Unison Foundry Switch Panel

FSP-D, FSP-C, FSP-R

Installation Manual

Part Number: 7122M2100 Rev: A

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Introduction

Welcome to the installation manual for the Unison Foundry Switch Panel. This manual contains the procedures for safe and efficient installation of the panel and its various modules.

This documentation covers the following models:

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FSP-D-12-10A-RCD/4 ND-CE
FSP-D-12-10A-RCD/1 ND-CE
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About this document

This installation manual provides the information required to install and connect the Foundry Switch Panel. Additionally, a brief functional description and the delivery scope are included as well as the connection diagrams to connect the panel to the external wiring.

Disclaimer

ETC declines any liability or responsibility for consequential, collateral or indirect damage that results from non-compliance with this documentation.

Language

This document was produced in English. All translations are based on the language of the original manual.

Changes in this document

The content in this document is subject to change by the manufacturer. We reserve the right to make technical changes.

Intended audience

These instructions are intended for persons who perform different tasks regarding e.g. installation, commissioning, and using the equipment:

- Engineers
- Electricians
- Installation personnel
- Authorized Service Technicians

To safely commission and operate this equipment, the target audience must have read and understood the content of this manual and the corresponding safety instructions within and on the equipment.

Notes and symbols used in this manual

This manual contains statements that help to avoid harm or damage. They are emphasized as follows.

Hazard statements

WARNING

The signal word indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injuries.

Precautionary statements

NOTICE

The signal word indicates a situation which may result in damage to the product or to objects in its vicinity.

Tip: *This statement provides additional information related to the context.*

Manufacturer's address

Electronic Theatre Controls

Schutterweg 35

6718 XC

Ede, The Netherlands

Phone: +49 (8024) 47 00-0

etcconnect.com/contactETC

Help from ETC Technical Services

If you have questions that are not answered by this document, try the Electronic Theatre Controls, Inc. support website at support.etcconnect.com or the main ETC website at etcconnect.com. If none of these resources are sufficient, visit etcconnect.com/contactETC and contact ETC Technical Services. Emergency service is available from all ETC offices outside of normal business hours.

When calling for help, take these steps first:

- Prepare a detailed description of the problem
- Go near the equipment for troubleshooting
- Find your notification number if you have called in previously

Please have the following information handy:

- Product model and serial number (located on the product label)
- A list of all option cards installed in the panel
- Type of control stations used (if any) including model number and quantity
- DMX or network control source used for system-wide control, if any

Product safety information

Intended use

The Foundry Switch Panel is a digitally controlled wall- or rack-mount panel providing power controls for the switching of up to 48 circuits. The Foundry Switch Panel is designed for 220–240 VAC applications and is intended for use in indoor entertainment, studio, stage, or architectural lighting systems.

Improper use

Any use that is not mentioned under "Intended use" is considered to be contrary to the intended use and can lead to personal injury and damage to property. ETC is not liable for damages caused by improper use of the device.

The risk is borne solely by the user or operator. The device must not be operated under the following circumstances:

- After unauthorized structural changes
- During repairs
- A power source that differs from the power source of the Foundry Switch Panel
- In outdoor or extremely humid environments prone to prolonged contact with precipitation, see *Technical Specification on page 11*.
- With connection cables other than specified by the manufacturer (see etcconnect.com/cablecross/).

Liabilities of the product owner

The General Terms and Conditions of Electronic Theatre Controls, Inc. apply (etcconnect.com/Warranty/).

Qualification of personnel

The Foundry Switch Panel is intended for professional use only. Read the entire manual before using this equipment.

Duties of the operating company

The operating company is responsible for compliance with the following safety requirements:

- Keep the operating instructions at the place of use at all times and make them available to staff. Ensure that the information is always complete and legible. If the unit is resold, pass on the instructions with the unit.
- In addition to the operating instructions, provide the generally applicable statutory and other binding rules and regulations and instruct staff accordingly.
- Supplement the instructions with existing national regulations (e.g. on accident prevention and environmental protection).
- Supplement the instructions with instructions on special operational features and on the duty of supervision and reporting.
- Ensure that the unit is used as intended and take suitable measures to prevent misuse.
- Ensure that the device is in perfect condition and safe to operate.
- Ensure that only authorized staff with the appropriate qualifications work on the device. Ensure that statutory minimum age limits are observed.

Electrical hazards

If the information on electrical safety is not observed either at all or to the extent necessary, electric shock, fire and/or serious personal injury or death may occur.

- Prior to switching on the devices, always make sure that the nominal voltage setting on the product matches the nominal voltage of the mains supply network.
- Never use the product if any of the power cables is damaged. Check the power cables and connectors on a regular basis to ensure that they are in proper operating condition and properly fastened.
- Do not insert plugs into sockets that are dusty or dirty. Insert the plugs firmly and all the way into the sockets provided for this purpose and tighten with screws.
- Do not open the unit. If you are experiencing technical difficulties, contact ETC Technical Support at support.etcconnect.com.
- Use suitable excessive voltage protection to ensure that no excessive voltage (such as that caused by a bolt of lightning) can reach the product. Otherwise, the person operating the product will be exposed to the danger of an electric shock.
- Any object that is not designed to be placed in the openings of the housing must not be used for this purpose. Doing so can cause short circuits inside the product and/or electric shocks, fire or injuries.
- Unless specified otherwise, the unit is not liquid-proof. Therefore, the equipment must be protected against penetration by liquids. If the necessary precautions are not taken, the user may suffer electric shock or the product itself may be damaged, which can also lead to personal injury.
- Never use the product under conditions in which condensation has formed or can form in or on the product, e.g., if the product has been moved from a cold to a warm environment. Penetration by water increases the risk of electric shock.
- Prior to cleaning a device, switch off or disconnect the mains power supply. Use a soft, non-linting cloth to clean the product. Never use chemical cleaning agents such as alcohol, acetone or diluent for cellulose lacquers.

Safety labels

The following safety related labels are used on the device.

Label	Meaning
	High voltage! Danger of electric shock. • Do not touch live wires. • Turn off main power supply before opening the housing. • Make sure that the power supply remains switched off during installation and maintenance work.

Applicable standards

The following standards are applicable for the construction and production of the Foundry Switch Panel:

- Low Voltage Directive (LVD) 2006/95/EC and IEC/EN 61010-1 (Safety requirements for electrical equipment for measurement, control and laboratory use Part 1: General requirements)
- IEC 60529 (Degrees of protection provided by enclosures)
- European Electromagnetic Compatibility (EMC) Directive 2014/30/EU
- RoHS 2011/65/EU (Restriction of Hazardous Substances Directive)

Storage requirements

Moisture and soiling of the devices can lead to the destruction of the devices.

- Protect the equipment from moisture, dirt and damage during transport, storage, and operation.

Returning products

Companies selling electrical and electronic goods in the European Union must conform to the EU legislation for electrical and electronic equipment (EEE), which includes the Waste Electrical and Electronic Equipment Directive (WEEE). Assigned duties affect product design of the equipment, disposal of used appliances as well as organizational responsibilities, i.e. product registration.

At end-of life return your product back to ETC. ETC will dispose used equipment in such a manner as to meet all relevant local, country and EU requirements and guideline.

- To return products mark them clearly with "used device".
- To return a product for diagnosis and/or repair, contact us prior to sending it so we can issue a Return Material Authorization (RMA) number for you.
- Send them to the *Manufacturer's address on page 5*.

Product description

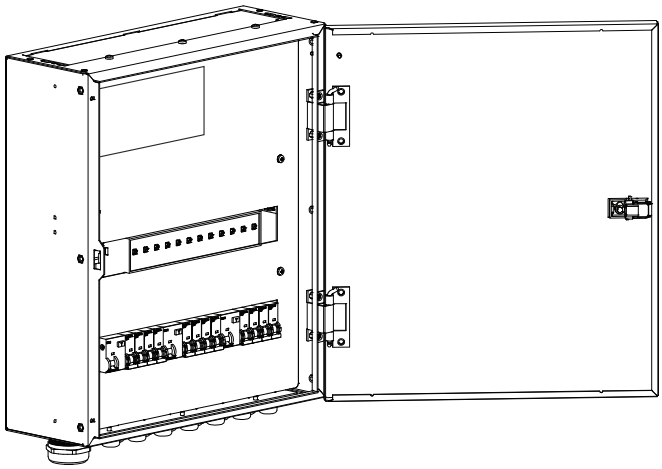
Overview and variants

The Foundry Switch Panel consists of a metal enclosure with a removable front panel and removable top and bottom access panels. The top and bottom panels serve as access points for socket and power supply cables, as well as network connection cables.

The Foundry Switch Panel must be mounted to a sufficiently sturdy surface or wall.

NOTICE

The panel is covered by the manufacturer's standard limited warranty (see etcconnect.com/Warranty/).



The Foundry Switch Panel comes in the following interface variants and two sizes, housing 12 or 24 channels (also refer to *Technical Specification on page 11*):

- **Foundry Switch Panel-DMX (FSP-D)**: Connection to the lighting environment in theatrical or architectural lighting via DMX512 bus.
- **Foundry Switch Panel-Connect (FSP-C)**: Connection to the separate user interface software and RJ45 Ethernet network connector.
- **Foundry Switch Panel-Connect Client (FSP-CC)**: Connect Client utilizes the primary rack processor to increase total circuit count to 48. Connect Client must be co-located next to the primary FSP-C. Maximum of one FSP-CC per FSP-C.
- **Foundry Switch Panel-Report (FSP-R)**: Additional report function with the monitoring of power supply and functions, as well as controlling and monitoring of the power load curves during switch-on or powering up after sudden power loss.
- **Foundry Switch Panel-Report Client (FSP-RC)**: Report Client utilizes to the primary rack processor to increase total circuit count to 48. Report Client must be co-located next to the primary FSP-R. Maximum of one FSP-RC per FSP-R.

Manufacturer’s nameplate

The nameplate is located in the top left corner on the front panel. Do not alter, overwrite, or remove the nameplate.

Technical Specification

Physical properties

Type	Foundry Switch Panel Models with 12 Channels	Foundry Switch Panel Models with 24 Channels
Number of circuits with air gap electromechanical relays	12x10 A/2.3 kW	24x10 A/2.3 kW
Maximum number of relay switching	12	24
Dimensions (W x H x D)	440x500x175 mm	440x800x175 mm
Weight, approximately	15 kg	25 kg
Cooling	Convection air flow	
Ambient temperature range	0°C to 40°C, 20%–85% non-condensing humidity	

Connections and interfaces

Type	Foundry Switch Panel with 12 channels	Foundry Switch Panel with 24 channels
Power status indicator	1–Blue	1–Blue
DMX status indicator	1–Green	1–Green
Network status indicator		1–Green (FSP-C, FSP-R only)
Error indicator		1–Red (FSP-C, FSP-R only)
Current feed (max.)	63 A	63 A
Interfaces	DMX512 on terminals	DMX512 terminals for the FSP-D, or using PCP-Mk2 for the FSP-C or FSP-R which includes: DMX In and DMX Thru, Emergency contact closure, and an RJ45 Ethernet connector. See *page 26* for all connection options.
Display (FSP-C, FSP-R)	LED status indicators	Graphical display with button pad

Relay specification

Type	Specification
Latching	Mechanical
Switch load, max.	20 A/240 V
Load capacity options	• 30 mA, 10 A, C-Curve RCBO per circuit • 30 mA RCD breaker per four circuits with four 10 A C-Curve Single pole or neutral-disconnect breakers • All breakers are 6 kA short circuit interrupt rating
Relay Contact rating	50 A / 277 V
Electrical endurance	• 50 A Resistive @ 100,000 operations • 20 A Incandescent Lamp @ 30,000 operations • 16 A Electronic ballast @ 6,000 operations • 16 A Electric motor @ 3.000 operations
Rated life expectancy (at full load)	• 1,000,000 mechanical activation cycles • 100,000 cycles at full resistive load • 30,000 cycles full motor, inductive, tungsten • 6,000 cycles and electronic (LED) **Note:** Decreasing loading increases the rated life expectancy of the relay inversely proportional to the square of the load.
Isolation between open contacts	1500 Vrms

Wire connections, cable sizes and dimensions

Cable cross section for output load terminals

Solid or stranded conductors	0.5–6 mm²
Stranded conductors with ferrules	0.5–4 mm²
Strip length	11–13 mm

Cable cross section for insert input terminals

Solid conductors	0.5–35 mm²
Stranded conductors	6–35 mm²
Strip length	12–14 mm

Delivery scope

Foundry Switch Panel-DMX

Models	• FSP-D-XX-10A-RCD/X XX - CE
Content	• Drill template • Built-up cabinet with access panels • Accessory bag • Information guide/safety warnings

Foundry Switch Panel-Connect/Report

Models	• FSP-C-24-10A-RCD/X XX - CE • FSP-R-24-10A-RCD/X XX- CE
Content	• Drill template • Built up cabinet with access panels • Accessory bag containing information guide/safety warnings • Network interface keystone unit (with zip-ties)

Foundry Switch Panel-Connect Client/Report Client

Models	• FSP-CC-24-10A-RCD/X XX - CE • FSP-RC-24-10A-RCD/X XX- CE
Content	• Drill template • Built up cabinet with access panels • Client rack communication ribbon cables • Accessory bag containing information guide/safety warnings

Tip: *Optional access panels with cable glands or neoprene push-through plate must be ordered separately.*

Foundry Switch Panel Accessories

Models	• FSP-APK-N Neoprene Access Panel Kit • FSP-APK-G Cable Gland Access Panel Kit • FSP-RM-24 Rack-mount Kit 24-Channel Panel • FSP-RM-12 Rack-mount Kit 12-Channel Panel

Installation process

Overview

The following steps and procedures are recommended for the installation of the Foundry Switch Panel:

1. Checking the delivery and preparing the Foundry Switch Panel, see *Delivery check and preparation on page 14*.
2. Mounting the Foundry Switch Panel, see *Mounting on page 16*.
3. Assembling the access panels, see *Access panel assembly on page 17*.
4. Assembling the Foundry Switch Panel cables, see *Cable assembly on page 19*.
5. Connecting the cables, see *Cable connection on page 22*.
6. Performing function and safety tests, see *Performing function and safety tests on page 24*.
7. Mounting the I/O connection PCB assembly, see *I/O board (FSP-C and FSP-R only) on page 25*.
8. Assembling the front panel and finalizing the installation, see *Assembling the front panel and finalizing on page 27*.

Delivery check and preparation

Checking the delivery

After obtaining the Foundry Switch Panel box, proceed with the following steps:

1. Check the shipping container for physical damage. If you find damage, document it to help with a claim against your shipper.
2. Unpack your order and check the contents against the packing list to be sure your order is complete. If you discover a problem, contact the ETC office nearest you (etcconnect.com/contactETC).
3. Open the carton box and check the box and content for damages. If damaged, contact the ETC Support, see *Help from ETC Technical Services on page 6*.
4. Compare the content with the delivery scope on the delivery note. In case of discrepancies, contact ETC.

NOTICE

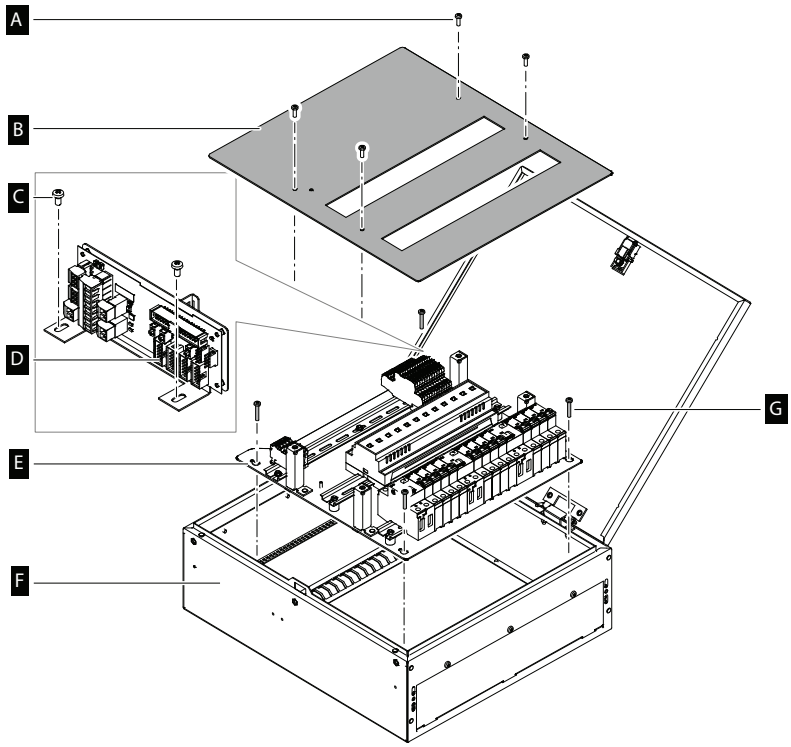
Do not dispose of the delivery box.

Preparation

WARNING

Metal parts may have sharp edges that cause cutting of fingers.

Be careful when handling metal parts with sharp edges.



A	Front panel screws	B	Front panel
C	I/O connection PCB assembly screws	D	I/O connection PCB assembly
E	Mounting plate	F	Housing
G	Mounting plate screws		

1. Unpack the Foundry Switch Panel and place it on a even surface, covered with a blanket.
2. Carefully open the front door by about 45°. **Note:** When opening the door too wide, the door weight causes the hinges to bulge.
3. Support the open door by leaning it against the box or a wall.
4. Remove the front panel screws. Keep the screws for re-assembly.
5. Slightly lift off the front panel and disconnect the grounding cable from the back of the front panel.
6. Lift out the front panel at the top and bottom rim.
7. Place the front panel into the open box.
8. Unplug the ribbon cable at the I/O connection PCB assembly.
9. Unscrew the PCB assembly support from the mounting plate.
10. Carefully remove the I/O connection PCB assembly and place it into the box.

When using a bottom-feed configuration, proceed with the additional steps:

11. Disconnect the mounting plate grounding cable from the housing.
12. Lift out the mounting plate by holding it at the top notch and the bottom rim.
13. Place the mounting plate into the box to protect it from damage.

Mounting

Tools and auxiliary materials required

- Hammer drill
- 8 mm screws with wall anchors (for wall-mount), not provided
- Torque wrench

Safety

WARNING

Metal parts may have sharp edges that cause cutting of fingers.

Be careful when handling metal parts with sharp edges.

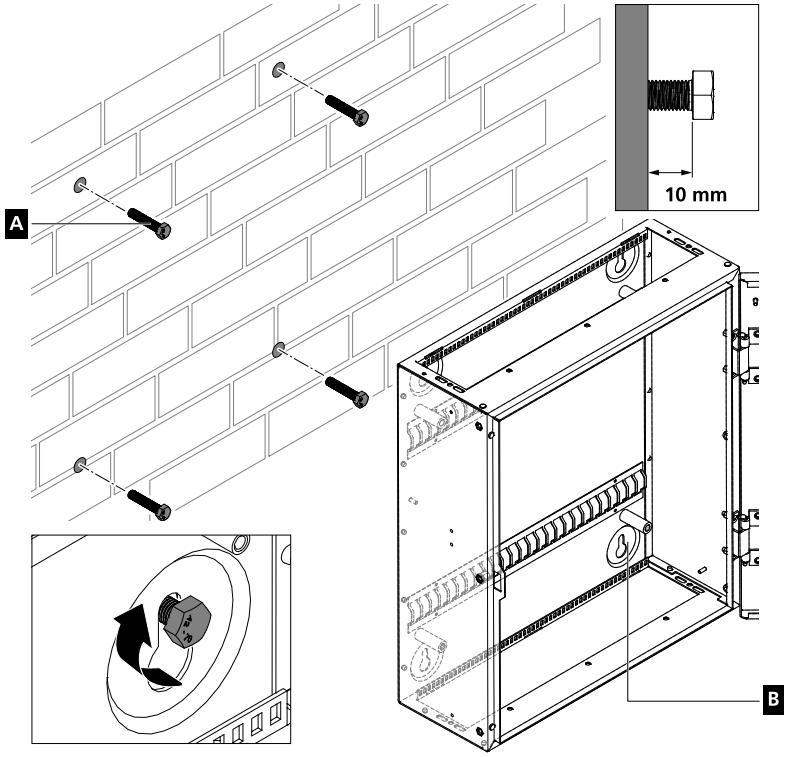
WARNING

Lifting heavy devices may lead to back injury.

Always carry and lift the equipment with two people.

Tip: *The installation process shows the 12-channel version of the Foundry Switch Panel with access panels removed for cable entry from below. However, the installation is identical for all versions.*

Mounting the Foundry Switch Panel



A	Screws 8 mm	B	Mounting keyholes

1. Using the drill template delivered in the box, drill four holes into the wall and insert the wall anchors.
2. Screw in the wall mounting screws until they protrude approximately 10 mm.
3. Place the housing on the screw shafts so that the narrow part of the keyholes are directed up.
4. Let the housing sink until the screw shafts fit into the tops of the keyholes.
5. Tighten the screws with a torque wrench until the housing sits firmly against the wall surface.

Access panel assembly

Three different types of access panels can be used as cable ports:

- Default access panel: Access panel with markings for cable glands. The default access panel type can be used with or without drilling holes for cable glands.
- FSP-APK-N: Access panel with a single opening covered by an elastic rubber with preformed openings that can be punched through for cable entries.
- FSP-APK-G: Access panel with pre-cut holes for cable glands and cable glands that must be assembled beforehand.

The default access panel is included. Contact ETC to order different Access Panel Kits (models listed in Foundry Switch Panel Accessories on page 13).

Tools required

- Screwdrivers

Safety

WARNING

Metal parts may have sharp edges that cause cutting of fingers.

Be careful when handling metal parts with sharp edges.

Tip: *The preparation of the access panels, such as assembling the cable glands, is described in the respective panel package that can be ordered separately.*

Preparing the access panels

All types of access panels can be assembled at the top or at the bottom of the Foundry Switch Panel housing, depending on the external connection entry side.

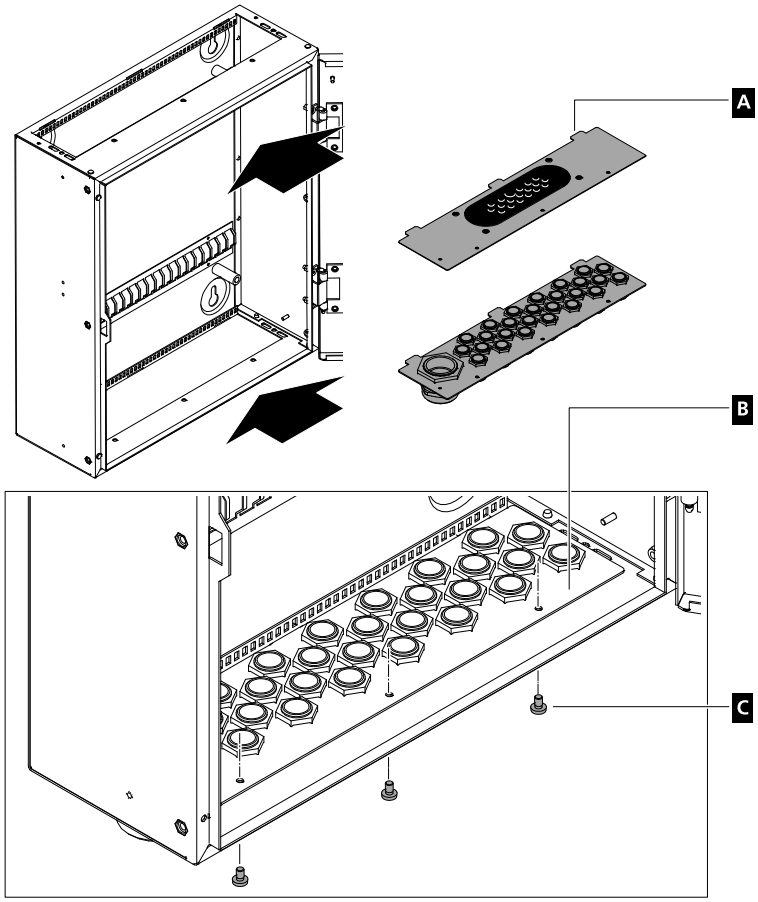
- If the entry side is at the top of the Foundry Switch Panel housing, only the top access panel must be removed.
- If the entry side is at the bottom of the Foundry Switch Panel housing, the bottom and top access panels must be removed (for additional preparation of the Foundry Switch Panel housing, refer to *Delivery check and preparation on page 14*).

1. Remove the top access panel or the bottom access panel, or both according to the access requirements of the installation site.
2. Prepare the access panels FSP-APK-N or FSP-APK-G as described in the instructions delivered with the access panel.

When mounting the default access panel without drilling holes for cable glands, no preparation is necessary.

Mounting the access panels

If the access panel FSP-APK-G is used without holes, it must be assembled after the cables have been installed in the Foundry Switch Panel.



A	Access panel tab	B	Access panel FSP-APK-G (example)
C	Access panel screws		

1. Insert access panels FSP-APK-N or FSP-APK-G at the top or the bottom of the housing so that the panel tabs fit into the slots at the rear of the housing.
2. Slightly move the default access panel until the resulting gap between the panel and the rear of the housing is wide enough for the cables.
3. Fasten the access panels FSP-APK-N or FSP-APK-G with screws at the front.
4. Clean the Foundry Switch Panel housing with a vacuum cleaner to remove metal or plastic shavings.

Cable assembly

Tools and auxiliary materials

- Side cutter
- Cable tags
- Cable ties
- Screwdrivers

Safety

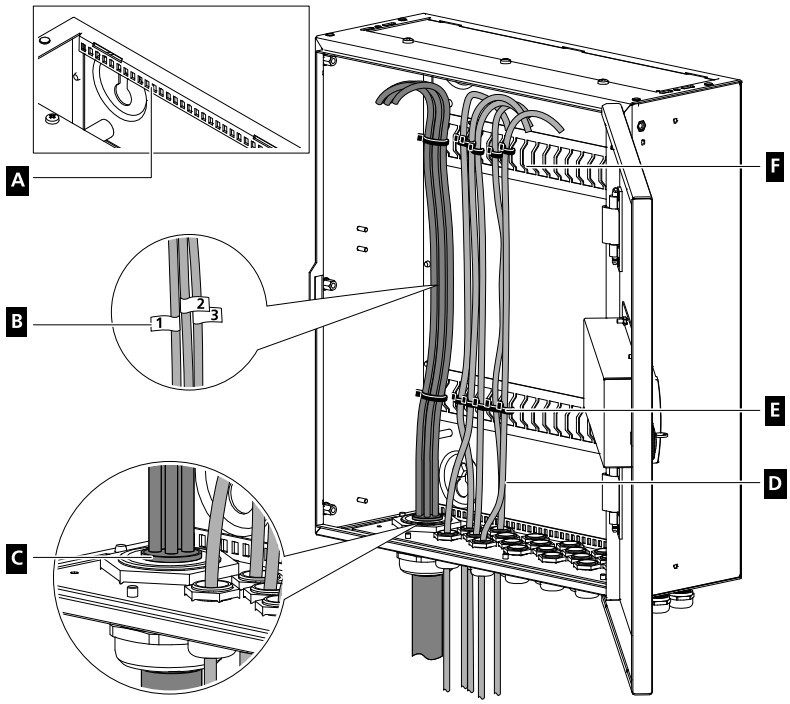
WARNING

Electrical shock may cause severe damage to health and heart failure

- Only qualified electricians are allowed to perform installation of cables and electrical parts.
- Always ground the equipment due to high leakage current.
- Isolate power before removing covers.
- Make sure that the power supply is securely switched off and secure against unintentional restarting.

Assembling the cables

Tip: *The following steps show the 12-channel version of the Foundry Switch Panel with access panel FSP-APK-G and external connection from below. However, the process is identical for all versions.*



A	Top strain relief/cable tie bar	B	Cable tags
C	Main power supply cable	D	Channel power cable
E	Cable tie	F	Upper cable tie points

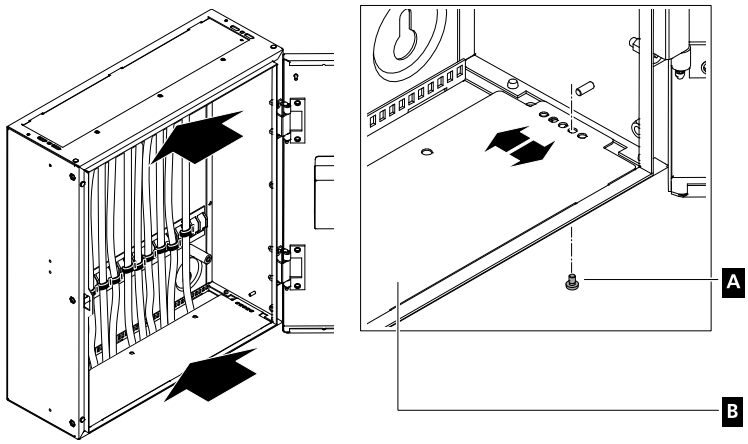
1. Insert the main power supple cable according to the position of the external connections.
   - When accessing the Foundry Switch Panel from above, insert the main power supply cable until it conveniently reaches the main power relay.
   - When accessing the Foundry Switch Panel from below, insert the main power supply cable until it protrudes approximately 110 mm above the upper rim of the housing.
2. Strip the outer jacket of the main power supply cable directly at the entry point.

3. Fasten the loose conductors of the main power supply cable with cable ties according to the position.
    - When accessing the Foundry Switch Panel from above, fasten the loose conductors to the top strain relief *A*.
    - When accessing the Foundry Switch Panel from below, fasten the loose conductors to the lower and upper cable tie points *F*.
4. Insert the channel power cable according to the position of the external connections.
    - When accessing the Foundry Switch Panel from above, insert the channel power cable until it conveniently reaches the leftmost relay.
    - When accessing the Foundry Switch Panel from below, insert the channel power cable until it protrudes approximately 110 mm above the upper rim of the housing.
5. Fasten the channel power cables with cable ties according to the position.
    - When accessing the Foundry Switch Panel from above, fasten the channel power cables to the top strain relief *A*.
    - When accessing the Foundry Switch Panel from below, fasten the channel power cables to the lower and upper cable tie points *F*.
6. Pass all cables including DMX512 bus line or Ethernet cable through the upper cable tie points *F* holders and secure the cables with cable ties.
7. Mark each cable at a point roughly in the middle between the upper and lower cable tie points *A and F* with cable tags.

Assembling the default access panel

NOTICE

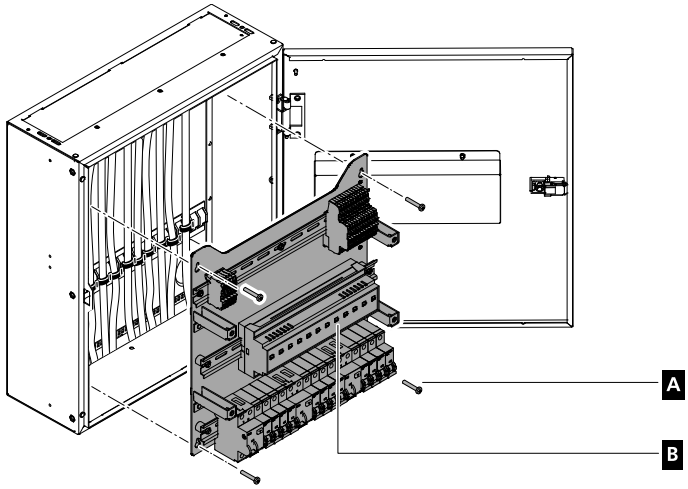
The default access panel must be inserted after the cables to the housing to prevent the metal panel from damaging the cable jackets.



A	Access panel screws	B	Default access panel

1. Insert the access panel at the top or the bottom of the housing so that the panel tabs face to the front of the housing. This creates a gap at the rear of the housing where the cables can pass through.
2. Fasten the access panel with screws through one of the openings at the side so that the gap at the rear of the housing is as narrow as possible without touching the cable mantles.

Assembling the mounting plate



A	Mounting plate screws	B	Mounting plate

1. Insert the mounting plate by holding it at the top notch and bottom rim.
2. Fasten the mounting plate with screws.
3. Connect the grounding cable of the mounting plate to the stud inside the housing on the left.

Cable connection

Tools and auxiliary materials

- Wire stripper
- Cable tags

Safety

WARNING

Electrical shock may cause severe damage to health and heart failure

- Only qualified electricians are allowed to perform installation of cables and electrical parts.
- Always ground the equipment due to high leakage current.
- Isolate power before removing covers.
- Make sure that the power supply is securely switched off and secure against unintentional restarting.

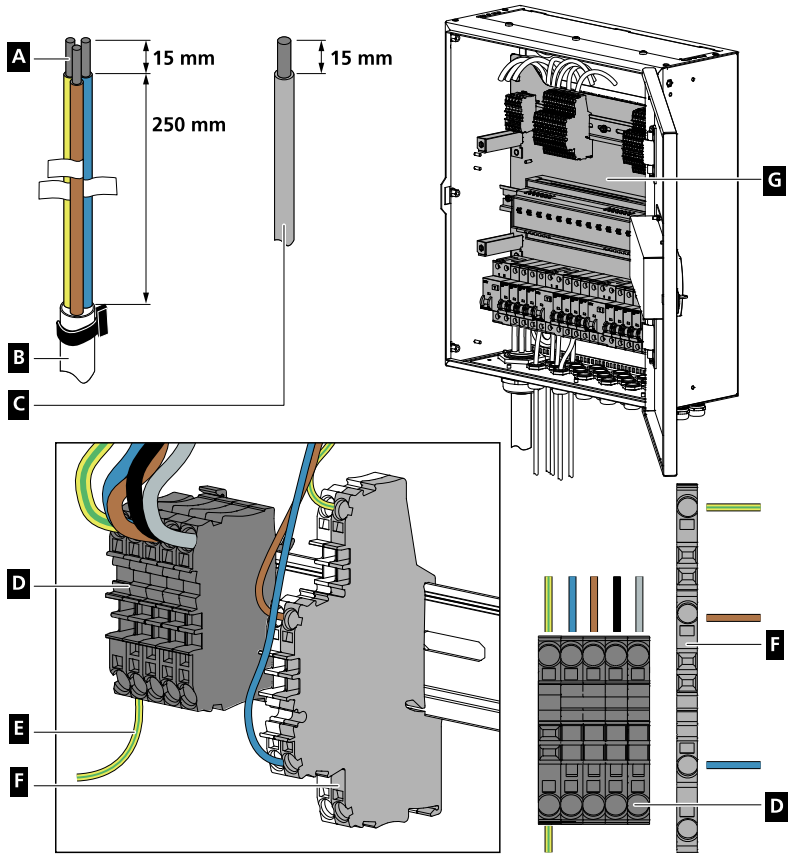
NOTICE

Incorrect connection may cause damage to the equipment.

Do not energize the equipment without previous inspection.

Connecting the cables

Tip: *The following steps show the 12-channel version of the Foundry Switch Panel with access panel FSP-APK-G and external connection from below. However, the process is identical for all versions.*



A	Strand	B	Channel power cable
C	Cable	D	Terminal
E	Grounding cable	F	Relay module
G	Mounting plate		

1. Strip the outer jacket from each channel power cable after passing through to approximately 250 mm above the strain relief or cable tie point.
2. Label each channel power cable with numbered cable tags at the cable end.
3. Strip the main power supply cables to a strand length of approximately 15 mm.
4. Insert the main power supply neutral, line and ground wires into the terminal (see color coding) and clamp firmly with screws.
5. Cut each channel power cable to size and strip to a strand length of approximately 15 mm.
6. Insert the strands of the channel power cables into the sockets of the relay modules until they stop. This will close the socket clamp and contact the strands.

Performing function and safety tests

After the main power supply cable and the channel power supply cables are connected, the correct function and safety of the cable assembly must be tested.

Tools required

- Phase tester

Function test

1. Check for proper fitting of all cables and connections.
2. Check for intact isolation of and kink free layout. Replace if damaged.
3. Switch off the feeding breakers and make sure that mains power remains switched off.
4. Turn off all breakers and relays.
5. For each relay, check the continuity between all incoming phases.

NOTICE

There must be no continuity between the connections.

Safety tests

Additionally, electrical safety tests must be performed to make sure that the installation can operate safely.

1. Proceed with the electrical safety tests according to local regulatory requirements.
2. Check the resistance between grounding and phase current.
3. Check resistance between phases, neutral, and PE with a digital voltmeter (DVM).
   - Phase-to-phase resistance should be 10 MΩ or higher.
   - Phase-to-ground/earth resistance should be 10 MΩ or higher.
   - Neutral-to-ground/earth resistance should be less than 1 Ω.
   - Phase-to-neutral resistance should be 10 MΩ or higher.
4. Check the voltages between phases, neutral, and PE:
   - 230 V +/- 10% between L1 and N, L2 and N, and L3 and N
   - 5 V or less between N and PE
   - 400 V +/- 10% between L1 and L2, L2 and L3, and L1 and L3

If you are installing an FSP-D, proceed to *DMX DIN Termination (FSP-D only) on page 25*.

If you are installing an FSP-C or FSP-R, proceed to *I/O board (FSP-C and FSP-R only) on page 25*.

DMX DIN Termination (FSP-D only)

FSP-D has DIN rail-mounted terminal blocks with push-in terminals for DMX.

Tool required

- Wire cutter

Terminate DMX

1. Remove the mantle of the DMX512 cable for approximately 20 mm.
2. Remove the jackets of the individual conductors for approximately 7 mm.
3. Insert the strands into the sockets of the adapter in the top right corner of the mounting plate until the lock snaps. The ports are labeled.
   - 0 V (Data 0 V)
   - + (Data)
   - - (Data)

Proceed to *Assembling the front panel and finalizing on page 27*.

I/O board (FSP-C and FSP-R only)

The I/O connector board on models FSP-C and FSP-R provides connectors for both network controllers (refer to the nameplate on the front panel). The I/O board provides connections for:

- DMX512
- Ethernet
- Relays
- Power Control Processor Mk2 (FSP-C and FSP-R only)
- Emergency contact input

Tool required

- Wire cutter

Terminate DMX Connectors

Follow the instructions provided in the DMX termination kit.

Terminate Ethernet

The Ethernet cable of the local network must be terminated at the provided keystone network adapter.

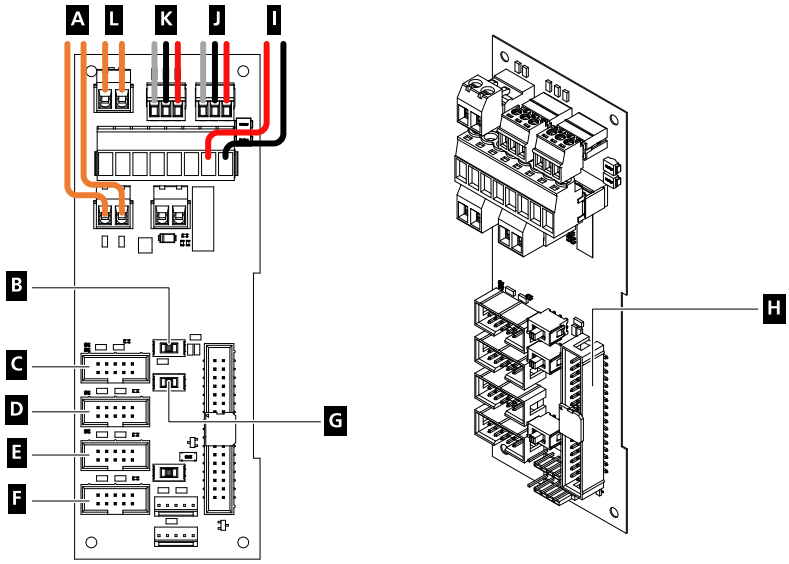
1. Open the keystone adapter and remove the upper plastic cap.
2. Push the cap over the Ethernet cable.
3. Carefully remove the mantle of the Ethernet cable for approximately 15 mm without damaging the conductors.
4. Insert the conductors according to the color markings on the adapter by pushing them carefully into their respective slots.
5. Clamp the conductors by closing the cap.
6. Place the cable into the adapter opening so that the cable mantle rests in the adapter opening.
7. Close the adapter until it snaps close.
8. Insert the adapter into the support at the back of the PCB assembly until it snaps into place.

Mounting the I/O board

1. Insert the black network processor cable of the controller into the keystone adapter.
2. With the cables inserted, place the PCB assembly support on the mounting plate and fasten with screws.

Tip: *For additional connections, refer to the I/O assembly board layout in the section* *I/O board connections on page 26*.

I/O board connections



A	Connection indicator	B	DMX termination (last device on DMX bus)
C	Relay 1-12	D	Relay 13-24
E	Relay 25-36 (from optional client panel)	F	Relay 37-48 (from optional client panel)
G	Emergency input polarity switch (see below)	H	Ribbon cable connection (FSP-C and FSP-R only)
I	Reserved for future development	J	DMX through (optional, to next DMX device)
K	DMX in (from DMX source or previous DMX device)	L	Emergency contact input

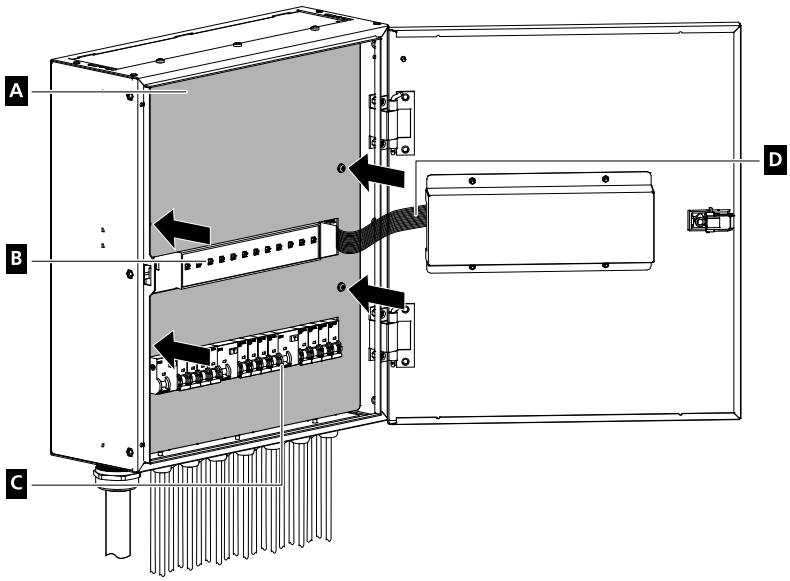
Emergency input polarity switch (G)

- NO: normally open (emergency function is active when input closes)
- OFF: no emergency activation
- NC: normally closed (emergency function is active when input opens)

Assembling the front panel and finalizing

Assembling the front panel

Tip: *The following steps show the 12-channel version of the Foundry Switch Panel with access panel FSP-APK-G and external connection from below. However, the process is identical for all versions.*



A	Front panel	B	Relay switches
C	Breakers	D	Ribbon cable

1. Reconnect the grounding cable to the back of the front panel.
2. Clean out dust, metal scraps or other debris from the interior of the enclosure.
   - ETC recommends vacuuming the interior.
3. Place the front panel on the mounting plate by holding it at the top and bottom rim. The openings in the front panel must fit properly around the protruding relays and breakers.
4. Fasten the front panel with screws.
5. Insert the ribbon cable from the Power Control Processor Mk2 on the door into the socket of the I/O connection PCB assembly (refer to *I/O board connections on page 26*).
6. Close the remaining openings around the relays and breakers with plastic caps provided.
7. Check for loose connections, bare wires, and damaged insulation.

Finalizing

Connect to the lighting control system depending on the connection type of the Foundry Switch Panel:

For the Foundry Switch Panel FSP-D

The FSP-D requires a relay module start address and loss behavior configuration settings. This can be accomplished through the ETC Site Link app (NFC), by using ETC Concert, or another RDM configuration application.

ETC Set Light app

1. Download and install the latest version of the ETC Set Light app on your compatible smartphone from the App Store® or Google Play™ store. *Resources on page 30*.
2. Start the app and hold the smartphone close to the relay module, hovering over the area with the NFC symbol near the ETC logo.
3. Configure the relay module start address and loss behavior.
4. Close the front door to the panel.
5. Switch on the power supply.

ETC Concert or other RDM configuration tool

1. Close the front door to the panel.
2. Switch on the power supply.
3. Download and install the ETC Concert application or other RDM configuration tool. See *Resources on page 30*.
4. Connect to the panel following the instructions provided with the related application and set the relay module start address and loss behavior.

For the Foundry Switch Panel FSP-C and FSP-R

No configuration is required as the Foundry Switch Panel will automatically connect to the Power Control Processor Mk2 (PCP-Mk2).

1. Close the front door.
2. Switch on the power supply.

Tip: *Refer to the separate* Power Control Processor Mk2 Configuration Manual *for configuration details. Documentation is available for free download at etcconnect.com.*

Cleaning the equipment

WARNING

Electrical shock causes severe damage to health and heart failure

- Before cleaning, switch off the equipment and disconnect the power supply adapter from the main power supply.

Never use strong solvents such as thinners, benzine, acidic or alkaline solvents, spray-type cleaners or abrasive cleaners as they may destroy the surface.

- Clean the outside of the Foundry Switch Panel with a slightly moistened cloth and a mild detergent solvent.
- Take care that no detergent or moisture enters the housing.
- Dry with a clean cloth.

NOTICE

Excessive moisture may cause malfunction of the device.

If any material or liquid gets into components of the unit during cleaning, contact ETC.

Resources

If you have any difficulties installing your system, contact Technical Services at the office nearest you. See *Help from ETC Technical Services on page 6*.

Power Control Processor Mk2

Reference the *Power Control Processor Mk2 Configuration Manual* for configuration and operation instructions. Documentation is available for free download at etcconnect.com/Foundry-Switch-Panel/Documentation.

ETC Set Light app

Download the ETC Set Light app on your smartphone from the App Store® or Google Play™ store. Visit etcconnect.com/Support/Apps/Lighting-Fixtures.aspx for more information.

Concert

Visit etcconnect.com/Concert to download the Concert application for PC or Mac and view the Concert help or download the *ETC Concert User Guide* for more information.

Cable Cross Database

ETC maintains a database of common cable types at etcconnect.com/cablecross/.

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