

The Extron ACP 100 Audio Control Panel is a fully configurable control interface for use with any Extron ACP-enabled device. Each ACP 100 includes two ACP ports, which support both power and communication between the host device and the ACP 100. Up to eight ACP panels can be used per host device for more demanding control needs.

Front Panel Features

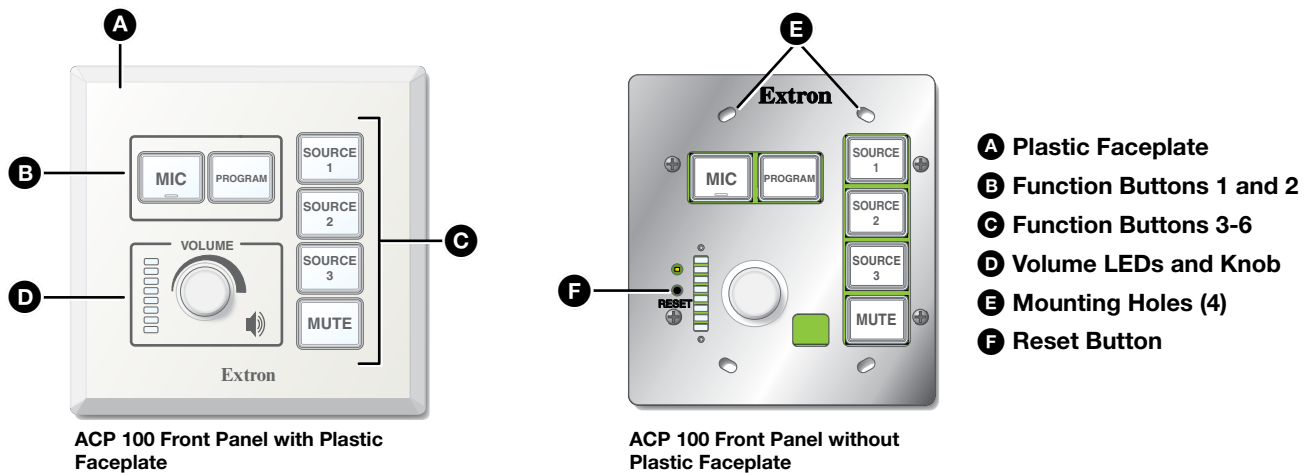


Figure 1. ACP 100 Front Panel

Rear Panel Features

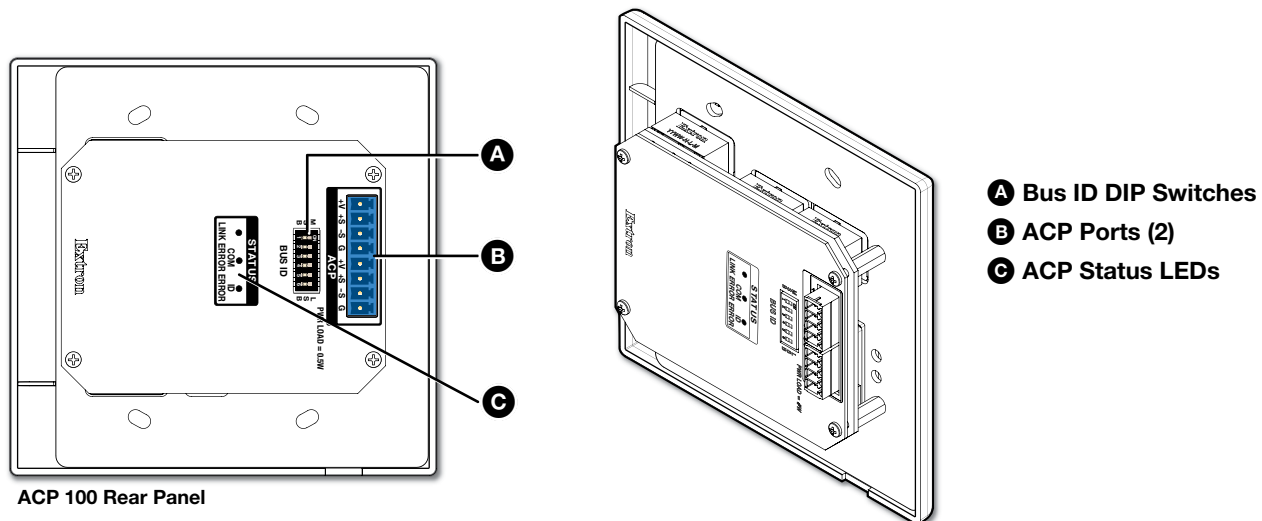


Figure 2. ACP 100 Rear Panel

Planning the System and Installation

When planning to install an ACP system, consider how many ACP panels to use, maximum cable distance, and mounting (see the ACP 100 product page at www.extron.com for more information about the ACP 100).

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Installation

Step 1: Get Ready

Use the following checklist to prepare for the installation:

- ☐ Download and install the latest version of software, firmware, and device drivers needed to configure the host device and configure the connected ACP products (see the host device user guide, available on www.extron.com, for details on software and drivers).
- ☐ Obtain cables, mounting hardware, and any other supplies required for ACP 100 installation.

Step 2: Prepare the Installation Site

ATTENTION:

- Installation and service must be performed by authorized personnel only.
- L'installation et l'entretien doivent être effectués par le personnel autorisé uniquement.
- Extron recommends installing the ACP 100 into a grounded, UL Listed electrical junction box.
- Extron recommande d'installer le ACP 100 dans un boîtier d'encastrement électrique mis à la terre, listé UL.
- If the ACP 100 will be installed into fine furniture, it is best to hire a licensed, bonded craftsman to cut the access hole and perform the physical installation so the surface will not be damaged.
- S'il est prévu d'installer le ACP 100 dans du beau mobilier, il est préférable de faire appel à un artisan autorisé et qualifié pour couper le trou d'accès et réaliser l'installation de telle façon que la surface ne soit pas endommagée.
- Follow all national and local building and electrical codes that apply to the installation site.
- Respectez tous les codes électriques et du bâtiment, nationaux et locaux, qui s'appliquent au site de l'installation.

NOTE: For the installation to meet UL requirements and to comply with National Electrical Code (NEC), the ACP 100 must be installed in a UL Listed junction box. The end user or installer must furnish the junction box. It is not included with the ACP 100.

Americans with Disabilities ACT (ADA) Compliance

When planning where to install these devices, consider factors affecting accessibility of the button panel such as height from the floor, distance from obstructions, and how far a user must reach to press the buttons. For guidelines, see sections 307 ("Protruding Objects") and 308 ("Reach Ranges") of the *2010 ADA Standards for Accessible Design* available at <http://www.ada.gov/reg2010/2010ADASTandards/2010ADASTandards.pdf>.

Site Preparation

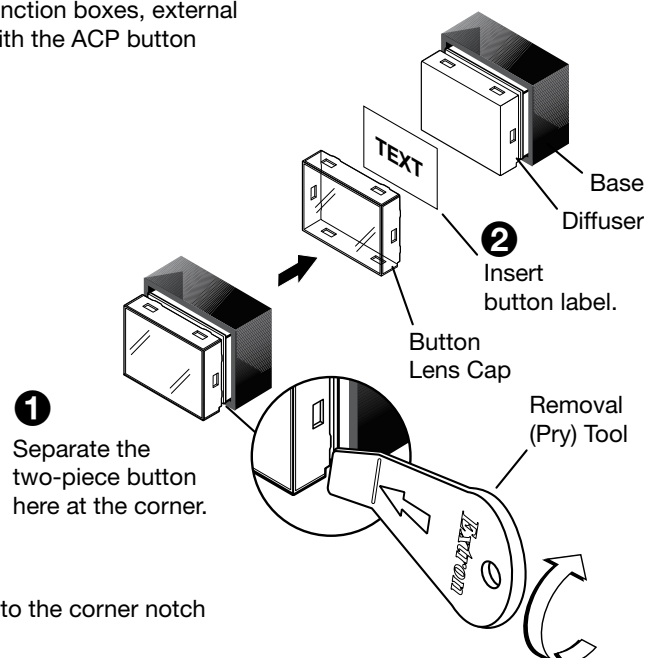
Extron offers an assortment of mud rings, optional UL Listed in-wall junction boxes, external wall boxes (EWBs), and surface or tabletop mounting boxes for use with the ACP button panels. The ACP 100 is a US 2-gang size device.

Step 3: Replace Plastic Faceplate, Button Labels, or Knob

The plastic faceplate button labels can be replaced. Some button labels ship with the unit. Customized labels can be created and printed using Extron Button Label Generator software from www.extron.com.

To change a plastic faceplate or translucent button label:

1. The plastic faceplate is secured with four magnetic catches on the underside of the plastic faceplate. Remove the plastic faceplate by holding the body of the unit with one hand, gripping the sides of the plastic faceplate with the other hand, then pulling the plastic faceplate away from the unit.
2. Gently separate the button lens cap from its white diffuser. Insert the end of the provided Extron removal (pry) tool into the corner notch and gently twist the tool (see ❶ in the image to the right).



- Remove the label insert from the button lens cap.
- Select one of the button labels from the printed label sheet included with the device. Remove the label from its backing and remove the clear protective film from the front of the label.
- Insert the button label into the button lens cap (see 2 in the image on the previous page).
- Align the button lens cap with the white diffuser and the panel opening, then press the button lens cap into place on the button.
- Attach the plastic faceplate to the ACP 100. Align the openings of the faceplate with the buttons and knob and place the plastic faceplate against the unit. The four magnetic catches fasten the faceplate onto the unit.

To replace the rotary knob:

- Remove the plastic faceplate as described at the bottom of the previous page.
- Firmly grasp the knob and pull it away from the ACP 100.
- Align the ridge inside the new knob with the channel on the knob control and allow the magnet in the knob to snap into place.
- Reattach the plastic faceplate to the unit as described in step 7 above.

Step 4: Set Bus ID Addresses

Bus ID Address DIP Switches

- Use these DIP switches to set the six-bit, binary bus address for the ACP 100.
- Each ACP connected to the same DMP Plus must have a **unique** address.
- Switch 1 (on the left) is the highest value (32, the most significant bit [labeled "MSB"]).
- Switch 6 (on the right) is the lowest (1, the least significant bit [labeled "LSB"]).
- Up = on = 1, Down = off = 0

Examples:

Unit address	1	18
DIP switches		
Binary address	0 0 0 0 0 1	0 1 0 0 1 0

ACP Ports

- Connect up to eight (8) ACP endpoint devices per DMP Plus.
- Wire the connectors the same at both ends.
- These ports are identical. You can connect devices interchangeably to either port.
- Do not exceed a total of 1000 feet (305 meters) of cable for connections between the DMP Plus and all of the ACP panels.
- Power is provided by the IPCP Pro, a PS 1220EB power inserter, or an Extron 12 VDC power supply.

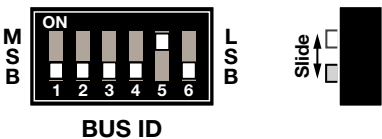
ACP port on a DMP Plus, or on another ACP endpoint

Figure 3. ACP 100 Rear Panel Bus ID

Set the bus identification (ID) DIP switches for the ACP 100 and any other ACP panels being connected to the system. Each ACP device must have a unique bus ID. If multiple ACP panels have the same bus ID, address conflicts may cause one or more of the panels to not be recognized in DSP Configurator or by the host device. Up to eight ACP devices can be connected in the same system.

Each ACP device in a system must have a unique six-digit binary bus ID. ACP bus IDs are set by using the DIP switch assembly on the rear panel of the ACP 100.

Switch 1 on the left sets the most significant bit (highest number, 32) while switch 6 on the right sets the least significant bit (the lowest number, 1). See the example addresses in the table to the right.



Example Addresses		
Bus ID (Decimal)	Binary Address	DIP Switch Setting
0	000000*	
1	000001	
2	000010	
3	000011	
4	000100	
5	000101	
6	000110	
7	000111	
8	001000	

*Address 000000 is reserved for the control processor and cannot be used by any ACP devices.

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Step 5: Cable All Devices

1. Connect the ACP panel to the host device.
2. Connect ACP panels to each other if multiple panels are being used in the control system (see figure 4 below for correct wiring).

NOTES:

- Wire both ends of each ACP cable the same. Connectors are interchangeable between the host device and ACP device.
- Do NOT power an ACP panel from more than one power source.

3. Apply power to the host device after correctly cabling all devices.

Cabling

Attach cables using the diagram below as a guide. Wiring is the same for all ACP models. Connect a 4-pole captive screw connector to each end of the cable, wiring both ends the same. In most cases, the ACP devices are powered by the DMP Plus series device. Power is carried on the V+ pin of the ACP 100 and other ACP devices.

Extron STP20-2/1000 or STP20-2P/100 cable is recommended for ACP device connections.

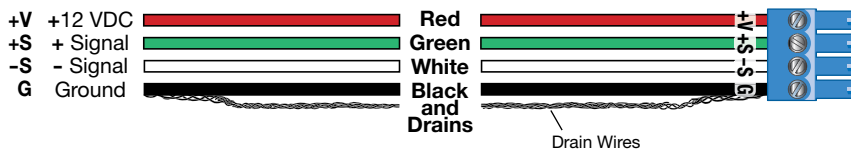


Figure 4. Basic ACP Connector Wiring

ACP devices that are relatively far from the host device can be connected to an optional Extron PS 1220EB eBUS power inserter or an Extron 12 VDC desktop power supply as shown in the diagrams below and on the next page (see the *ACP 100 Specifications* at www.extron.com for cable length to determine if additional power is recommended).

ATTENTION:

- Always use a power supply supplied or specified by Extron. Use of an unauthorized power supply voids all regulatory compliance certification and may cause damage to the supply and the unit.
- Utilisez toujours une source d'alimentation fournie par Extron. L'utilisation d'une source d'alimentation non autorisée annule toute conformité réglementaire et peut endommager la source d'alimentation ainsi que l'unité.
- If not provided with a power supply, this product is intended to be supplied by a UL Listed power source marked "Class 2" or "LPS" and rated output 12 VDC, minimum 1.0 A.
- Si ce produit ne dispose pas de sa propre source d'alimentation électrique, il doit être alimenté par une source d'alimentation certifiée UL de classe 2 ou LPS et paramétré à 12 VDC et 1,0 A minimum.
- Unless otherwise stated, the AC/DC adapters are not suitable for use in air handling spaces or in wall cavities.
- Sauf mention contraire, les adaptateurs AC/DC ne sont pas appropriés pour une utilisation dans les espaces d'aération ou dans les cavités murales.
- The installation must always be in accordance with the applicable provisions of National Electrical Code ANSI/NFPA 70, article 725 and the Canadian Electrical Code part 1, section 16. The power supply shall not be permanently fixed to building structure or similar structure.
- Cette installation doit toujours être en accord avec les mesures qui s'applique au National Electrical Code ANSI/NFPA 70, article 725, et au Canadian Electrical Code, partie 1, section 16. La source d'alimentation ne devra pas être fixée de façon permanente à une structure de bâtiment ou à une structure similaire.

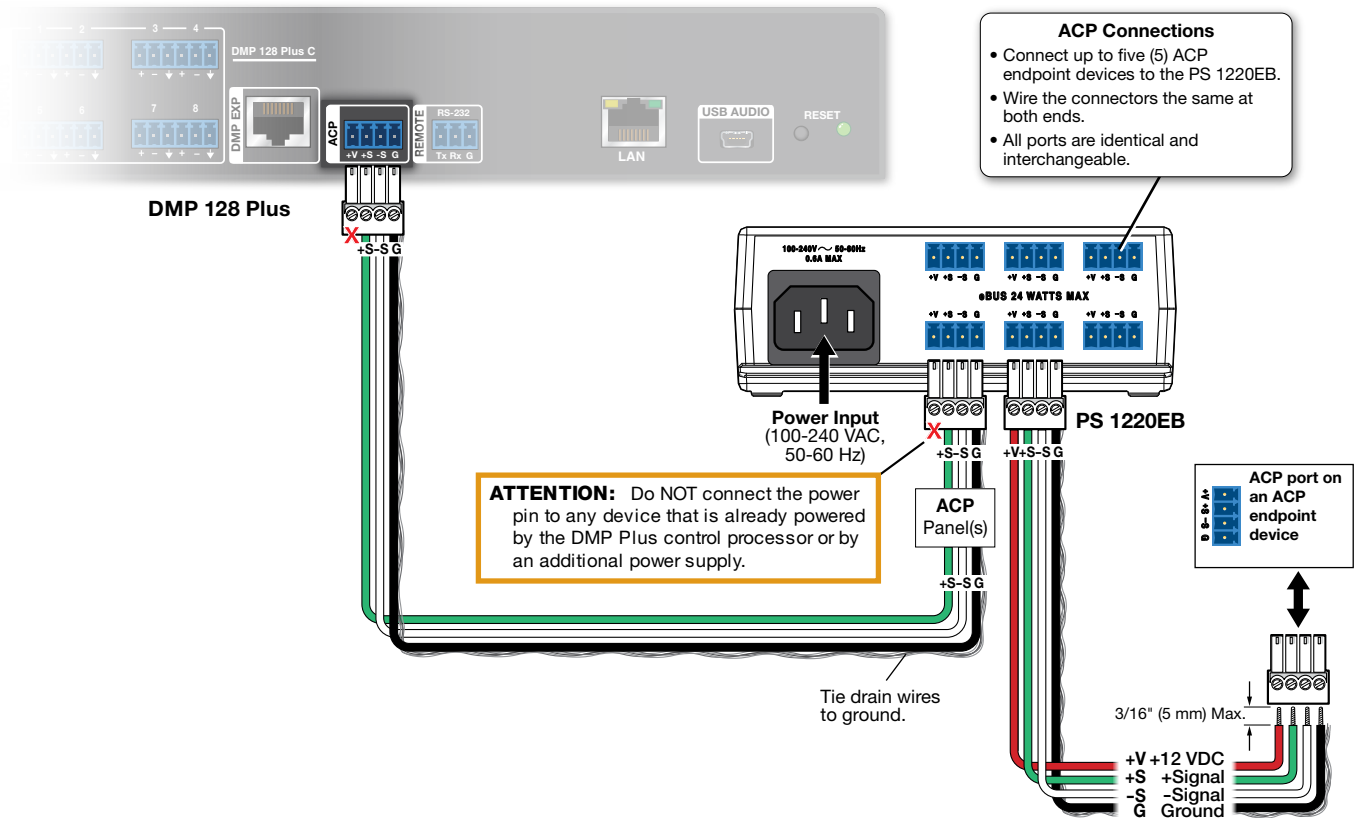
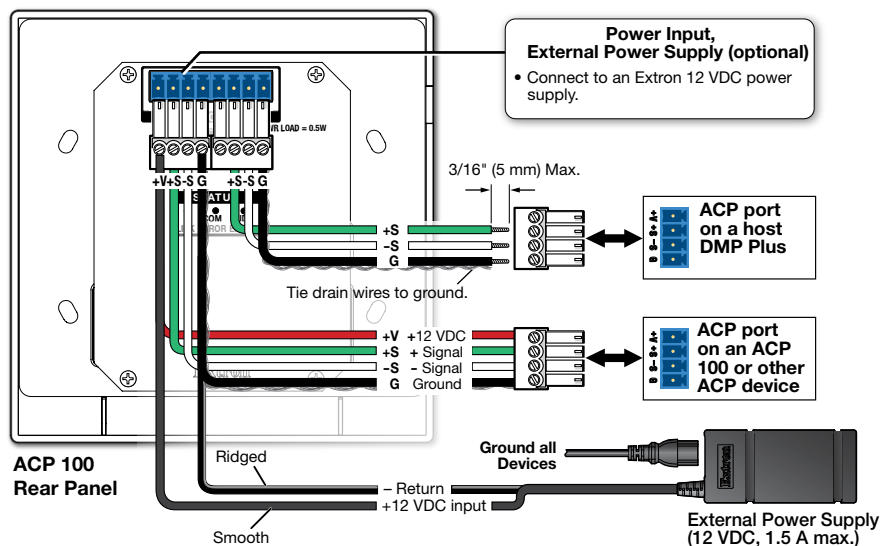


Figure 5. Cabling ACP Devices with a PS 1220EB Power Inserter



NOTE: Check the polarity of the power supply before connecting it to the ACP.

Figure 6. Cabling ACP Panels with an Extron 12 VDC Power Supply

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Step 6: Configure the System

NOTE: For complete information on creating configuration files and operating DSP Configurator, see the host device user guide and the *DSP Configurator Help* file.

1. Create a new host device configuration file in DSP Configurator and create all groups, presets, and macros to be controlled by the ACP device.
2. Select **Tools>Configure ACPs** in DSP Configurator and configure the ACP button actions and panel IDs.
3. Connect to the host device in Live mode with a TCP/IP connection and push the configuration file to the device.

Step 7: Test and Troubleshoot

1. Verify the ACP bus ID DIP switches are set to the desired address on each unit and that there are no bus ID address conflicts in the system.

The ACP 100 may have a single monochrome LED (green) or three separate LEDs (green, amber, or red). The LED (or LEDs) are a diagnostic tool showing the device status:

Device Status	Single LED (green)	Three LEDs
No power, ACP cable broken.	Off	Off
Device is receiving power and communicating correctly with the DMP Plus.	Lights solidly	Green
Device is receiving power but cannot communicate with the DMP Plus	Slow blink	Amber
Device is receiving power and communicating with the DMP Plus but there is an address conflict.	Fast blink	Red

2. Verify cables to and from the ACP devices are wired the same at each end.
3. Test the system:
 - a. Press the ACP device buttons and ensure the buttons light as expected and that the appropriate control actions are triggered. Commands can be verified using DSP Configurator. DataViewer can also be used for command verification if responses are configured.
 - b. Ensure the audio levels respond correctly to the volume and mute buttons.
4. Make adjustments to wiring, bus ID addresses, and system configuration as needed. Remember that the rear panel ports and DIP switches are not accessible after the ACP is mounted. If needed, push a revised configuration to the ACP device through the host device using DSP Configurator.

If you have questions during installation and setup, call the Extron S3 Sales and Technical Support Hotline or the Extron S3 Control Systems Support Hotline (1.800.633.9877).

Step 8: Mounting the ACP 100

Prior to mounting:

1. Feed all device cables through the wall or furniture and, if applicable, through the plastic spacer.

NOTE: If the unit is not installed in a mud ring, the plastic spacer must be installed. The spacer positions the unit to allow the magnetic catches on the plastic faceplate to attach properly and securely.

2. Ensure the cables are connected to the ACP 100 rear panel.

Mount the ACP 100 as follows:

1. Insert the cabled ACP 100 into the mud ring or junction box within the wall or furniture, aligning the mounting holes in the ACP 100 with those in the box or mud ring.
2. Secure the ACP 100 in the junction box, wall or surface mounting box, or mud ring as follows (see ❶ in the figures below).
 - a. Insert the included screws through the oval slots at the top and bottom of the ACP 100 metal mounting plate, through the plastic spacer (if not using a mud ring), and into the corresponding threaded holes in the box or mud ring.
 - b. Using a Phillips screwdriver, gently tighten the screws until snug.
3. Attach the plastic faceplate to the ACP 100. Align the plastic faceplate openings with the buttons, knob, and LEDs and place the plastic faceplate against the metal mounting plate (see ❷ in the figures below). The magnetic catches fasten the plastic faceplate onto the metal mounting plate.

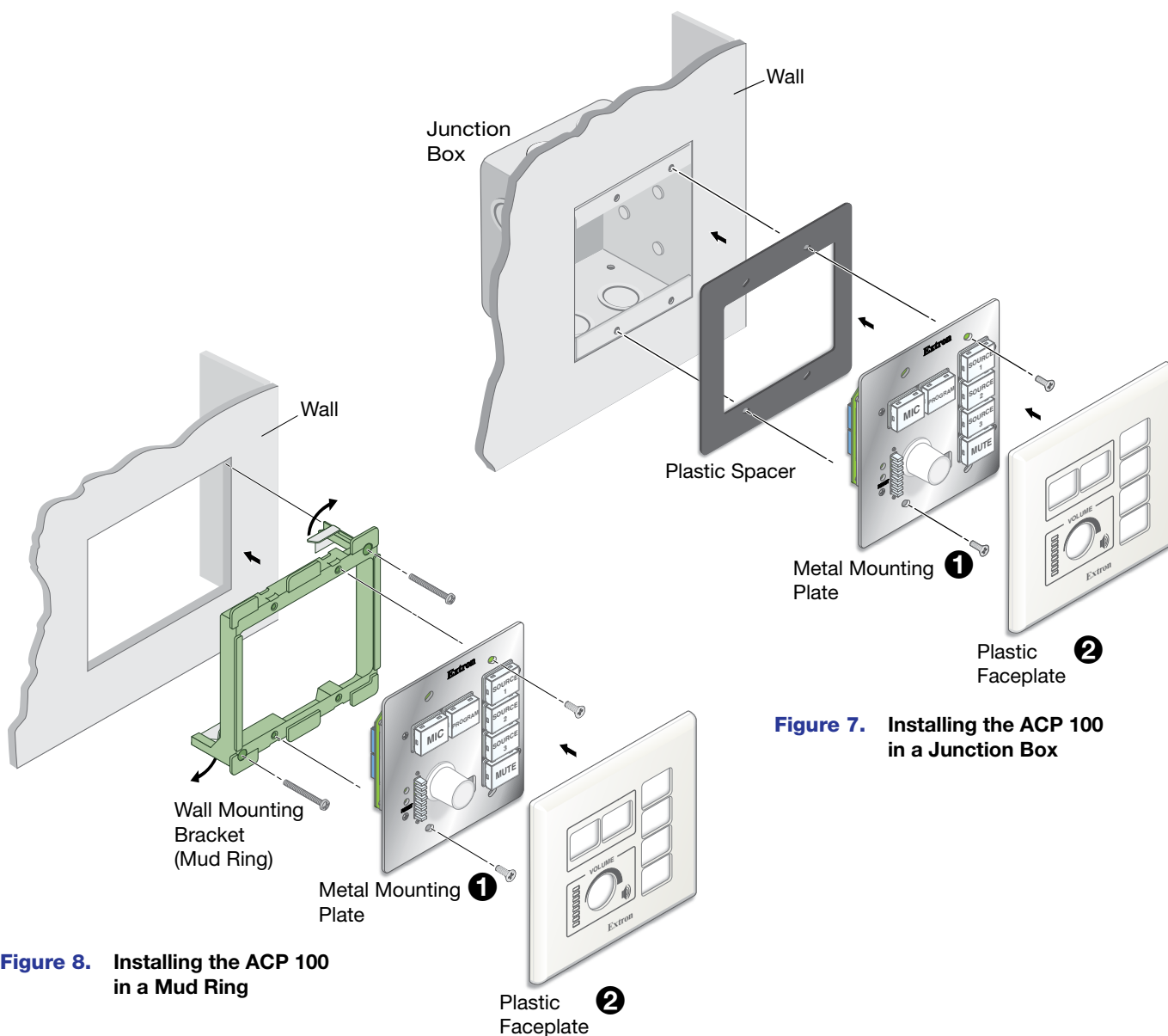


Figure 7. Installing the ACP 100 in a Junction Box

Figure 8. Installing the ACP 100 in a Mud Ring

For information on safety guidelines, regulatory compliances, EMI/EMF compatibility, accessibility, and related topics, see the **Extron Safety and Regulatory Compliance Guide** on the Extron website.