

# PROSPERO

PRP-IM2C1A



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# 1 Safety



## **Danger!**

High risk: Indicates a critically hazardous situation. Failure to take precautions will result in electric shock, serious bodily injury, or death.



## **Warning!**

Medium risk: Indicates a potentially hazardous situation. Failure to take precautions may result in minor or moderate bodily injury.



## **Caution!**

Low risk: Indicates a potentially hazardous situation. Failure to take precautions may result in risk of property loss or equipment damage.

1. Read these instructions carefully. Read all safety and operating instructions before operating equipment or systems.
2. Keep these instructions in a safe place. Important safety instructions and operating instructions should be retained for future reference.
3. Pay attention to all warnings. All warnings on the equipment and in the operating instructions should be carefully observed.
4. Follow all instructions. All instructions for installation or use/operation should be followed.
5. Do not use this equipment near a water source. Do not use the device near water sources or in damp environments, e.g. near bathtubs, sinks, kitchen sinks or laundry tubs, wet basements, next to swimming pools, unprotected outdoor installation points, or anywhere designated as a damp area.



## **Caution!**

Do not use alcohol, ammonia or petroleum solvents or abrasive cleaners to clean the devices.

6. Disconnect the mains power supply from the devices, if you want to clean the devices.
7. Use a soft cloth that is not fully moist with a weak soap and water solution.
8. Let the device fully dry before you operate the device again.
9. Do not block any ventilation openings. Follow the manufacturer's instructions for installation. Openings in the housing, if present, are used for ventilation to ensure reliable operation of the device and prevent overheating. These openings should not be obstructed or covered. This device should not be flush mounted unless proper ventilation is provided or the manufacturer's instructions are followed.
10. Do not install near sources of heat, such as radiators, storage heaters, stoves or other heat-generating devices (including amplifiers), or in areas of direct sunlight.
11. Do not place naked ignition sources such as lit candles on the device.
12. Do not step on or pinch the power cord. Take special care to protect the plug, convenience outlets, and the device's connection points.
13. Use only the accessories/fittings specified by the manufacturer. Installation of any equipment should follow the manufacturer's instructions and should utilize the manufacturer's recommended mounting accessories.

14. Use only the carts, bays, tripods, stands, or tables specified by the manufacturer or supplied with the device. When using a cart, handle it carefully to avoid tipping over and causing personal injury. Sudden stops, excessive force, and uneven surfaces can all cause a cart carrying electrical equipment to tip over.
15. Unplug the device during thunderstorms or when not in use for long periods of time. Not applicable when special features, e.g. emergency evacuation systems, need to be maintained.
16. All maintenance matters should be referred to qualified maintenance personnel. Repairs are necessary if the device sustains any of the following issues: damage to the power cord or plug, liquid spillage or foreign objects entering the device, exposure to rain or moisture, abnormal operation, or if the device has fallen or been dropped.
17. Do not expose the equipment to dripping or splashing, and do not place objects containing liquids, e.g. vases, on this equipment.
18. Professional installation only - do not use the equipment in a residential environment.
19. To prevent condensation, wait a few hours before powering on the equipment after moving it from a cooler to a warmer location.
20. For devices with audio output, avoid listening to audio at high volume levels for extended periods of time in order to prevent possible hearing damage.
21. When replacement parts are required, service personnel should use replacement parts specified by the manufacturer, or parts with the same characteristics as the original. Unauthorized replacement with other parts may result in fire, electric shock, or other hazards.
22. After servicing this equipment, have service personnel perform a safety check to ensure that the equipment is working properly.
23. Use only the type of power supply indicated on the label to power the device. If you are unsure of the type of power supply used, consult your equipment dealer or local power company. For devices powered by batteries or other power sources, refer to the operating instructions.
  - Permanently connected equipment must have an accessible, external utility plug or all-pole utility switch and must comply with all applicable installation codes,
  - For removable equipment, socket outlets should be installed in an easily accessible location near the equipment.

**Danger!**

Do not insert any foreign objects through openings in the device. Foreign objects may come in contact with hazardous voltage points or short-circuit components, which in turn may cause fire or electric shock. Do not allow any liquid to spill into the unit.

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**Caution!**

To avoid electric shock, do not open the housing. Consult only qualified service personnel regarding maintenance matters.

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**Warning!**

To prevent fire or electric shock hazard, do not expose the device to rain or moisture.

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**Warning!**

Installation should only be performed by qualified service personnel and in accordance with the National Electrician's Standards or applicable local standards.

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**Warning!**

If the device is powered by an external power supply and a power cord unit is provided, disconnect the device from the power plug of the power cord. If an AC-DC adapter is supplied and the power plug is a direct plug-in type, use the AC-DC adapter to disconnect the device.

The electrical outlet should be installed close to the equipment and be easily accessible.

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**Warning!**

To avoid the risk of electric shock, do not connect Safety Extra-Low Voltage (SELV) circuits to Telephone Network Voltage (TNV) circuits. The LAN port contains a SELV circuit and the WAN port contains a TNV circuit. Some LAN and WAN ports use RJ-45 connectors. Always be careful when connecting cables.

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## 2 Short information

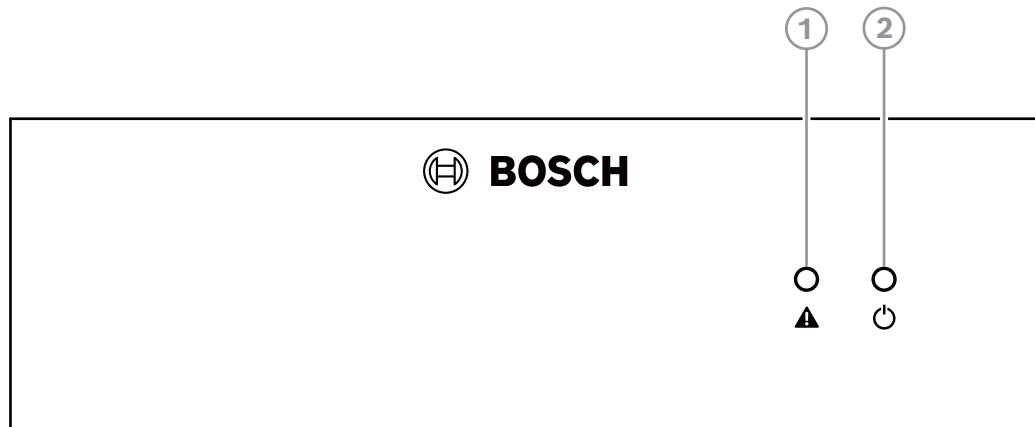
The PRP-IM2C1A is a versatile IP module that can connect to the PROSPERO public address system via a standard IP network for bi-directional audio and control signaling. Supports PoE, allowing connection to a standard Ethernet switch using a Cat5e cable. The rear panel provides 1 audio input and 1 audio output port for connecting audio sources or amplifiers, as well as 2 control input and 2 control output ports for triggering emergency tasks and linkage control outputs. The screw holes in the housing allow a module to be securely mounted on the cabinet tray. 3 IP modules can be mounted side by side at a 1U height.



**Other features:**

- Connecting to the PROSPERO public address system via an IP network.
- 1 line-level audio input for connecting to audio sources.
- 1 line-level audio output for connection to an amplifier.
- 2 dry contact control inputs for triggering emergency tasks.
- Control Input 1 interface, which can be used to trigger paging tasks.
- 2 relay control outputs, which can be used for emergency task linkage outputs.
- Power supply status and fault status indicators.
- Affixing to the cabinet tray through the screw holes.
- Compact design allows 3 modules to be installed side by side at a 1U rack height.

## 3 Equipment overview

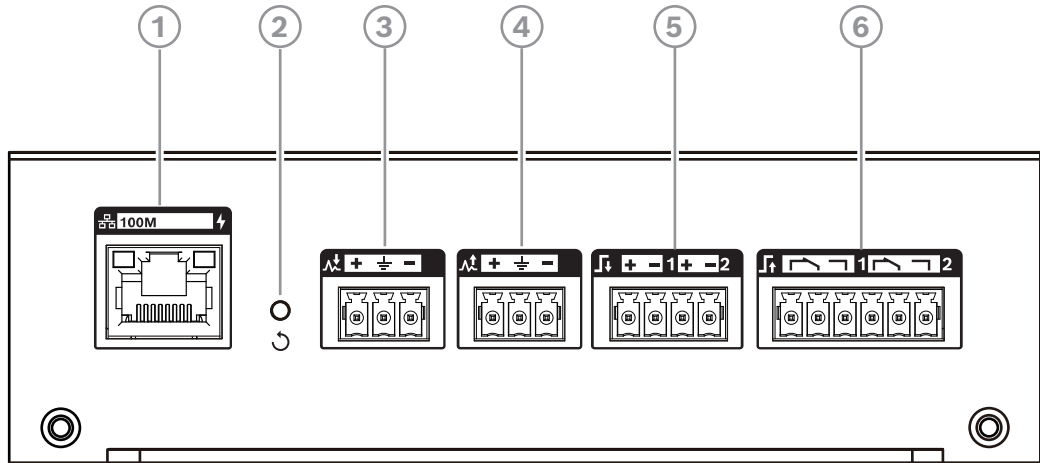
### 3.1 Front view

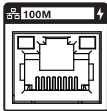
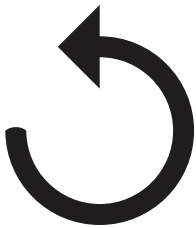

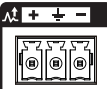
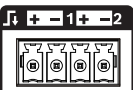



Nr.	Icon	Indicator and control	Description
1		Fault warning indicator	Blinking yellow: unauthorized Solid yellow: device failure
2		Power indicator	Green: On

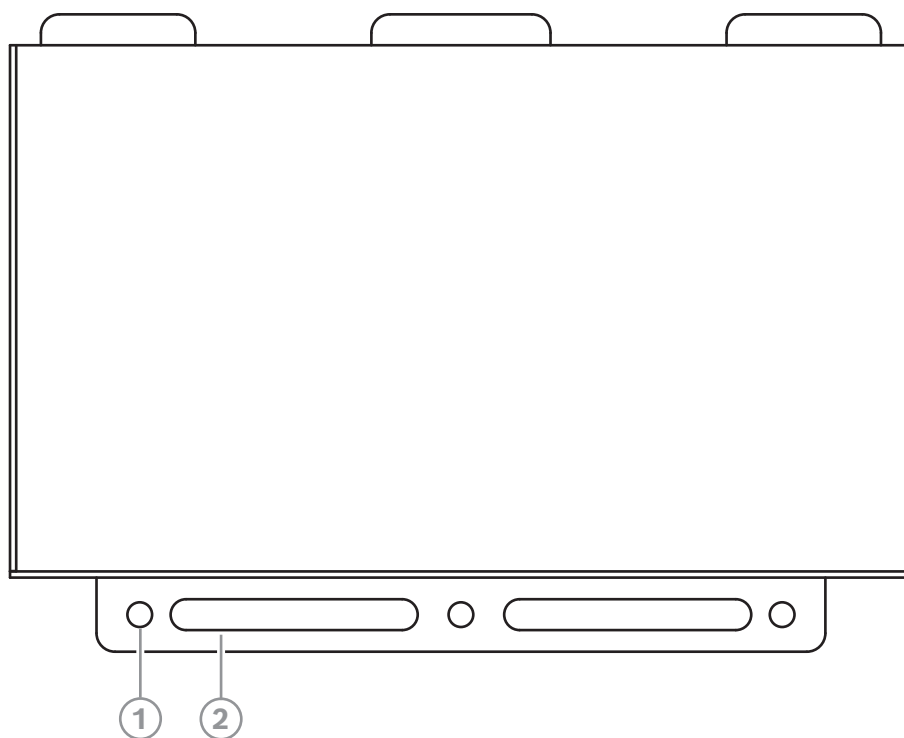


### 3.2 Rear view



Nr.	Icon	Indicator and control	Description (default configuration)
1		Network interface	Connecting to a PoE network switch
2		Device reset button	Restore factory default settings
3		Analog audio input connector	Balanced line level audio input
4		Analog audio output connector	Balanced line level audio output
5		Control inputs 1-2	Dry contact control input
6		Control output connections 1-2	Relay control output (normally closed/ normally open)

### 3.3 Top view



Nr.	Component	Description (default configuration)
1, 2	Set screw hole	Rack tray mounting screw holes

## 4 Accessories

Quantity	Components
1	Interface Module, 2x2 control, 1x1 audio
1	Safety and user information leaflet
1	Terminal block (set)

## 5 Installation

### 5.1 Delivery condition

The module is shipped from the factory with the following default property settings:

Parameters	Setup/Description
IP address	192.168.1.105
Subnet mask	255.255.255.0
Server IP	192.168.1.6
Name	PRP-IM2C1A

### 5.2 Installation method

The PROSPERO interface modules can be mounted in combination, with the three modules horizontally combined being exactly the width of a 1U standard rack unit.

1. Place the module on the cabinet tray and use M4/M5 screws and nuts to secure the module to the cabinet tray through the mounting holes on the cabinet tray and the mounting holes on the bottom of the module.
2. Secure the tray to the rack.
3. Connect the network cable, audio cable, and control cable to the interface module.

**Notice!**

The cabinet trays need to be configured by the installer.

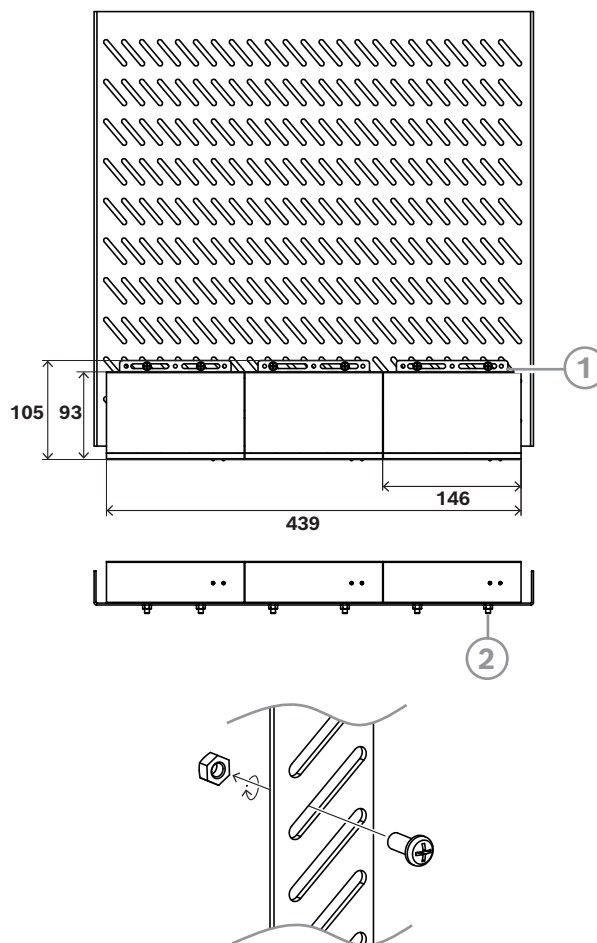


Figure 5.1: Fixing the module on the cabinet tray

Nr.	Description
1	Screw
2	Nut (female component of nut and bolt)

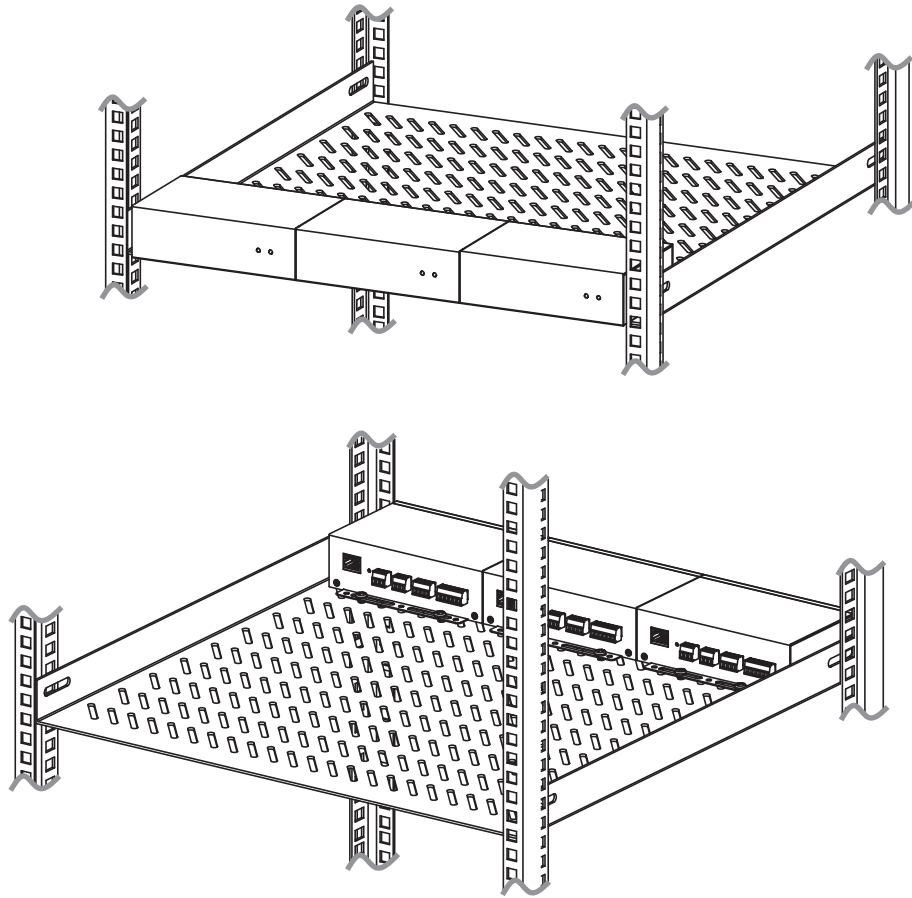


Figure 5.2: Fixing a tray in a rack

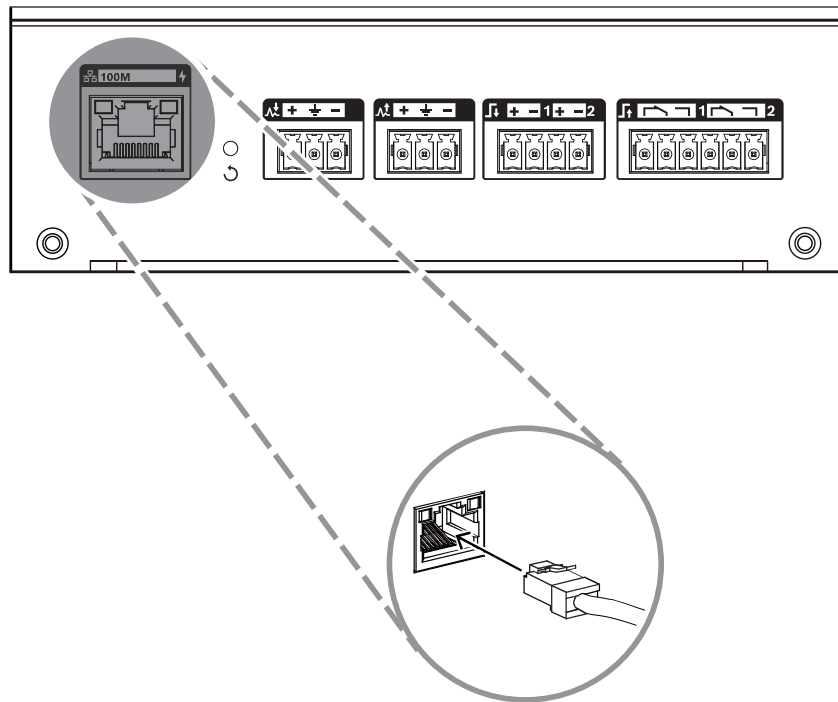
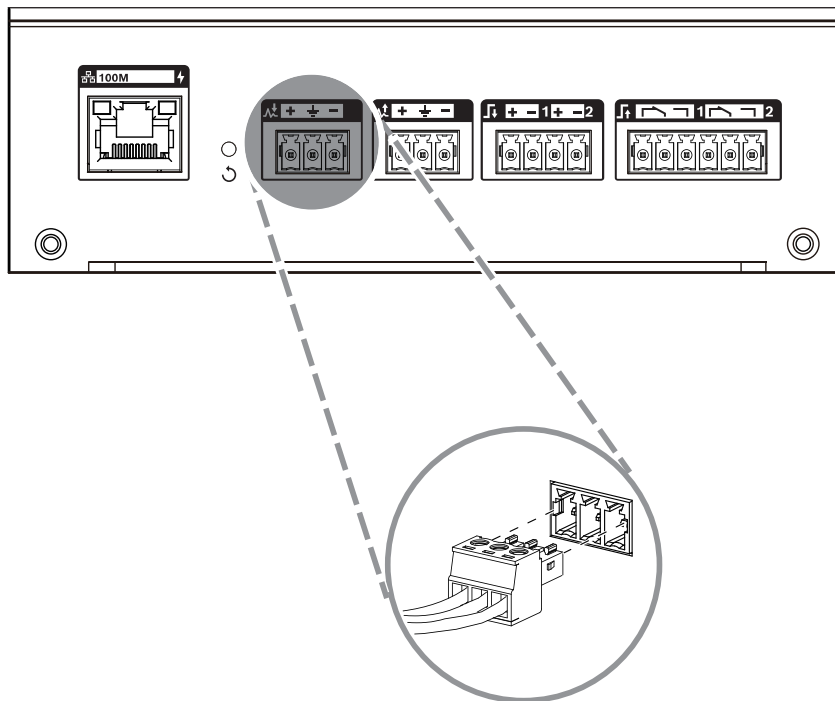


Figure 5.3: Network connection



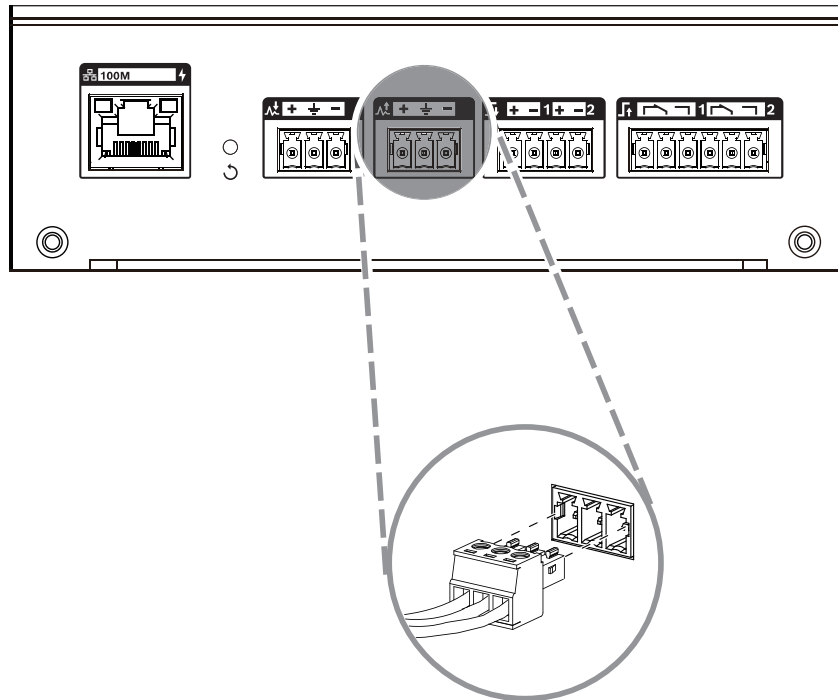
**Notice!**

Use Ultra Category 5 network cables (or higher gauge).



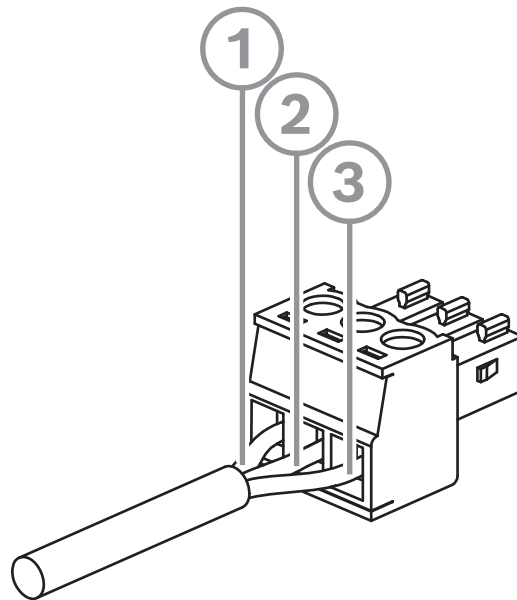
**Figure 5.4:** Analog audio input connection

Use a three-pole balanced audio connection, paying attention to positive and negative polarity and grounding.



**Figure 5.5:** Analog audio output connection

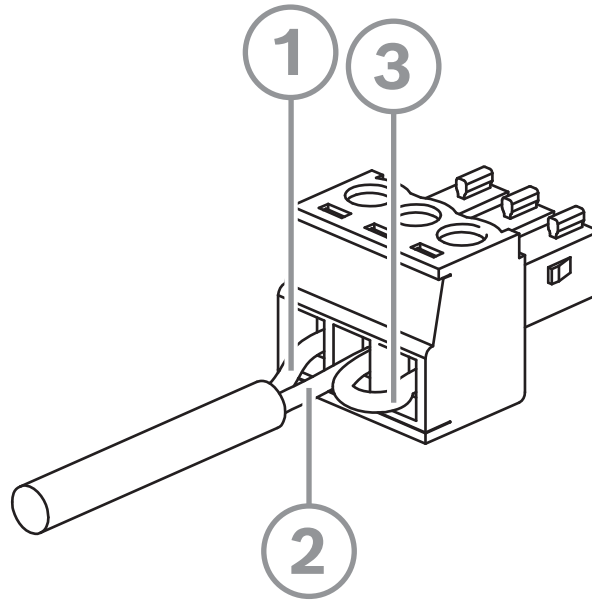
Use a three-pole balanced audio connection, paying attention to positive and negative polarity and grounding.



**Figure 5.6:** Analog audio 3-pole balanced connection

Nr.	Description
1	Anodal
2	Grounding
3	Cathode





**Figure 5.7:** Analog audio 2-pole unbalanced connection

Nr.	Description
1	Anodal
2	Grounding
3	Negative to ground jumper

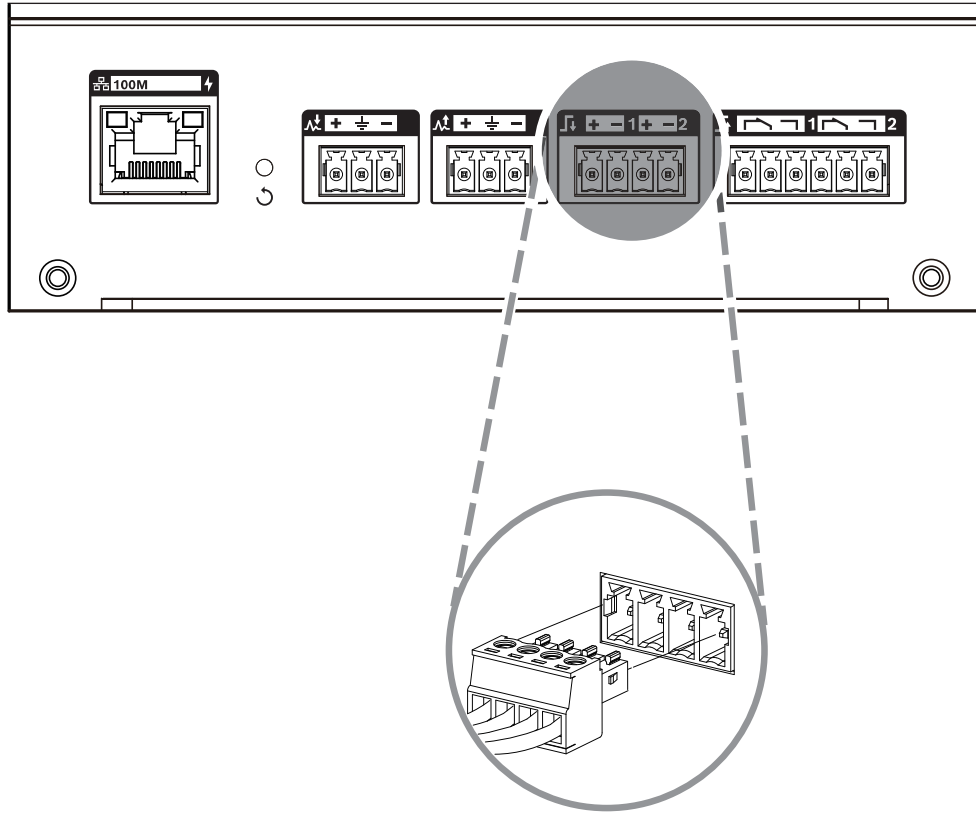


Figure 5.8: Dry contact control input connection

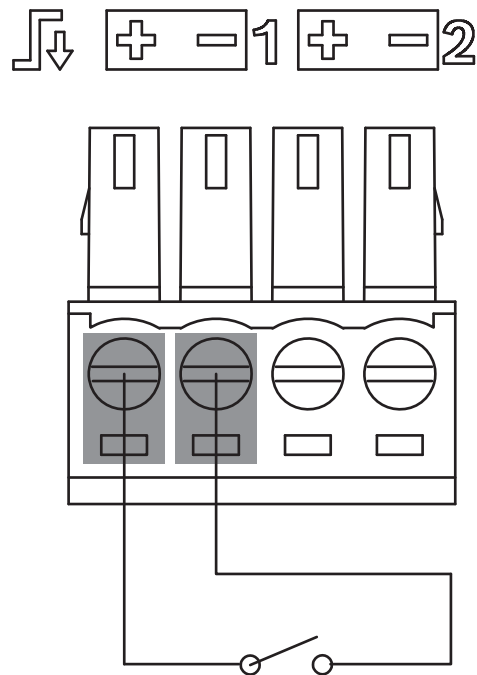
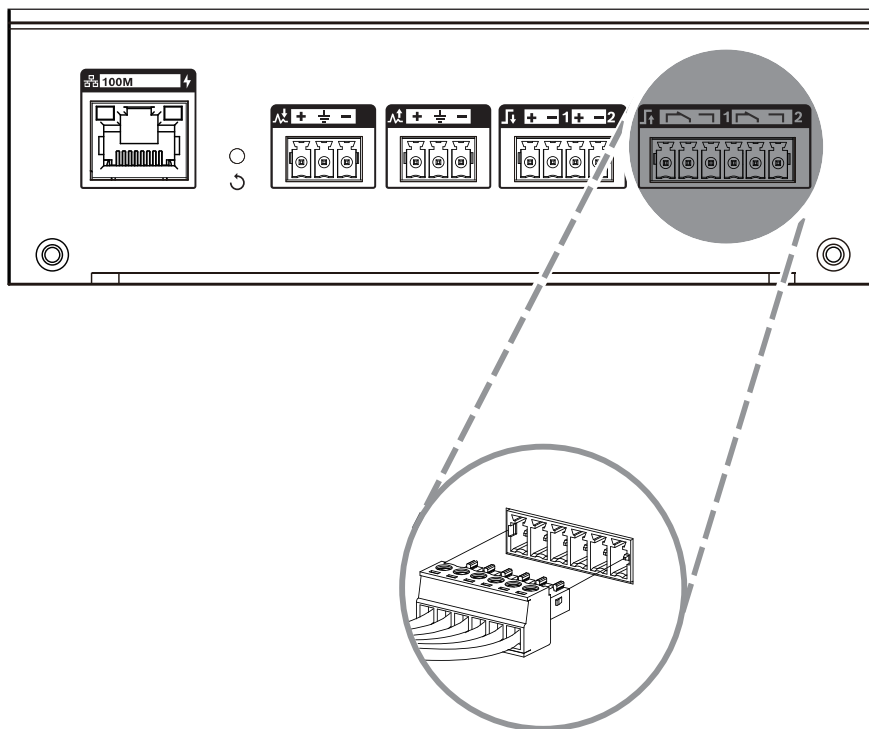
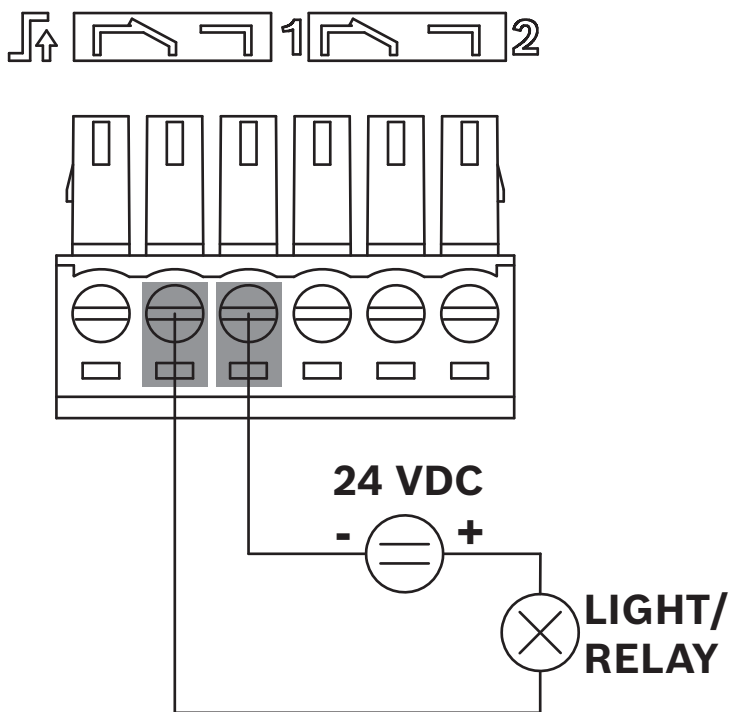


Figure 5.9: Example of control input connection



**Figure 5.10:** Relay control output connection  
Normally open or normally closed options are available.

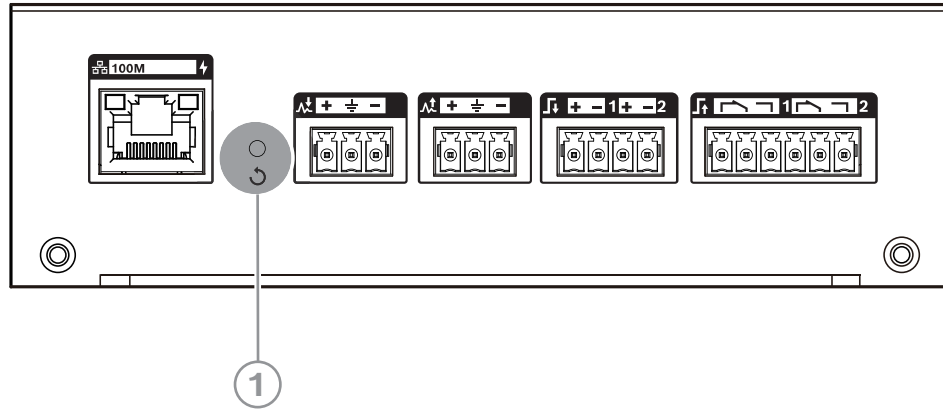


**Figure 5.11:** Example of control output connection

## 6 Operation

### Device reset

Press and hold the device reset button for 5 seconds, then release the device to reboot and return to the factory default configuration



Nr.	Icon	Indicator and control	Description
1		Device reset button	Restore factory default settings

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## 7 Maintenance

The modules do not require any special maintenance. To maintain cleanliness and a neat appearance, use a soft cloth to clean the module.

## 8 Technical data

### Electrical

<b>PoE power supply</b>	
Rated input voltage (VDC)	48 V
Standard	IEEE 802.3af Class 3
Power consumption	<5 W

<b>Network interface</b>	
Ethernet type	100 BASE-TX
Ethernet protocol	TCP/IP, UDP, RTP, TFTP, HTTP, HLS
Audio encoding	MP3, PCM
Interface	1x RJ45

<b>Analog audio input</b>	
Frequency response	100 Hz – 18 kHz
Sampling rate	44.1 kHz
Type	1x Line level output 1x Line level input
Connector	2x 3-pin Phoenix connector
Maximum input/output level	6 dBu
Input impedance	>40 k $\Omega$
Output impedance	<400 $\Omega$

<b>GPIO control input/output</b>	
Control input contacts	
Interface	2x 2-pin Phoenix connector
Principle	Contact closure
Contacts closed	<5 k $\Omega$
Contacts open	>15 k $\Omega$
Control output contacts	
Interface	2x 3-pin Phoenix connector
Principle	Contact switch over (Relay SPDT)
Maximum contact voltage (V)	30 V DC, 250 V AC
Maximum contact current (A)	1 A

**Mechanical**

Material	Metal housing
Dimensions (H x W x D)	44 mm x 146 mm x 105 mm
Weight	475 g
Color (RAL)	RAL 9017 Traffic black

**Environmental**

Operating temperature (°C)	-5°C – 45°C
Storage and transportation temperature (°C)	-40°C – 70 C
Operating relative humidity, non-condensing (%%)	<95%

# 9 Dimensions

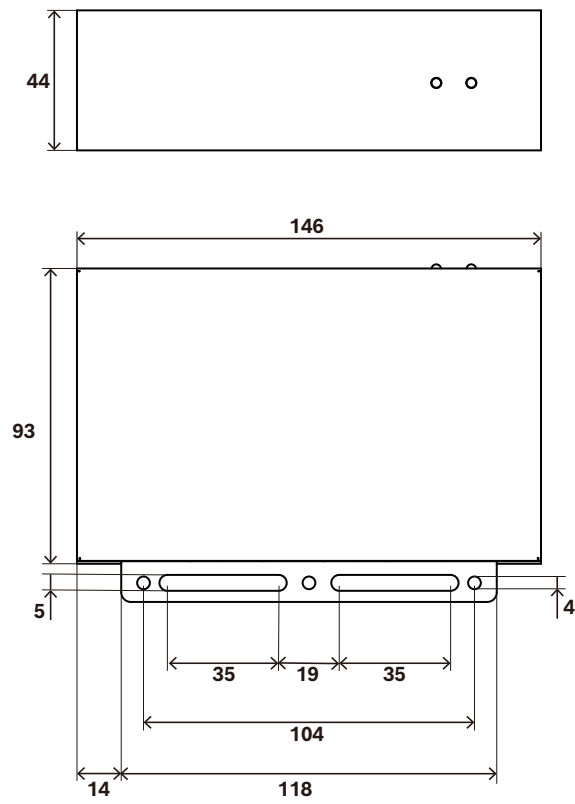


Figure 9.1: Dimensions in mm









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