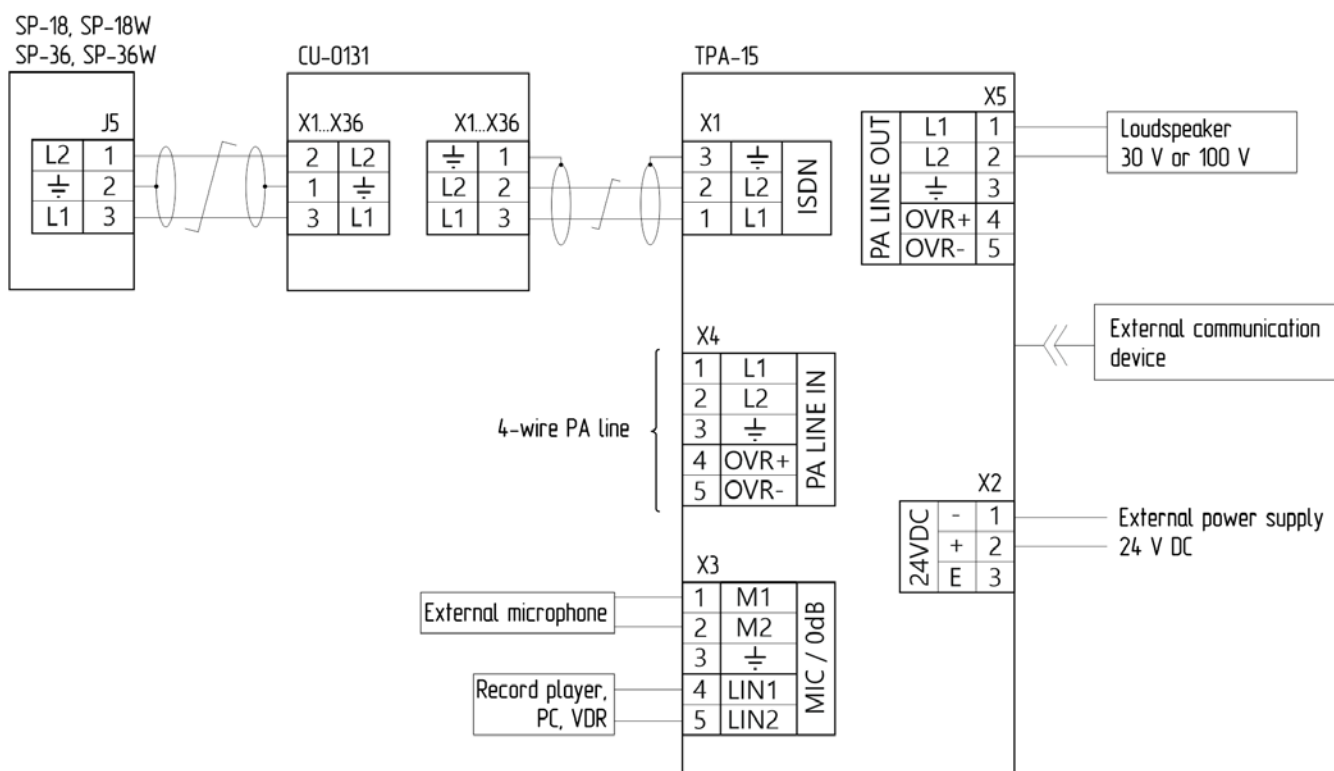


Figure 12 – Example of peripheral equipment connection to amplifier TPA-15

Note – Depending on UU, grounding may be marked on printed board as: «E», «», «» or «».

EXTERNAL COMMUNICATION DEVICES (MICROPHONES, HEADSETS)

MICROPHONE M1

Description

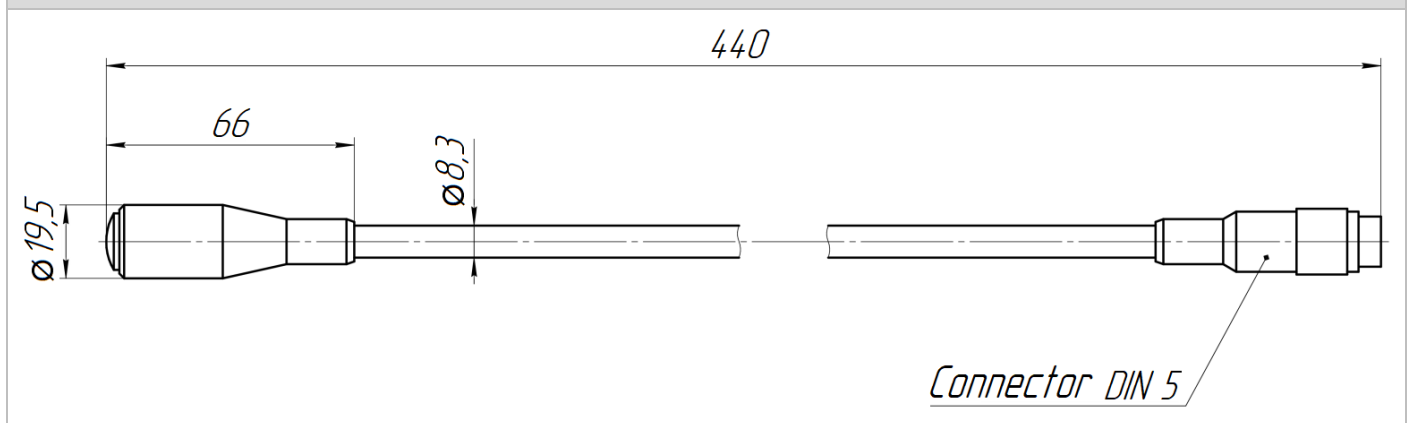
Gooseneck external communication device.

Feature – may be used together with substation panels SP-18, SP-36 and talk-back stations S2, S2-5.

Technical specifications

Parameter	Value
Type	electrete
Operating bandwidth, Hz	100 ... 20000
Sensitivity, mV/Pa	4.4
Impedance, Ohm	680
Connection	connector DIN 5-pin
Operating temperature, °C	-15...+55
Weight, kg	0.11
IP rating	IP44
Mounting in connector	substation panels, talk-back stations

Overall dimensions of M1



MICROPHONE M2

Description

External communication device with a PTT switch.

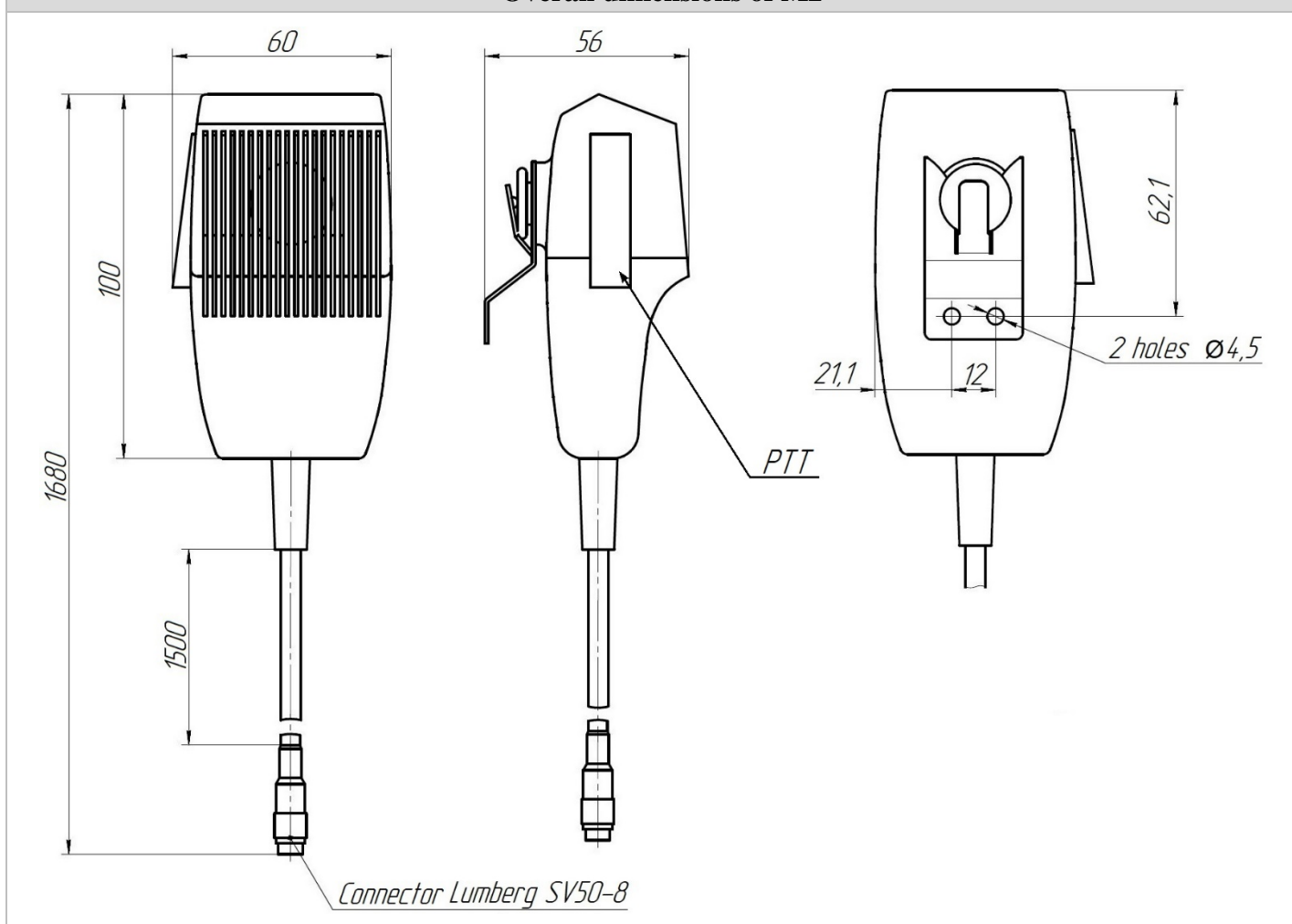
Features:

- may be used together with substation panels SP-18, SP-36 and talk-back stations S2, S2-5;
- delivered with a bracket to hold when the microphone is not in operation;
- equipped with a button to switch the microphone on/off (PTT).

Technical specifications

Parameter	Value
Type	dynamic
Operating bandwidth, Hz	250 ... 6000
Cable length, m	1.5 (stretched)
Sensitivity, dB	74
Connection	connector DIN 5-pin
Operating temperature, °C	-15...+55
Weight, kg	0.19
IP rating	IP44
Mounting	wall (on the bracket when the microphone is not in operation)

Overall dimensions of M2



MICROPHONE M3-W

Type

M3-W
M3-10W

Description

External communication device with a PTT switch.

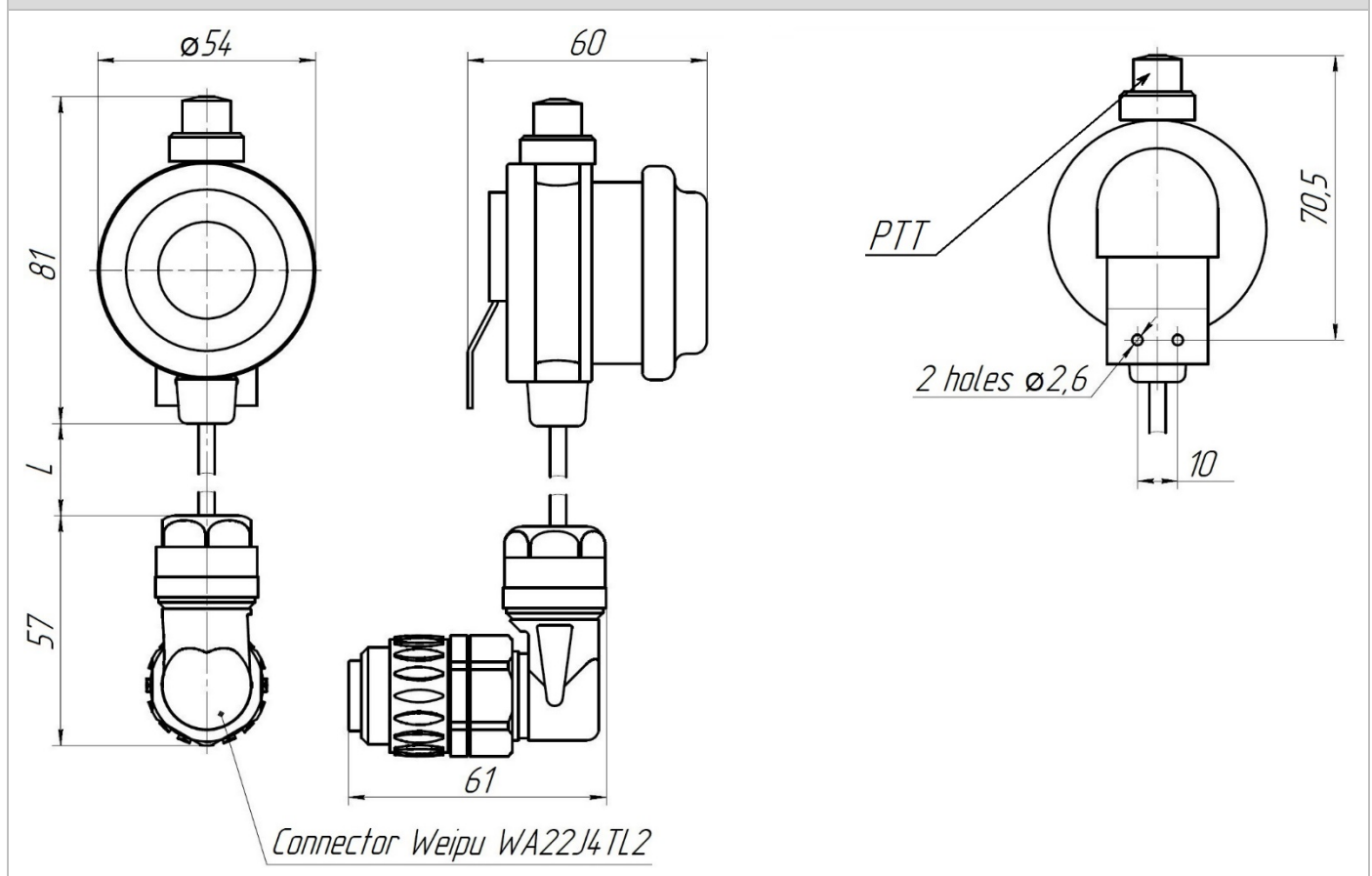
Features:

- waterproof;
- may operate together with user units SP-18W, SP-36W, S3, TPA-15 and SW-1;
- delivered with a bracket to hold the microphone when it is not in operation;
- equipped with a button to switch the microphone on/off (PTT).

Technical specifications

Parameter	Value	
	M3-W	M3-10W
Type	dynamic	
Cable length, m	3 (stretched)	10
Operating bandwidth, Hz	200 ... 10000	
Sensitivity, mV/Pa	5	
Connection	circular connector 4-pin	
Operating temperature, °C	-40...+55	
Weight, kg	0.3	0.6
IP rating	IP56	
Mounting	wall (on the bracket the microphone when it is not in operation)	

Overall dimensions



HEADSET HS-4

Type

HS-4
 HS-4C
 HS-4AC

Description

External communication device for talk-back communication in noisy areas.

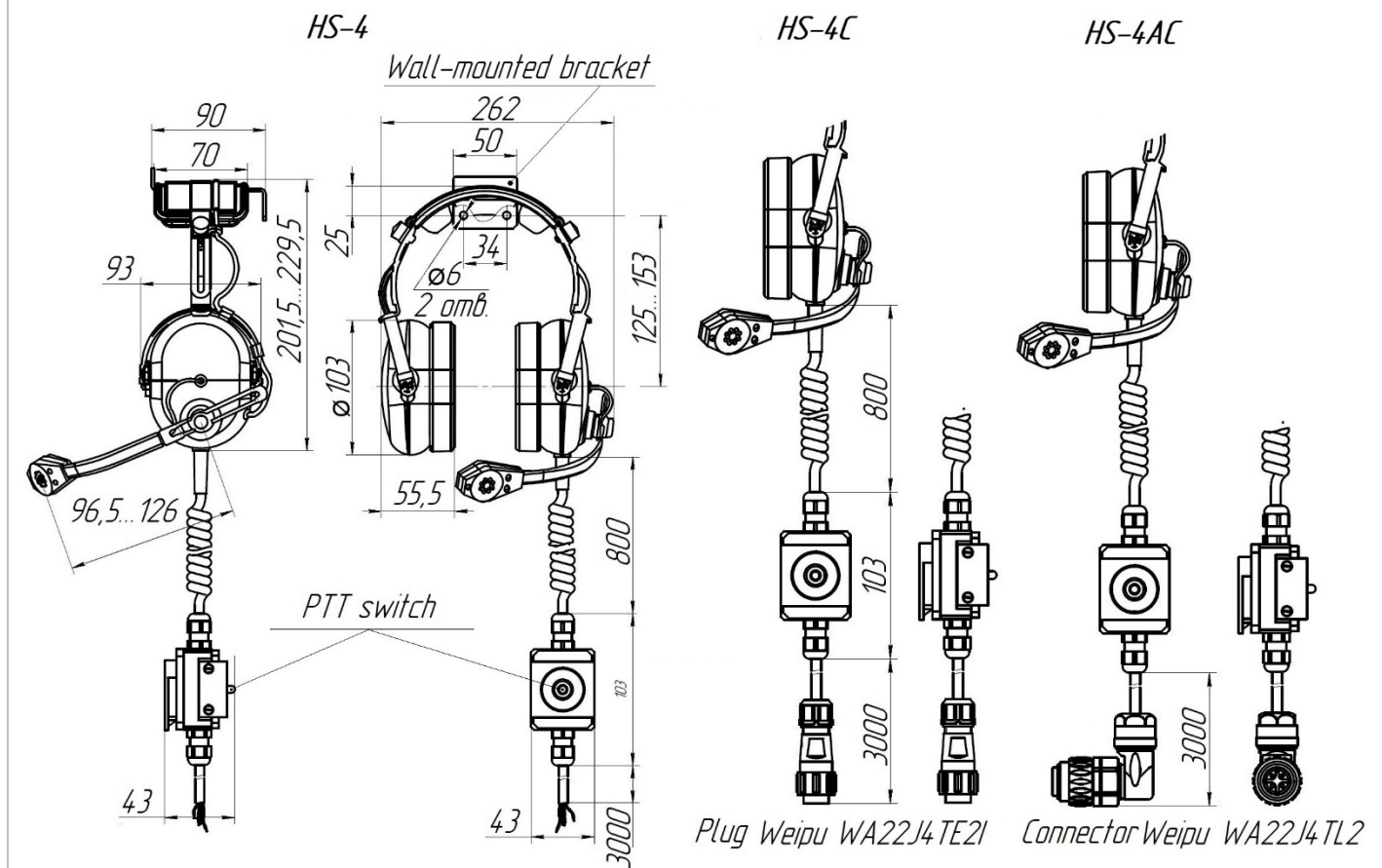
Features:

- may operate together with user units SP-18, SP-36 and S3 (if applied socket HS-CB);
- to connect to SP-18W, SP-36W, S3, TPA-15;
- waterproof;
- equipped with a PTT switch;
- delivered with a bracket to hold the microphone when it is not in operation.

Technical specifications

Parameter	Value		
	HS-4	HS-4C	HS-4AC
Connection type	bare ends	straight plug 4-pin	angle plug 4-pin
Cable length (headset – PTT), m	0.8		
Cable length (headset – connector), m	3		
Type	passive, monophonic		
Max. noise level, dB	115		
Operating bandwidth, Hz	150 ... 7000		
Microphone noise reduction coefficient, frequency 150 Hz, dB, min.	10		
Microphone close-talking sensitivity, frequency 1000 Hz, mV/Pa	0.4 ... 1.1		
Headphones impedance, frequency 1000 Hz, Ohm	150 ± 30		
Operating temperature, °C	-40...+55		
Weight, kg	1.08		
IP rating	IP56		
Mounting	wall (on the bracket the microphone when it is not in operation)		

Overall dimensions of HS-4



LOUDSPEAKERS

LOUDSPEAKER LS-1

Types

LS-1
 LS-1/100

Description

Designed to ensure broadcasting and playback of acoustic signals.

Feature – cable gland.

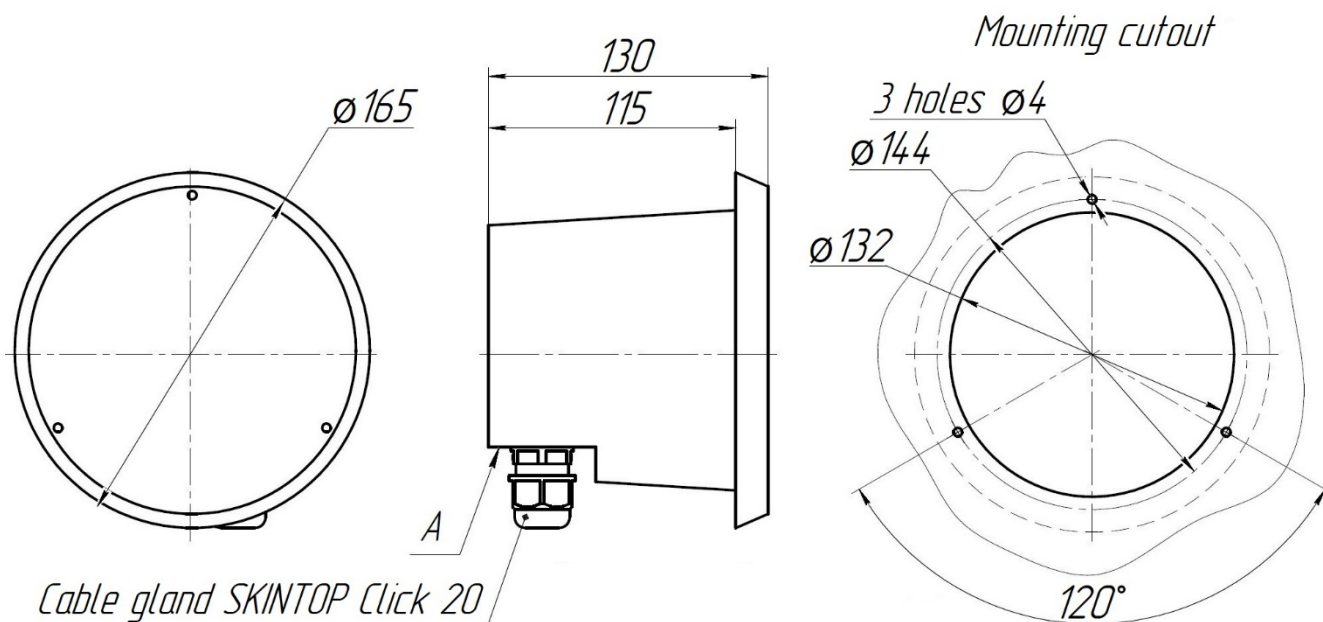
Technical specifications

Parameter	Value	
	LS-1	LS-1/100
Input voltage, V	30	100
Power, W	6.0	6.0; 3.0; 1.5; 0.5
Operating bandwidth, Hz	140 ... 20000	
Max. sound pressure, dB	90	
Operating temperature, °C	-15...+55	
Weight, kg	0.6	0.7
IP rating	IP22	
Material	aluminum	
Mounting	built-in (ceiling)	

LS-1/100 connection

White wire	Red wire	Power, W
COM	6 W	6.0
	3 W	3.0
	1.5 W	1.5
	0.5 W	0.5

Overall and installation dimensions of LS-1



While mounting, leave 120 mm free space from the surface A to connect the Product

LOUDSPEAKER LS-2

Types

LS-2
LS-2/100

Description

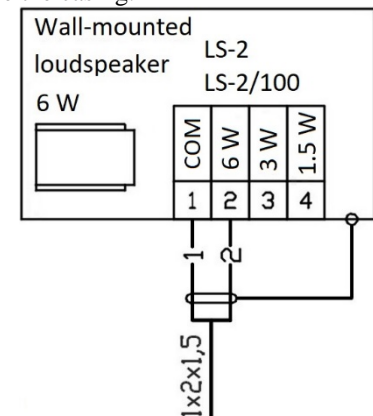
Designed to ensure broadcasting and playback of acoustic signals.

Technical specifications

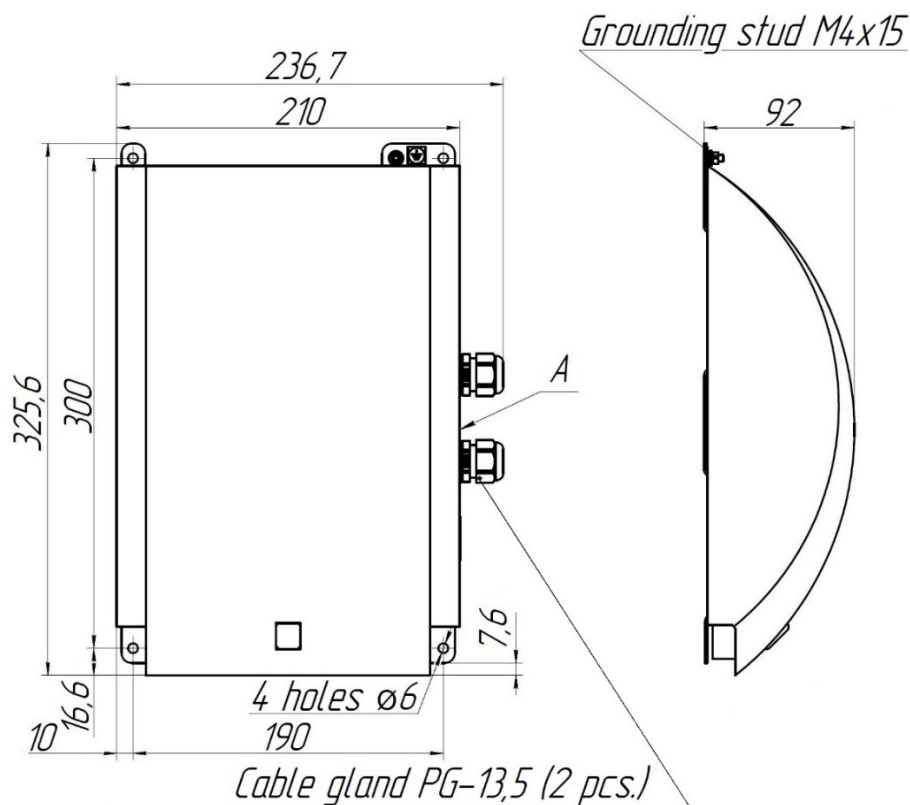
Parameter	Value	
	LS-2	LS-2/100
Input voltage, V	30	100
Power, W	6.0; 3.0; 1.5	
Operating bandwidth, Hz	125 ... 15000	80 ... 16000
Max. sound pressure, dB	96	91
Operating temperature, °C	-15...+55	
Weight, kg	1.90	1.86
IP rating	IP22	
Material	plastic	
Mounting	wall	

Connection diagram

Select power by connecting to the corresponding terminal. Lead cable through PG-13.5. Grounding stud is located inside the casing.



Overall dimensions of LS-2



LOUDSPEAKER LS-3

Types

LS-3/10
 LS-3/15
 LS-3/100/10
 LS-3/100/15
 LS-3/100/30

Description

Horn loudspeaker to ensure broadcasting and different acoustic notification signals.

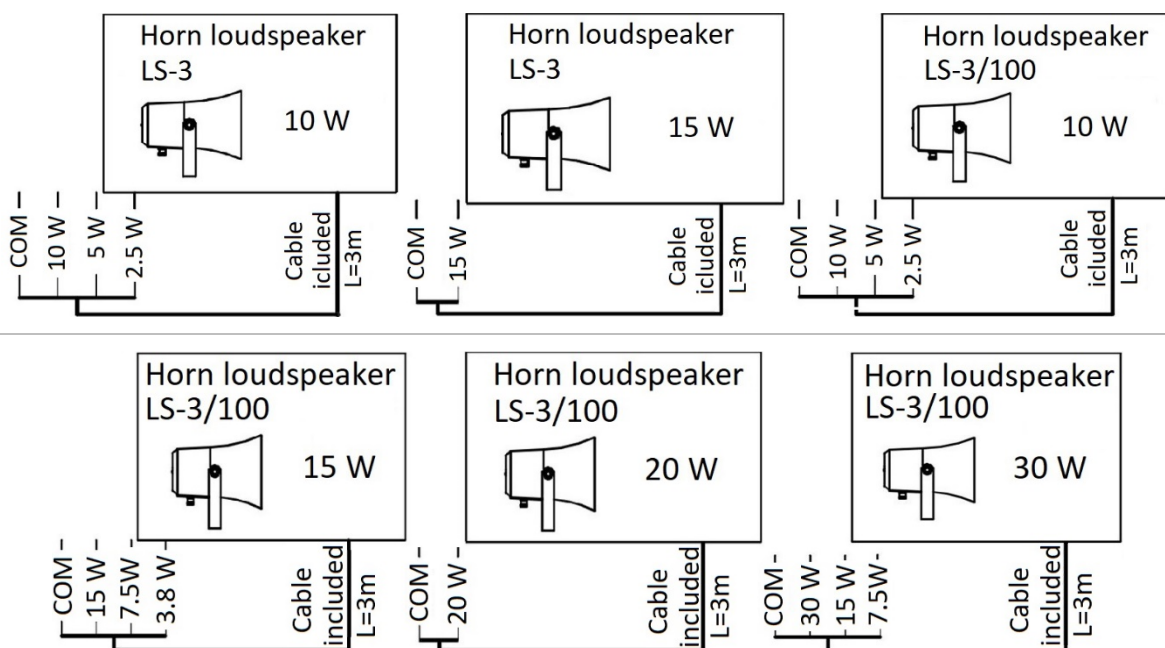
Features:

- waterproof;
- delivered with standard 3m cable.

Technical specifications

Parameter	Value					
	LS-3/10	LS-3/15	LS-3/100/10	LS-3/100/15	LS-3/100/20	LS-3/100/30
Input voltage, V	30		100			
Power, W	10	15	10	15	20	30
Operating bandwidth, Hz	400...9000	330...8000	400...9000	300...9000	310...8000	300...10000
Max. sound pressure, dB	106	108	106	108	110	110
Weight, kg	2.00	1.67	2.00	2.23	2.23	2.36
IP rating	IP56					
Operating temperature, °C	-40...+55					
Mounting	wall (on a bracket)					

Connection diagram



Overall dimensions of loudspeakers

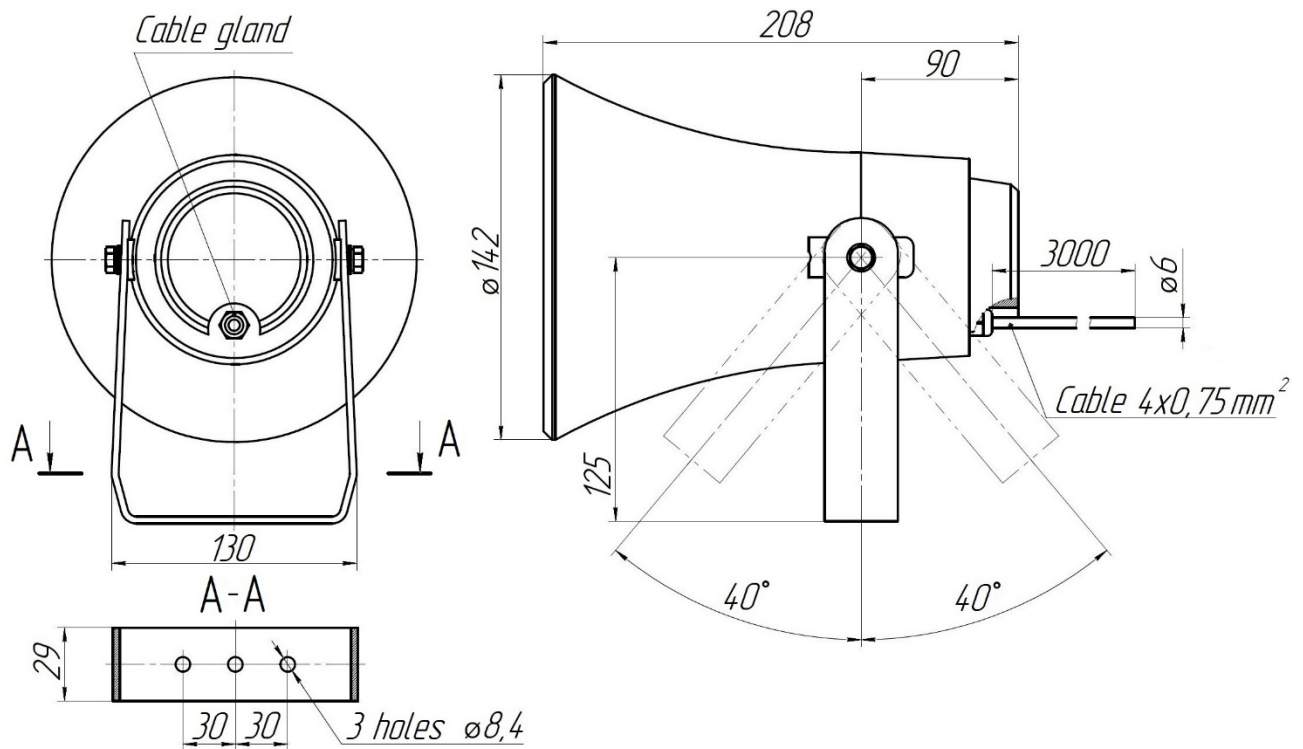


Figure 13 – Overall and installation dimensions of LS-3/10

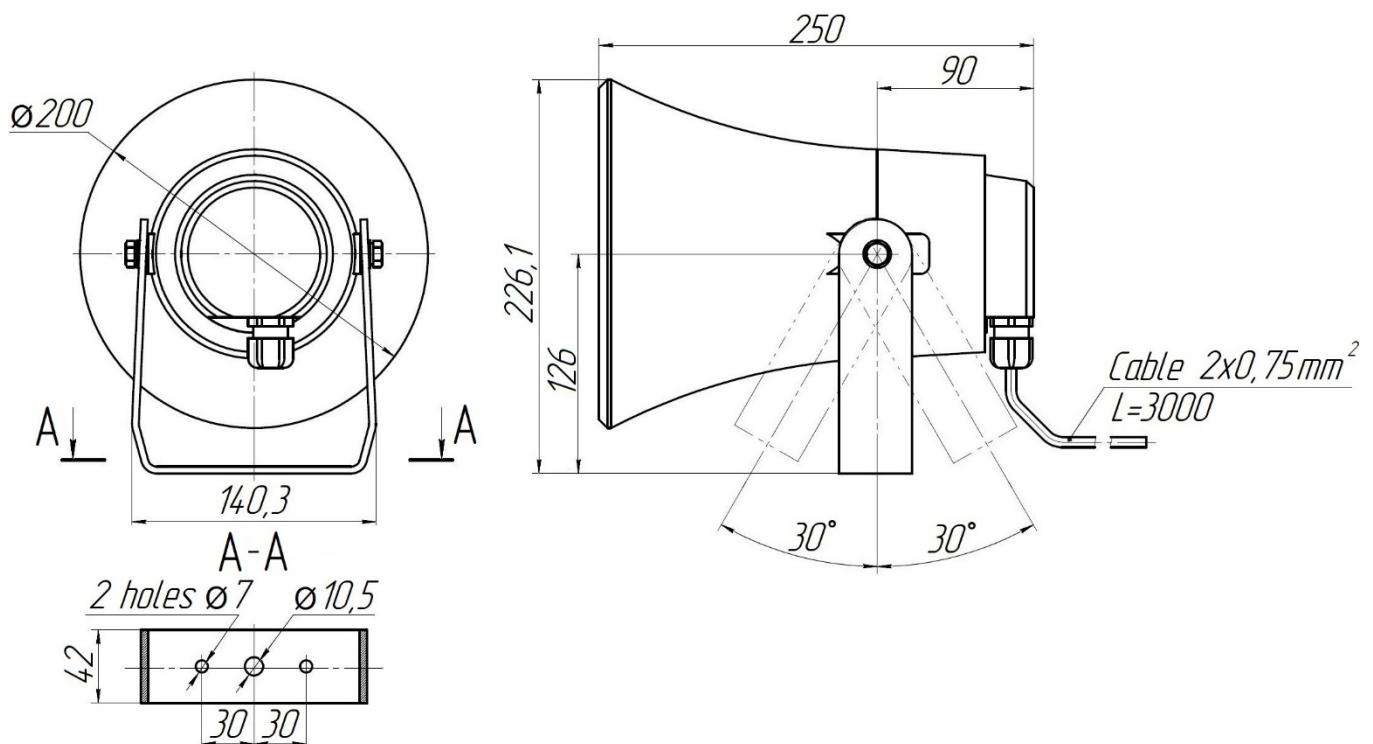


Figure 14 – Overall and installation dimensions of LS-3/15

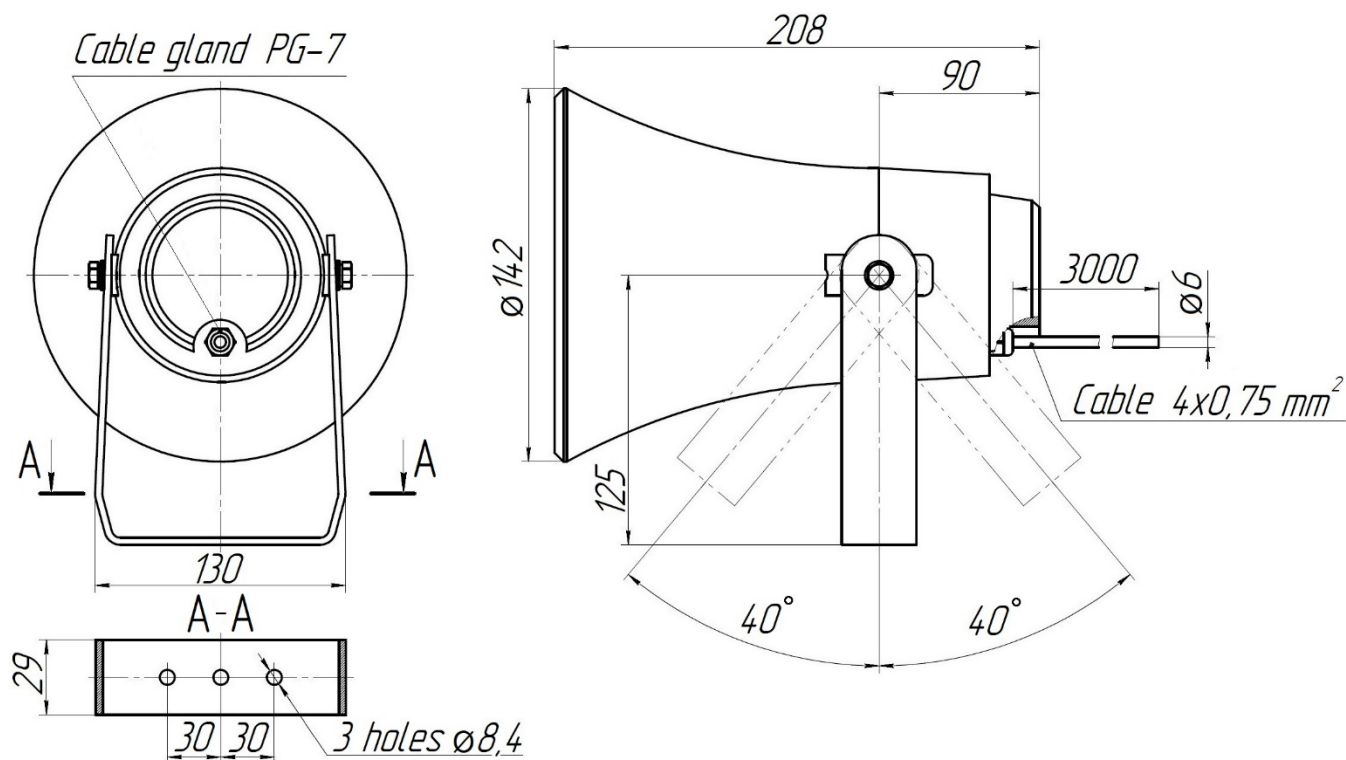
Overall dimensions of loudspeakers


Figure 15 – Overall and installation dimensions of LS-3/100/10

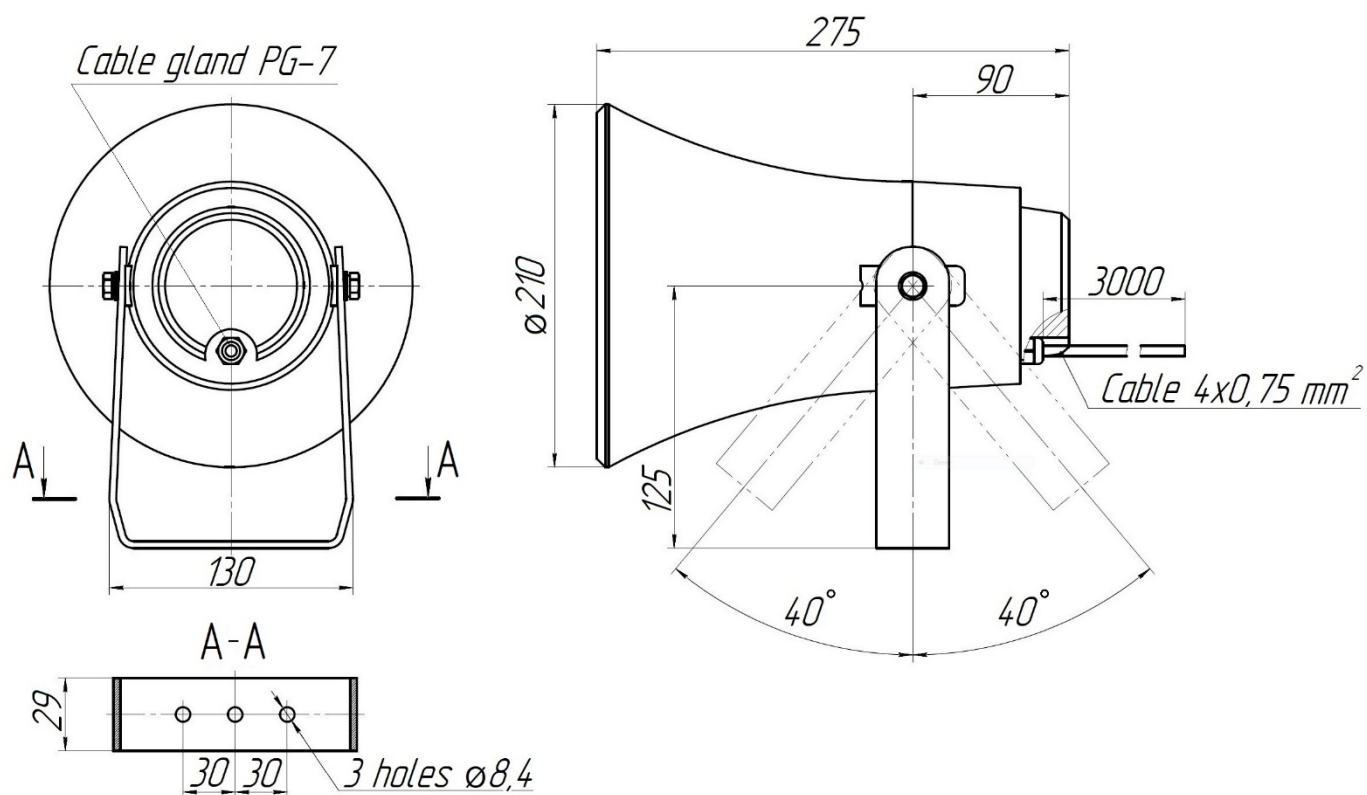


Figure 16 – Overall and installation dimensions of LS-3/100/15

Overall dimensions of loudspeakers

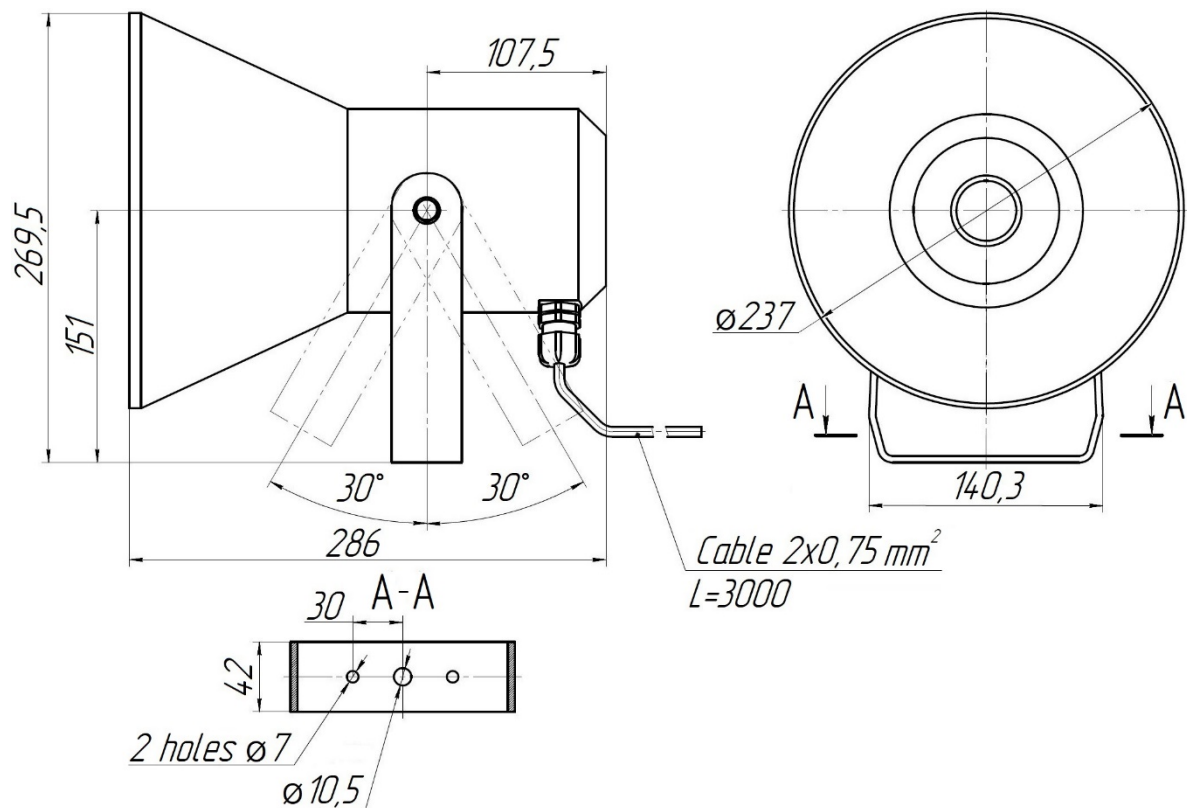


Figure 17 – Overall and installation dimensions of LS-3/100/20

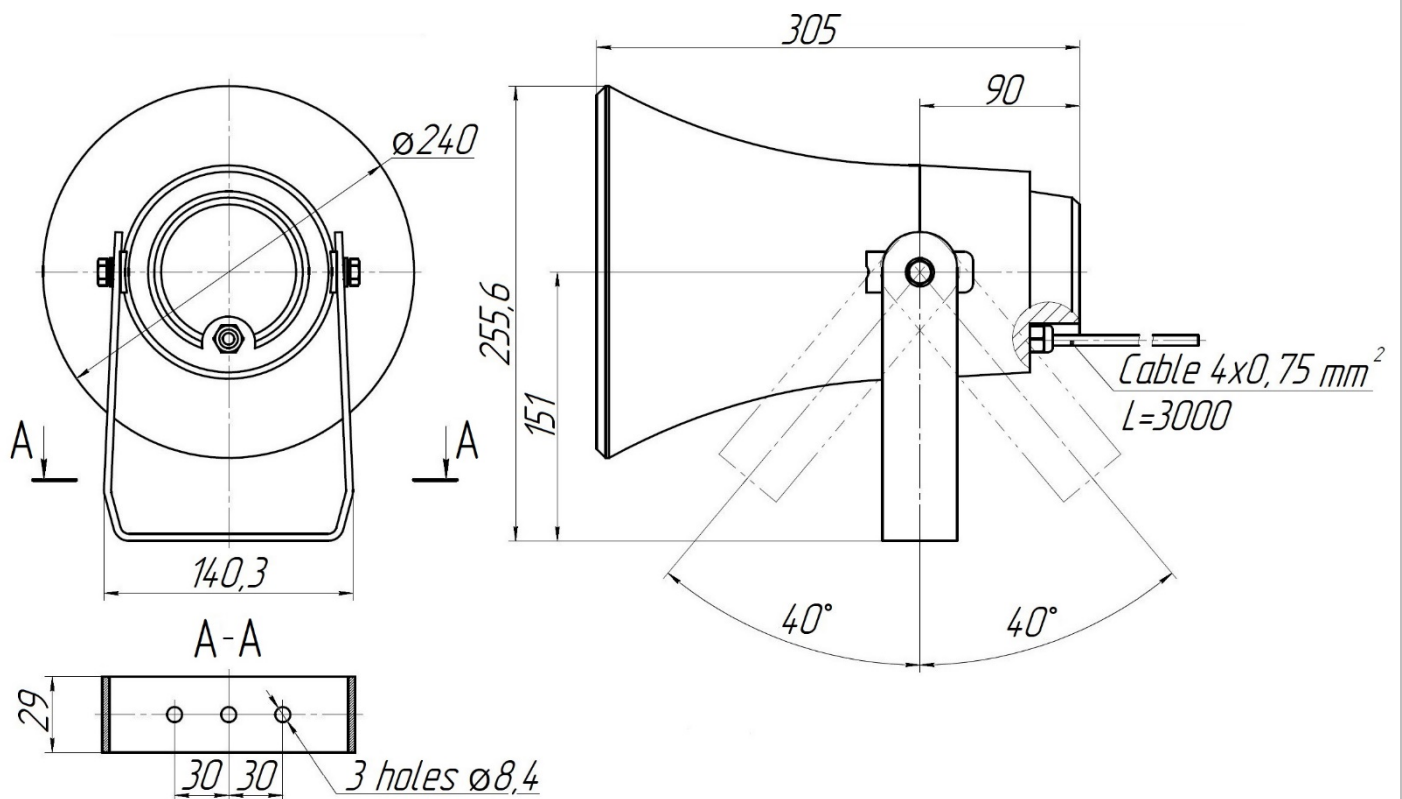


Figure 18 – Overall and installation dimensions of LS-3/100/30

LOUDSPEAKER LS-7

Types

LS-7
 LS-7/100

Description

Designed to ensure broadcasting and different acoustic notification signals.

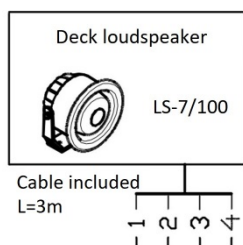
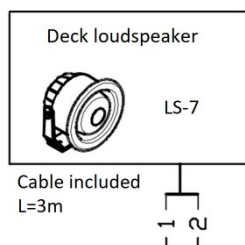
Features:

- waterproof;
- delivered with standard 3m cable.

Technical specifications

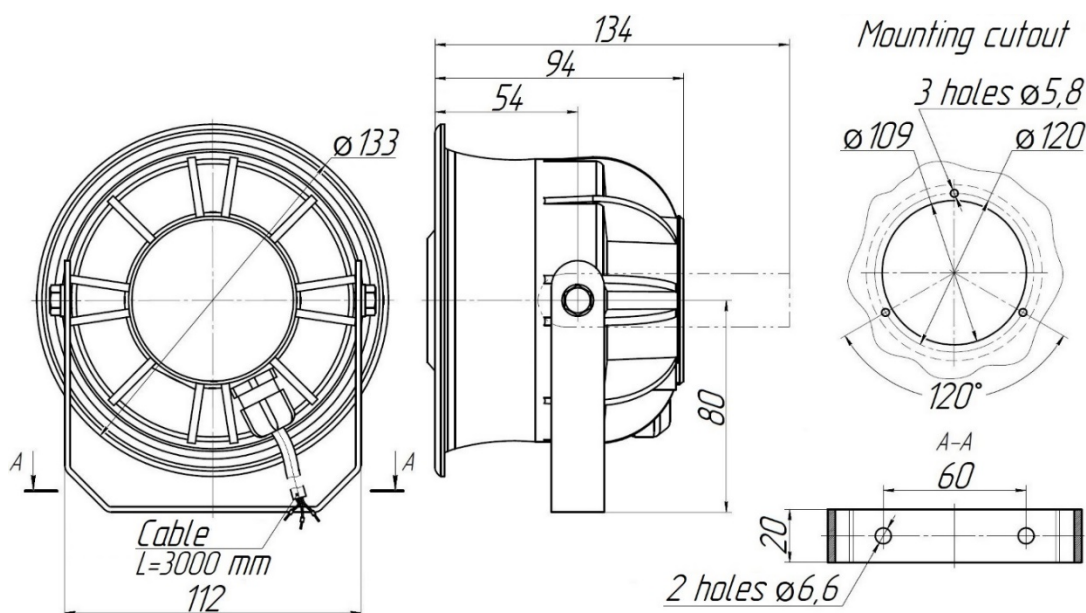
Parameter	Value	
	LS-7	LS-7/100
Input voltage, V	30	100
Power, W	8.0	8.0; 4.0; 2.0; 1.5; 0.7; 0.4
Operating bandwidth, Hz	300 ... 20000	
Max. sound pressure, dB	101	
Weight, kg	0.83	0.88
IP rating	IP56	
Material	plastic	
Operating temperature, °C	-40...+55	
Mounting	wall (on a bracket); built-in	

Connection diagram of LS-7 and LS-7/100



Connection of LS-7/100		
Wire №		Power, W
1	2	8,0
2	3	4,0
3	4	2,0
1	3	1,5
2	4	0,7
1	4	0,4

Overall dimensions of LS-7 and LS-7/100



LOUDSPEAKER LS-8

Types

LS-8/10
LS-8/25
LS-8/100/10
LS-8/100/25
LS-8/100/50

Description

Horn loudspeaker ensures broadcasting and transmission of different acoustic notification signals.

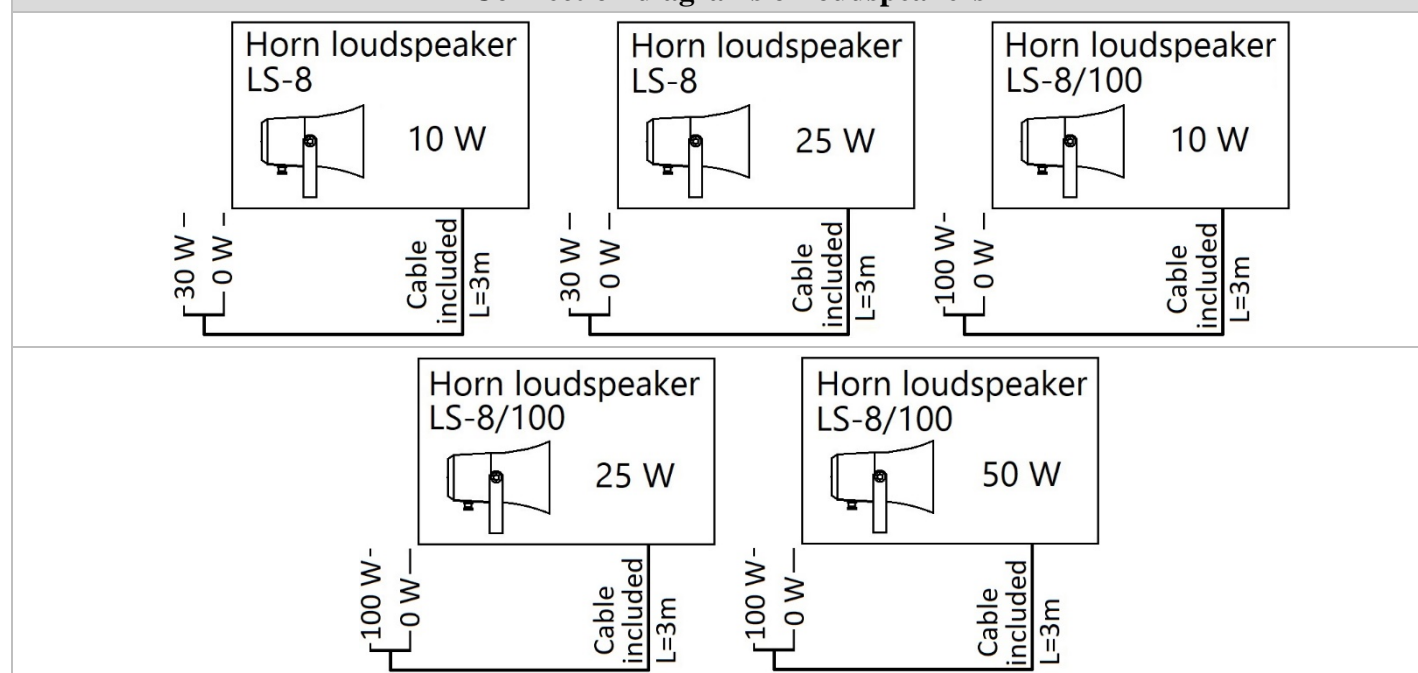
Features:

- waterproof;
- delivered with standard 3 m cable.

Technical specifications

Parameter	Value				
	LS-8/10	LS-8/25	LS-8/100/10	LS-8/100/25	LS-8/100/50
Input voltage, V	30		100		
Power, W	10; 5.0; 2.5	25.0; 12.5; 6.0	10.0; 5.0; 2.5	25.0; 12.5; 6.0	50.0; 25.0; 12.5
Operating bandwidth, Hz	300...5000	250...5000	300...5000	250...5000	250...5000
Max. sound pressure, dB	107	114	107	114	112
Weight, kg	2.4	2.65	2.4	2.7	3.4
IP rating	IP56				
Material	aluminum				
Operating temperature, °C	-40...+55				
Mounting	wall (on a bracket)				
Overall dimensions	Figure 19	Figure 20	Figure 19	Figure 20	Figure 21

Connection diagrams of loudspeakers



Overall dimensions

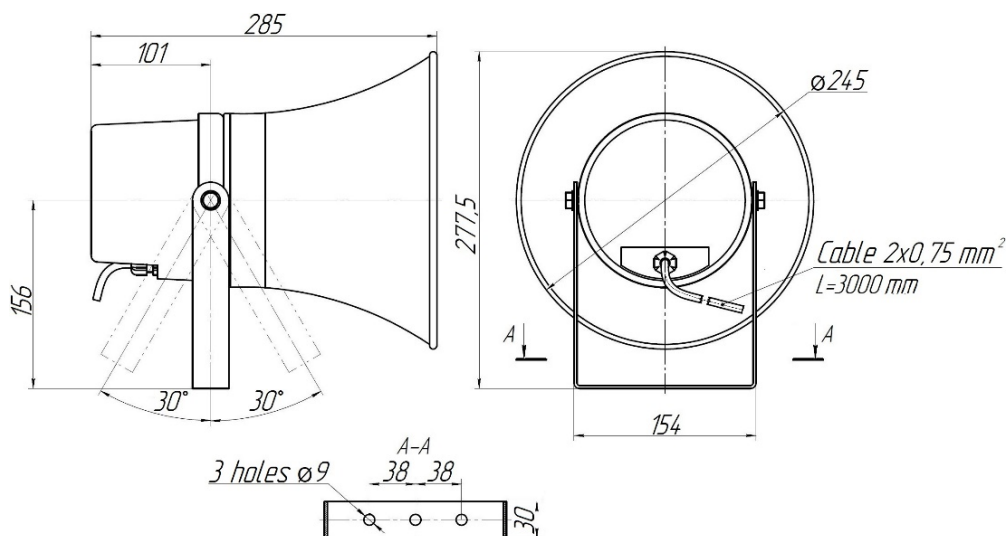


Figure 19 – Overall and installation dimensions of LS-8/10, LS-8/100/10

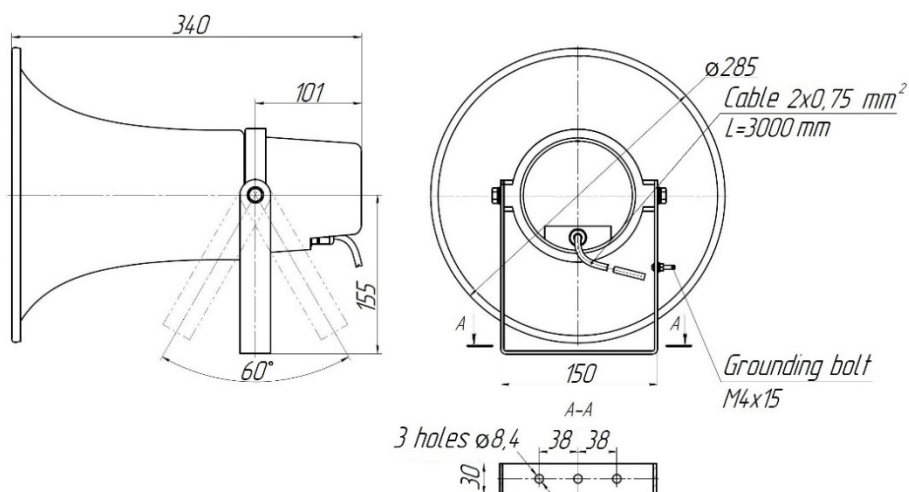


Figure 20 – Overall and installation dimensions of LS-8/25, LS-8/100/25

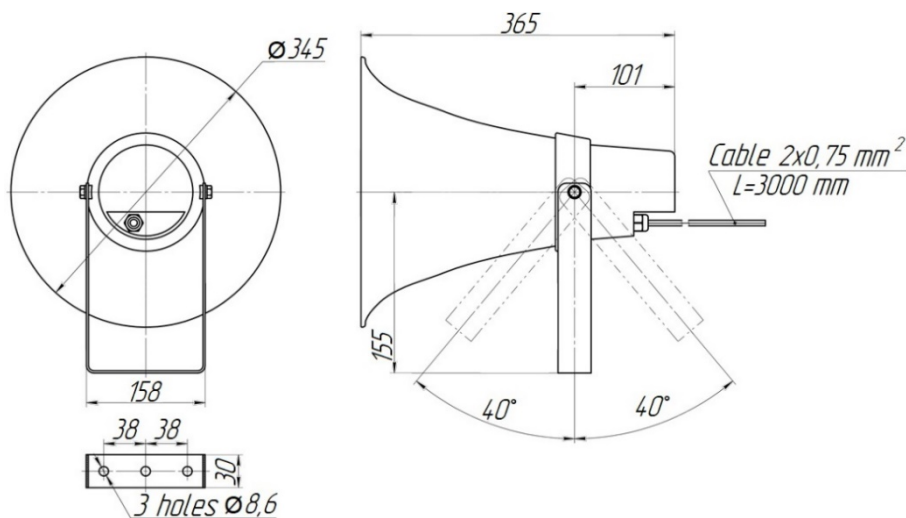


Figure 21 – Overall and installation dimensions of LS-8/100/50

SIGNALING UNITS

ROTATING LAMP RL-24, RL-220

Type

RL-24-O or RL-220-O – orange
 RL-24-B or RL-220-B – blue
 RL-24-R or RL-220-R – red
 RL-24-G or RL-220-G – green

Description

Ensures light signaling on open deck and in noisy areas.

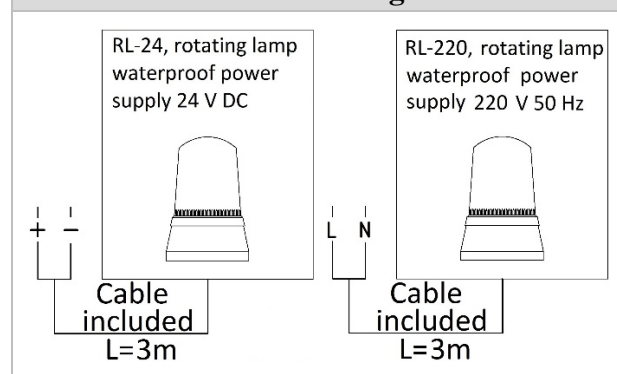
Features:

- waterproof;
- signaling unit is connected to user unit through relay unit RB-139G-24 (RB-139G-220) or directly (if built-in relay is available);
- wide choice of globe colours;
- delivered with standard 3 m cable.

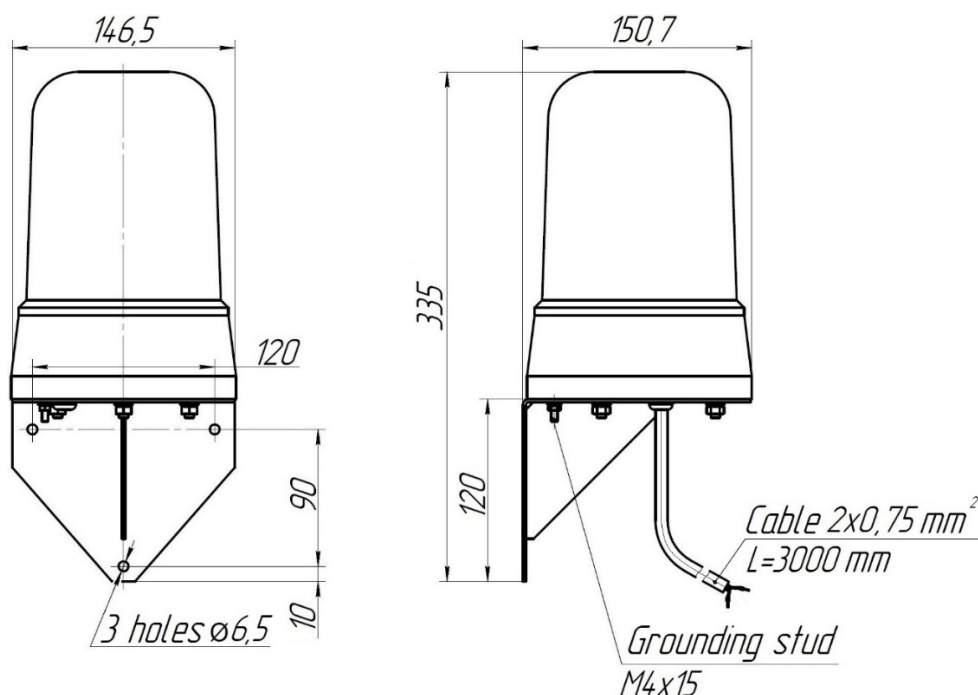
Technical specifications

Parameter	Value	
	RL-24	RL-220
Power supply voltage, V	24 DC	220 AC
Power consumption, W	70	40
Lamp type	flashing (rotating)	
Globe colour	orange, blue, red, green	
Rotation frequency, rot./min	180	
Operating temperature, °C	-40...+55	
Weight, kg	1.23	1.50
IP rating	IP56	
Mounting	wall (on a bracket)	

Connection diagram



Overall dimensions of RL-24, RL-220



IMPULSE LAMP FL-24

Types

FL-24-O – orange
 FL-24-B – blue
 FL-24-W – white
 FL-24-R – red
 FL-24-G – green

Description

Ensures light signaling on small areas of open deck and in noisy areas.

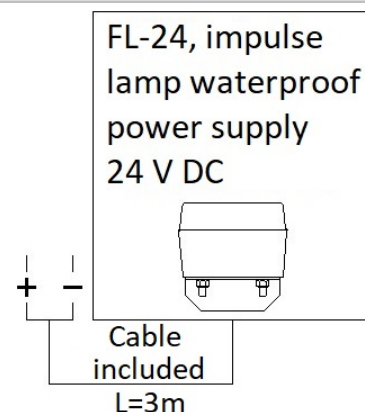
Features:

- waterproof;
- connect signaling unit to user unit through relay unit RB-139G-24 (RB-139G-220) or directly (if built-in relay is available);
- wide choice of globe colours;
- delivered with standard 3 m cable.

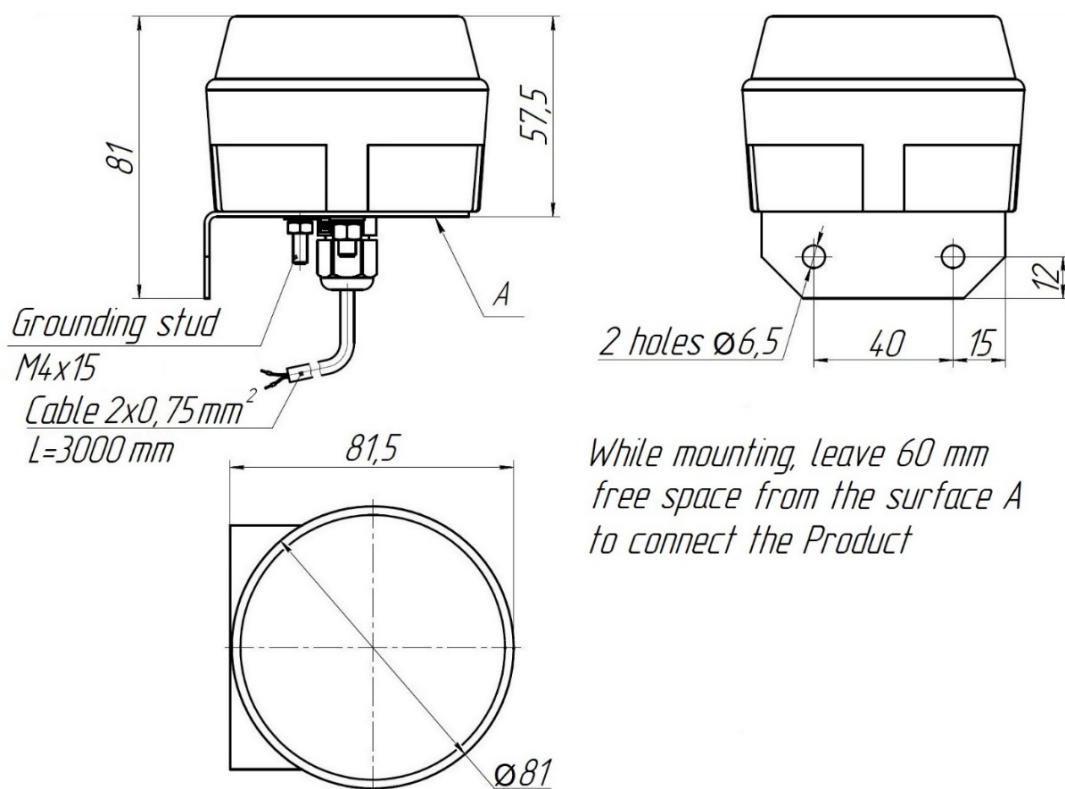
Technical specifications

Parameter	Value
Power supply voltage, V	24 DC
Power consumption, W	3
Lamp type	xenon
Luminous intensity, cd	11
Globe colour	orange, blue, white, red, green
Operating temperature, °C	-40...+55
Weight, kg	0.32
IP rating	IP56
Mounting	wall (on a bracket)

Connection diagram



Overall dimensions of FL-24



SIGNALING UNIT A-24, A-220

Types

A-24
A-220

Description

Ensures sound signaling in noisy areas. Loud sound alarm or warning signaling.

Features:

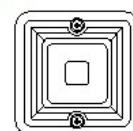
- waterproof;
- connect signaling unit to user unit through relay unit RB-139G-24 (RB-139G-220) or directly (if built-in relay is available);
- volume control and tone select (max. 10 tones to choose from);
- standard knock-out plug (stamped on the casing) to install cable gland or cable inlet.

Technical specifications

Parameter	Value	
	A-24	A-220
Power supply voltage, V	24 DC	220 AC
Power consumption, W	0.6	3
Output signal frequency, Hz	420...1200	420...2900
Max. sound pressure, dB	100	
Operating temperature, °C	-40...+55	
Weight, kg	0.2	
IP rating	IP56	
Mounting	wall	

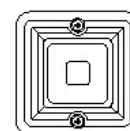
Connection diagram

A-24, sound signaling unit, waterproof power supply 24 V DC



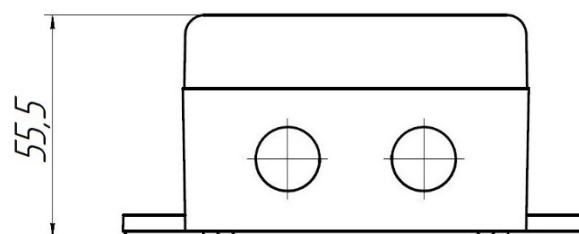
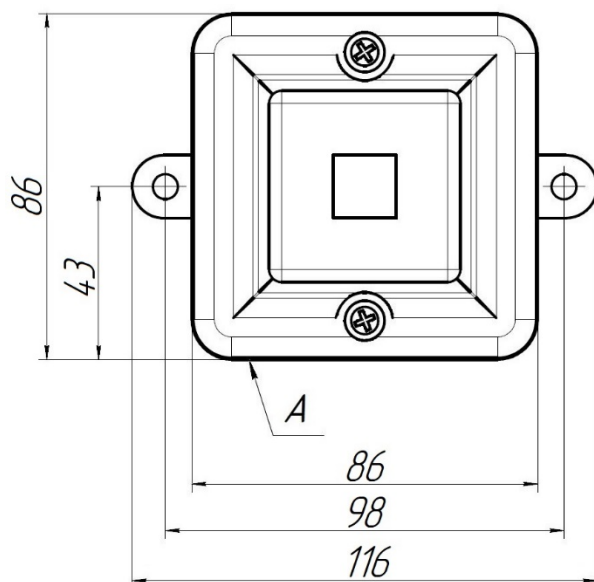
+	+	-	-	Σ
1	2	3	4	5

A-220, sound signaling unit, waterproof power supply 220 V 50 Hz



⊥	⊥	N	N	L	L
1	2	3	4	5	6

Overall dimensions of A-24, A-220



While mounting, leave 80 mm free space from the surface A to connect the Product

SIGNALING UNIT AL-24, AL-220

Types

AL-24-R or AL-220-R – red globe
 AL-24-O or AL-220-O – orange globe
 AL-24-W or AL-220-W – white globe
 AL-24-G or AL-220-G – green globe
 AL-24-B or AL-220-B – blue globe

Description

Ensures sound and light signaling on open deck and in noisy areas.

Features:

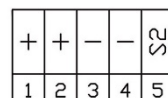
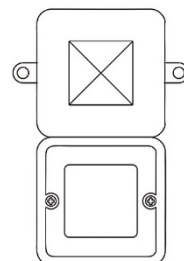
- waterproof;
- signaling unit is connected to user unit through relay unit RB-139G-24 (RB-139G-220) or directly (if built-in relay is available);
- volume control and tone select (max. 10 tones to choose from);
- wide choice of globe colours;
- standard knock-out plug (stamped on the casing) to install cable gland or cable inlet.

Technical specifications

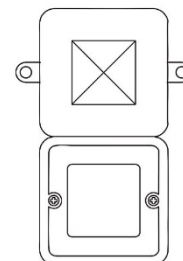
Parameter	Value	
	AL-24	AL-220
Power supply voltage, V	24 DC	220 AC
Power consumption, W	6.6	11
Globe colour	red, orange, white, green, blue	
Lamp type	xenon	
Flash frequency, Hz	1	
Luminous intensity, cd	200	
Output sound signal frequency, Hz	420 ... 1200	420 ... 2900
Max. sound pressure, dB	100	
Operating temperature, °C	-40...+55	
Weight, kg	0.43	
IP rating	IP56	
Mounting	wall	

Connection diagram

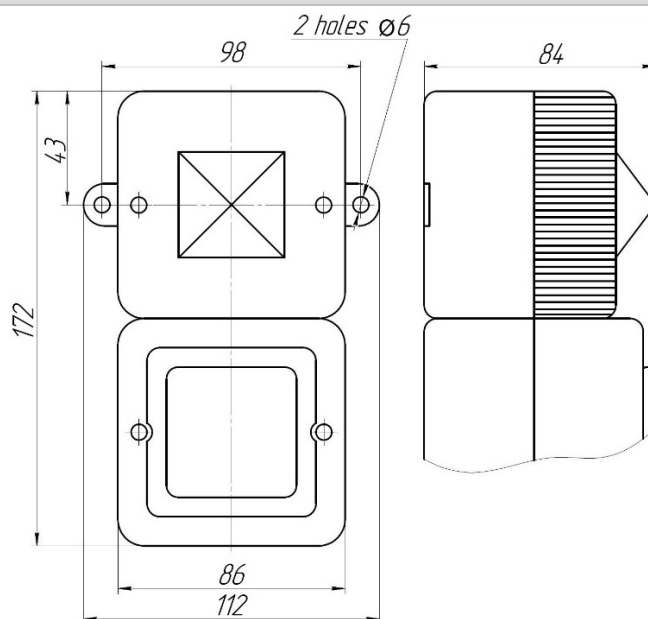
AL-24, sound and light signaling unit, waterproof power supply 24 V DC



AL-220, sound and light signaling unit, waterproof power supply 220 V 50 Hz



Overall dimensions of AL-24, AL-220



SIGNALING UNIT L-24, L-220

Types

L-24-R or L-220-R – red globe
 L-24-O or L-220-O – orange globe
 L-24-W or L-220-W – white globe
 L-24-G or L-220-G – green globe
 L-24-B or L-220-B – blue globe

Description

Ensures light signaling on open deck and in noisy areas.

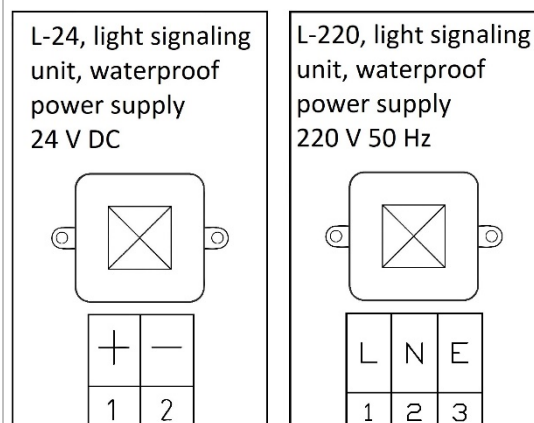
Features:

- waterproof;
- signaling unit is connected to user unit through relay unit RB-139G-24 (RB-139G-220) or directly (if built-in relay is available);
- wide choice of globe colours;
- standard knock-out plug (stamped on the casing) to install cable gland or cable inlet.

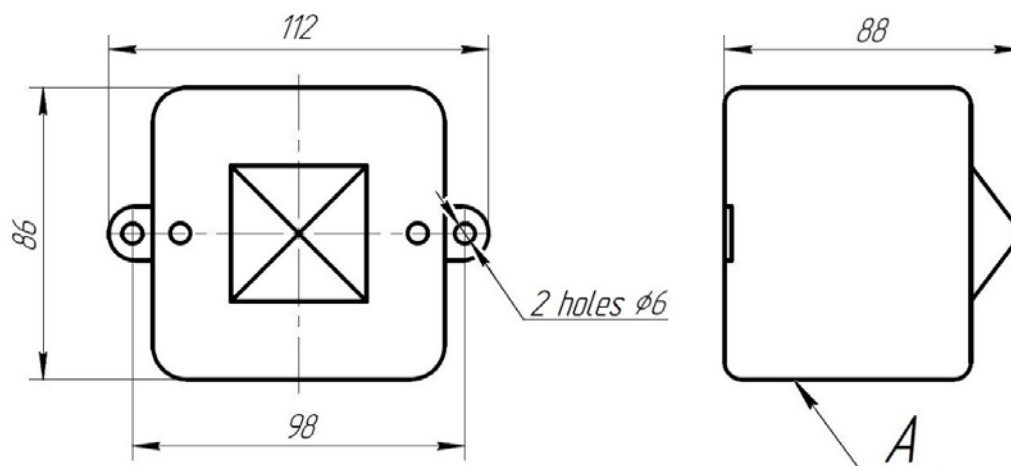
Technical specifications

Parameter	Value	
	L-24	L-220
Power supply voltage, V	24 DC	220 AC
Power, W	5	
Globe colour	red, orange, white, green, blue	
Lamp type	xenon	
Flash frequency, times per minute	60; 90 (double flash at option)	60
Luminous intensity, cd	250	
Operating temperature, °C	-40...+55	
Weight, kg	0.21	
IP rating	IP56	
Mounting	wall	

Connection diagram



Overall dimensions of L-24, L-220



While mounting, leave 80 mm free space from the surface A to connect the Product

METAL ENCLOSURES BO

Types

BO-1
BO-2
BO-3
BO-4

Description

To house system components and peripheral equipment on open deck.

Features:

- waterproof;
- the door has a lock and stopper (to hold it open).

Technical specifications of BO types

Parameter	Value			
	BO-1	BO-2	BO-3	BO-4
Material	steel (painted)			
Door opening angle	105°			
Operating temperature, °C	-40...+55			
Weight, kg	7.6	10.0	6.6	6.9
IP rating	IP56			
Mounting	wall			
Overall dimensions	Figure 22	Figure 23	Figure 24	Figure 25

Overall dimensions

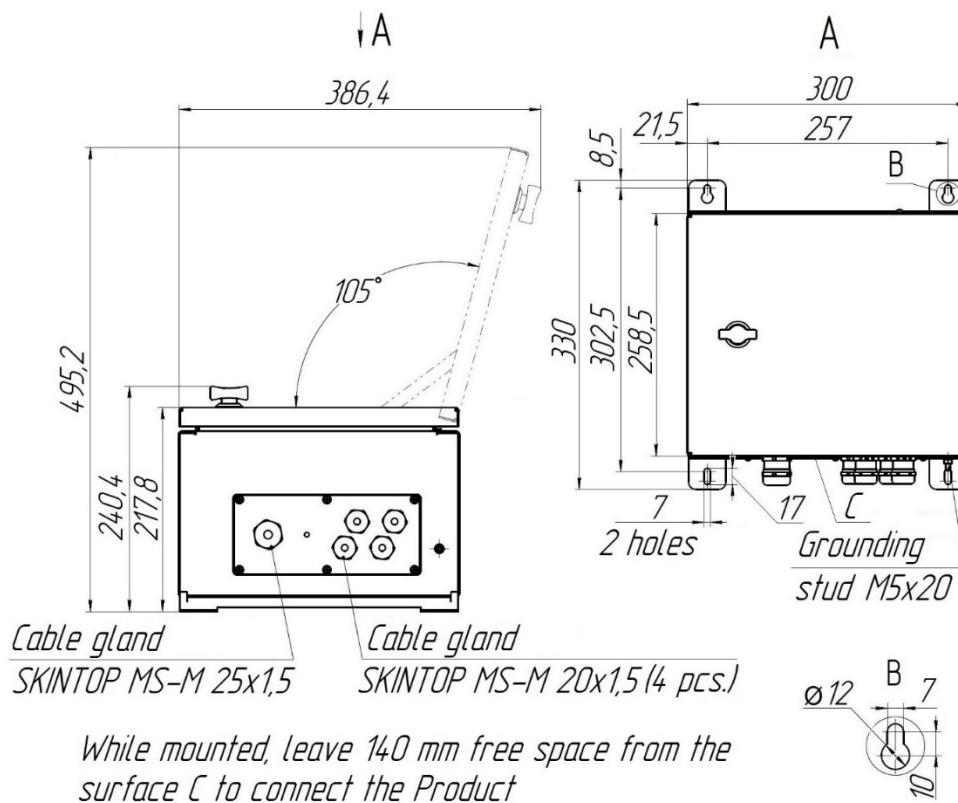


Figure 22 – Metal enclosure BO-1

Overall dimensions

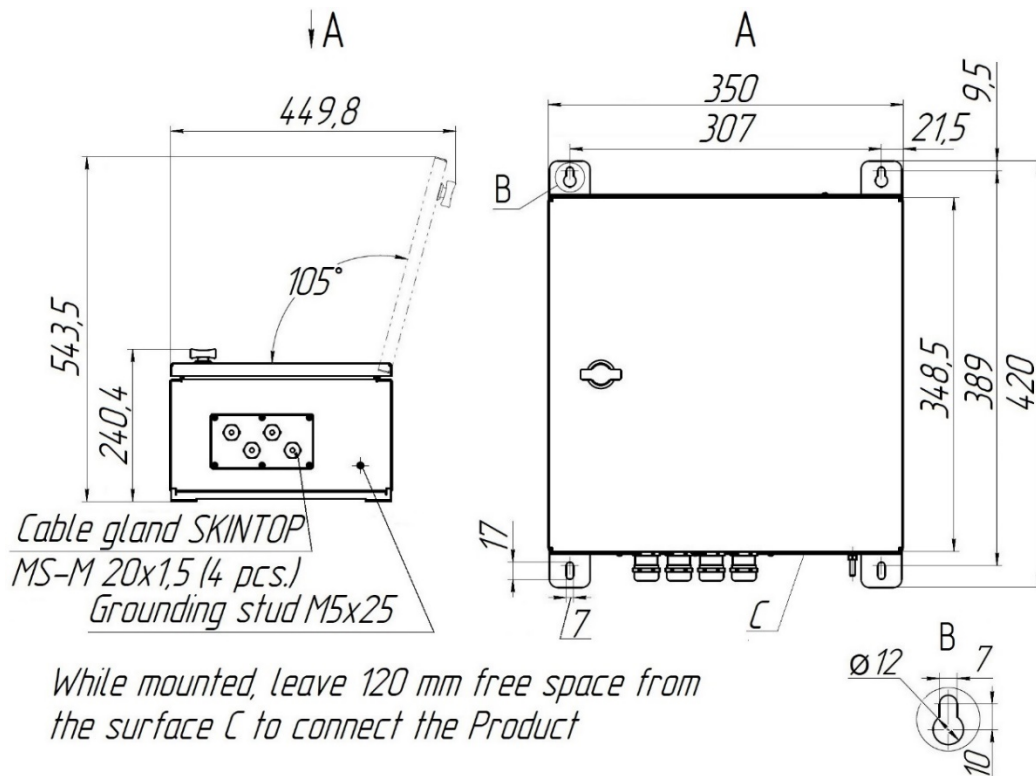


Figure 23 – Metal enclosure BO-2

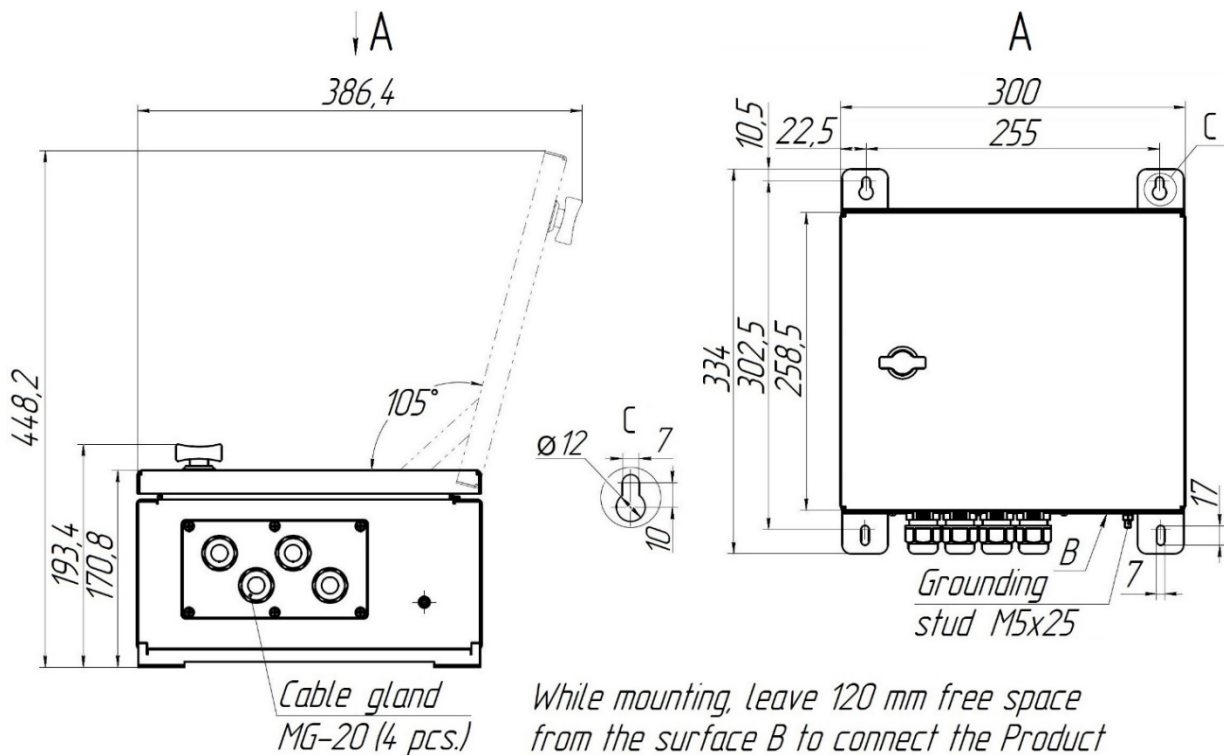


Figure 24 – Metal enclosure BO-3

Overall dimensions

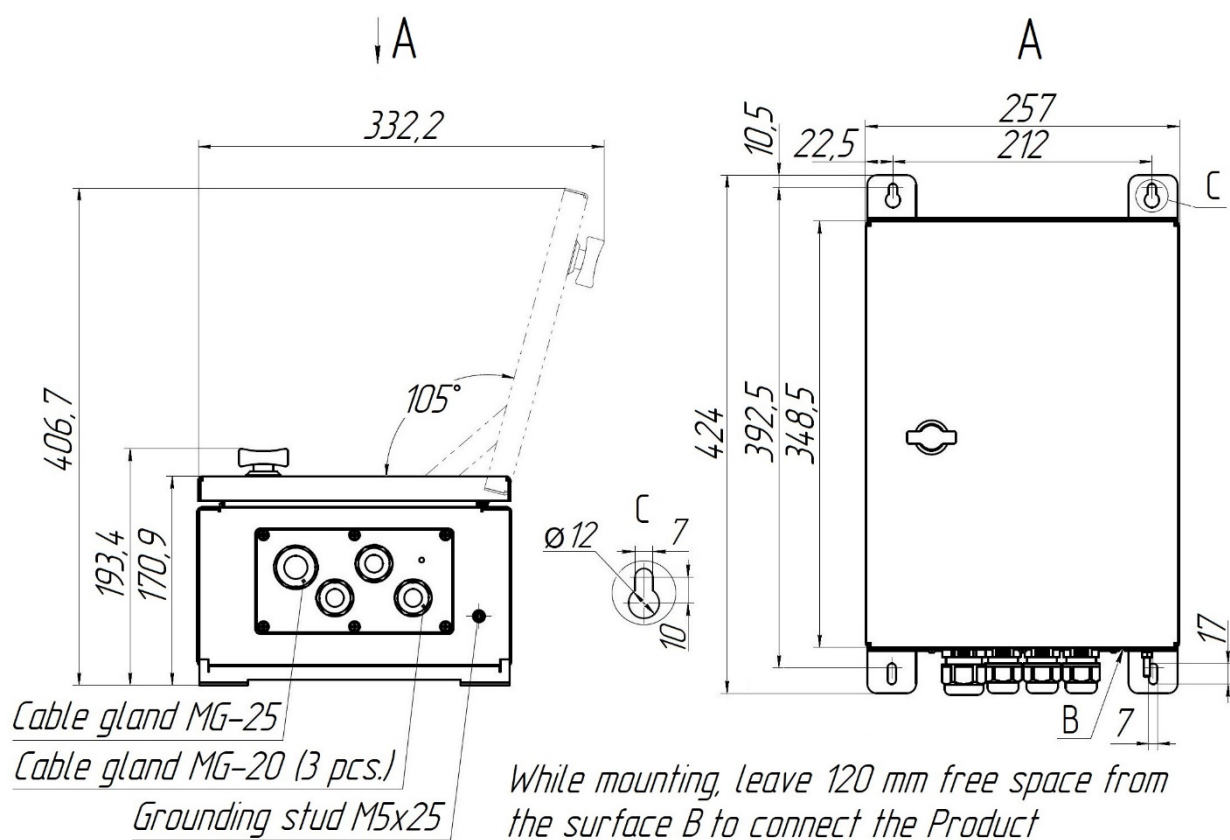


Figure 25 – Metal enclosure BO-4