SPAN® Panel

Installation manual

For model numbers beginning with PL7R- and PL4R-

span.io/techportal
This document does not always reflect the latest version.
Refer to Tech Portal for most up-to-date installation Manual.

Version: 10.06.2025

Product specifications
All specifications and descriptions contained in this document are accurate at the time of publication. In the interest of product improvement, SPAN reserves the right to make product modifications at any time without advance notice.

For the latest SPAN product and installation documents, visit: www.span.io/techportal.

For errors or omissions, contact: support@span.io.
For complete product specifications and information on product listing and certification, refer to the Product Datasheet at www.span.io.

SPAN assumes no liability for injury or property damage due to installation or service attempted by unqualified individuals, or due to a failure of installers or service technicians to properly follow safety, installation, and service instructions.

Terms of Service
The SPAN Terms of Service (available at www.span.io/terms-of-service) govern your use of the SPAN platform and products.

Privacy Policy
Span respects your right to privacy and the use of your personal information. Please visit www.span.io/privacy for more information about our data practices.

Trademarks
The following are registered trademarks of SPAN in the United States.
SPAN, SPAN HOME, SPAN INSTALLER, SPAN DRIVE, SPAN Logo

All other trademarks in this document are the property of their respective owners, and their use within does not imply endorsement of their products or services. The unauthorized use of any trademark displayed in this document or on the product is strictly prohibited. Appropriate licenses must be obtained before use.

Electronic device waste removal
Proper disposal of electronic equipment is required. Refer to local codes for disposal requirements. To arrange for proper disposal of this product, contact your local authorities or dealer for proper disposal requirements.

Warranty
To secure the full warranty term under the limited warranty for your SPAN Panel, you must complete the commissioning process in the SPAN Installer® App and create an account in the SPAN Home® App. For complete warranty information, please refer to the SPAN Panel Limited Warranty at www.span.io/panel-limited-warranty. If you would like to request a free copy of the limited warranty terms, please contact customer support at 415-286-5252.

Important safety instructions
SAVE THESE INSTRUCTIONS
Follow these instructions during installation, maintenance, and operation of the equipment. This section contains safety information that must be observed at all times when working on or using the equipment.
- In case of fire or other emergency:
- If safe to do so, switch-off the main or upstream breaker for the Panel.
- Contact the fire department or other required emergency response team.
- Evacuate the area, and alert others in the area.
- In case of unusual noise, smell, or smoke:
  - Ensure nothing is in contact with the SPAN Panel or other equipment.
  - Ventilate the space.
- Contact your installer or SPAN Customer Support.

Symbols used
These symbols indicate important safety information in the documentation
or on the equipment:

WARNING: Indicates a situation where failure to follow instructions or use proper materials may be a safety hazard that may result in serious injury, loss of life, or destruction of equipment. Use caution and do not proceed until the indicated conditions or required procedures are fully understood and met.

CAUTION: Indicates a situation where failure to follow instructions or use proper materials may be a safety hazard that may result in minor injury or damage to equipment. Do not proceed until the indicated conditions or required procedures are fully understood and met.

NOTE: Indicates an important step, or additional information that highlights best practices or procedures. Follow instructions carefully.

RISK OF ELECTRIC SHOCK: Indicates components that present risk of electric shock.

PROTECTIVE CONDUCTOR TERMINAL: Indicates location of grounding connection on the equipment.

REFER TO INSTRUCTIONS: Indicates that user should refer to operating or installation instructions before proceeding.

ATTENTION: Read all instructions and cautionary markings in this document and on the equipment before installing the SPAN Panel. Failure to do so may result in equipment damage, electric shock, serious injury, or loss of life. Any defect or loss of product functionality resulting from a failure to follow these instructions is excluded under the SPAN Panel Limited Warranty.

All installations must conform to the laws, regulations, codes, and standards applicable in the jurisdiction of installation. Before starting an installation, consult a local building or electrical inspector for current requirements. Local codes may vary but are adopted and enforced to promote safe electrical installations. A permit may be needed to do electrical work, and some codes may require an inspection of the electrical work.

Jurisdiction	Code
United States	National Electrical Code (ANSI/NFPA 70)

General
WARNING: Risk of electric shock. Risk of fire. Only qualified electrical personnel should install, troubleshoot, service, or replace the equipment.
WARNING: Risk of electric shock. Apply appropriate personal protective equipment (PPE), and follow safe electrical work practices during installation and service. Turn off all power supplying this equipment before working on or inside equipment. Always use a properly rated voltage sensing device to confirm power is off. Replace all devices, covers, and doors before turning on power to the equipment.
WARNING: To protect the equipment and its components from damage when transporting, handle with care. To help prevent damage, leave all equipment in its shipping packaging until it is ready to be installed.
WARNING: Inspect the equipment for damage before installing. Do not install the equipment if it has been damaged in any way.
WARNING: Do not insert foreign objects into any part of the equipment.
WARNING: Do not expose the equipment or any of its components to direct flame.
WARNING: Do not attempt to open, disassemble, repair, tamper with, or modify the equipment other than what is permitted in this manual. Contact the installer who installed the equipment for any repairs.
WARNING: Do not connect life-support systems, other medical equipment, or any other devices where product failure could lead to injury to persons, or loss of life to circuits that can be remotely switched on/off.
CAUTION: Do not use solvents to clean the equipment or expose the equipment to flammable or harsh chemicals or vapors. Do not allow petroleum-based paints, solvents, or sprays to contact nonmetallic parts of the equipment.
CAUTION: Do not use parts or accessories other than those specified for use with the equipment.

Installation and use
WARNING: Risk of electric shock. Risk of fire. Only use electrical system components approved for wet locations.
WARNING: Risk of electric shock. Risk of fire. Ensure that all wiring is correct, and that none of the wires are pinched or damaged.
WARNING: Risk of electric shock. Risk of fire. Before making any connections, verify that the circuit breaker(s) are in the 'off' position. Double-check all wiring, terminations, and Panelboard Accessory bolted joints are torqued to specifications before applying power.
WARNING: Risk of electric shock. Improper servicing of the equipment or its components may result in a risk of shock or fire. To reduce these risks, disconnect all wiring before attempting any maintenance or cleaning.
WARNING: Risk of electric shock. Always de-energize the equipment before servicing.
WARNING: Risk of electric shock. Do not use equipment in a manner not specified by the manufacturer. Doing so may cause damage to equipment, injury, or loss of life.
WARNING: Risk of electric shock. Do not modify the dead-front other than to remove filler plates as needed.
NOTE: The equipment is intended to operate with a connection to the internet. Failure to maintain an internet connection may impact performance.
NOTE: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Changes or modifications not expressly approved by SPAN.io could void the user's authority to operate the equipment.

Environmental Conditions
WARNING: This equipment is only intended for operation in an environment as specified by contents of this document.
WARNING: Install the equipment in a location that prevents damage from flooding. Ensure that no water sources are above or near the equipment, including downspouts, sprinklers, or faucets.

California Proposition 65 Warning
WARNING: This product may contain chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

Contents

SPAN Panel models

SPAN Panel is an intelligent electrical panel with integrated connectivity, monitoring, and control for home loads, solar PV generation, energy storage, electric vehicle charging equipment, and the utility grid. Each SPAN Panel is wall-mounted, and similar in size, weight, and configuration to traditional electrical panels, allowing it to be installed in place of a typical 120/240 VAC or 120/208 VAC breaker panel using standard tools and materials.

PL7R-48MLO225-FG

Model Category
- P - Panel

Model Type
- L - Load Center
- M - Meter Combo

Panelboard Spaces
- 4
- 7

Enclosure Details
- R - Nema 3R
- S - Nema 1R
- F - with Flashing Kit

Gateway (G=Yes, N=No)

Feedthrough Lug (F=Yes, N=No)

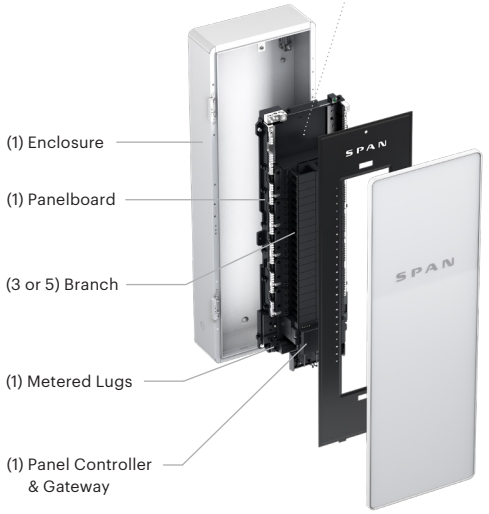
Main Breaker Capacity (if Main Lug, busbar capacity)
- 200 - 200A
- 100 - 100A
- 225 - 225A busbar capacity

Mains Type
- MID = Mains w/MID
- MCB = Mains without MID
- MLO = Main lug only

Circuit Spaces
(16, 24, 40, 48)

SPAN Panel installations may vary slightly between different models. This document covers installation instructions for all SPAN Panel MAIN 40, MLO 48, MAIN 16, and MLO 24 models. The factory model number for the SPAN Panel can be found on the outer packaging box.

SPAN Panel models PL7R- or PL4R
Parts in Common



SPAN Panel MAIN

- Main with pre-installed 200A Main Circuit Breaker (MCB)
- 40 or 16 circuit spaces
- Hardware ready for universal battery integration and generator and appliances control (future)

(or)

SPAN Panel MLO

- Additional Metered Lugs & Branch
- 48 or 24 circuit spaces

01 Unpacking & inspecting the Panel

Inspect the packaging and SPAN Panel for damage.
Ensure you have received the following components packaged separately:

Panel Parts

- ☐ SPAN Panel Enclosure
- ☐ SPAN Panelboard
- ☐ Gateway + Gateway Cable
- ☐ Deadfront & Door

Accessories Box

- ☐ (1) spare branch deadfront and screw
- ☐ (2) spare door latch assembly washers, screws
- ☐ (1) spare door latch handle screw
- ☐ (2) spare enclosure hinge assembly screws
- ☐ (1) T15 security torx bit
- ☐ (2) adhesive wire clips
- ☐ (2) service entrance barrier covers
- ☐ (2) Service equipment labels
- ☐ (1) Ground bar (Panel MAIN 16,24 only)

Additional Parts

- ☐ (1) SPAN 200 A main circuit breaker *
- ☐ (1) main bonding screw (Panel MAIN 16, 40 only)
- ☐ (2) relocatable ground bars **

* factory installed on Panel MAIN 16,40 only

** only (1) ground bar is factory installed on Panel 16,24

Print Materials

- ☐ Installation Manual
  (this document)
- ☐ Getting Started card
  (with instructions for homeowner to download SPAN Home® App)
- ☐ Cardboard drill template
  for wall mount alignment, retrofit circuits identification, and new construction dust cover

02 Installation requirements

Required equipment & tools

- ☐ Branch circuit breakers
  for load and generation circuits
  (see Selecting breakers)
- ☐ Main breaker (100-200A)
  for Panel MAIN 16,40 only
  (see **Installing Breakers**)
- ☐ Conduit and fittings suited to the installation
- ☐ Four #10 lag bolts or screws
  3 inch long (depending on attachment wall) for panel mounting, and washers (for use between fasteners and enclosure)
- ☐ Conductors rated to minimum of 75°C
  (See table below and markings on breakers for acceptable wire sizes)
- ☐ Cable for communication signaling between the SPAN Panel and external hardware
- ☐ Smartphone or tablet with SPAN Installer App for commissioning
- ☐ Torque wrench
  capable of 35 – 250 in-lbs (4 – 29 Nm)
- ☐ Allen bits
  (1/4" and 5/16")
- ☐ #2 Robertson square driver, slotted
- ☐ T30 Torx driver
- ☐ 7/16" hex socket
  (for Panel MAIN 16,40 only)
- ☐ Standard installation tools:
  wire cutters/strippers
  multimeter
  stud finder
  level
  tape measure
  marker
  flashlight
  knockout punch kit
  (if factory knockouts do not meet site requirements)

⚠ **CAUTION:** Install only compatible circuit breakers, conductors, and other accessories. Failure to do so may affect safety and/or product performance.

ⓘ **NOTE:** Personal protective equipment (PPE) should be worn by all persons at the installation site and properly rated for residential applications.

ⓘ **NOTE:** NEMA 3R rated conduit fittings are required for outdoor installations.

ⓘ **NOTE:** For 22kA short-circuit rating, branch breakers must be series-listed with the main breaker in the SPAN Panel. Otherwise, the Panel short-circuit rating is 10kA. See **Appendix A: Circuit Breaker Compatibility** for details.

02 Installation requirements

Internet Connection

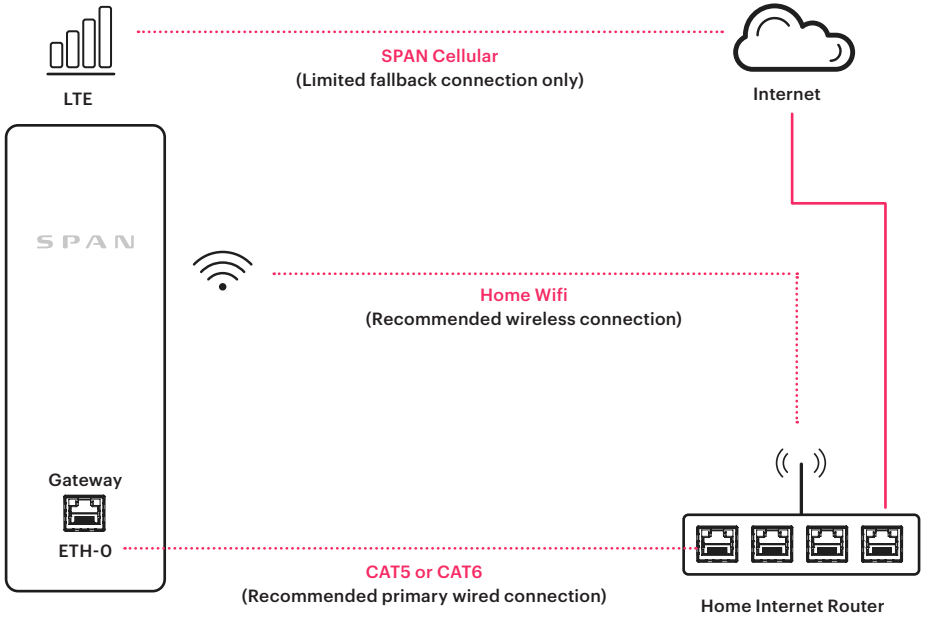
SPAN Panel requires an internet connection to enable monitoring and control features, and to receive the latest software updates.

Be sure to commission the Panel using the SPAN Installer® App to establish communication with SPAN and register the Panel. **Failure to do so may affect product performance and void warranty**.

SPAN recommends hardwiring Ethernet between SPAN Panel and the customer's internet router in addition to using a home network Wi-Fi connection. See **Communication wiring** for details.

Installers are recommended to carry a basic cable tester for field-made Ethernet wiring to ensure a stable connection between SPAN Panel and the internet (or SPAN Panel and select storage systems).

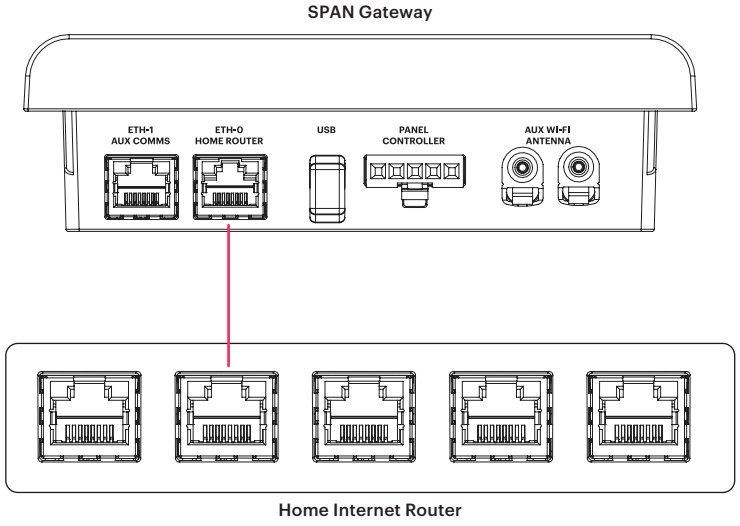
Cellular LTE should only be relied on as a throttled backup internet connection.



If Wi-Fi is the primary connection, test the network connectivity strength at the proposed installation location of SPAN Panel before installing the Panel. Confirm the wireless signal strength is acceptable for a great customer experience.

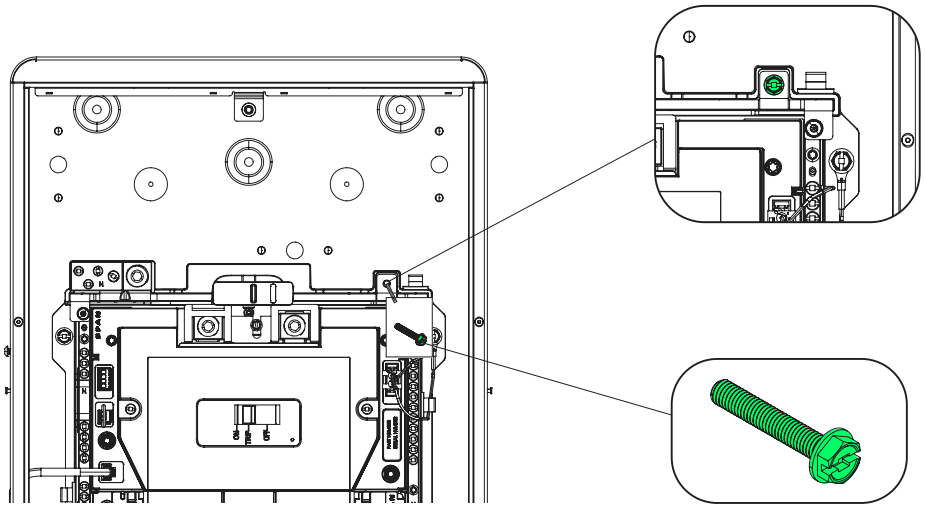
On sites with weak Wi-Fi signal to the SPAN Panel, the following options are available for the Installer and customer:

- Use a dedicated hardwired Ethernet cable to connect the SPAN Panel to the home router.
- Use a Powerline Ethernet Adapter to create an Ethernet connection between the SPAN Panel and the home internet router.
- Upgrade the home Wi-Fi router to a multi-band AC router. Additional non-overlapping access point channels may also be added to improve signal quality. SPAN Panels have low data transmission requirements and will perform better connected to 2.4 GHz bands.



NOTE: Make provisions for dedicated Ethernet run(s) between the home's network access points and the SPAN Panel in new home construction during rough-in. Multiple Ethernet runs may be required for external hardware such as other SPAN Panels or backup storage systems. See **Communications Wiring** for details.

03 Service equipment bonding



The SPAN Panel is suitable for use as service entrance equipment. When used as service equipment, a primary overcurrent protection device for the site is required in the form of an installed main breaker not to exceed 200A.

Verify Neutral-to-Ground bonding

- Install the green main bonding screw using a #2 square / flat head screwdriver or 5/16" Hex socket when the SPAN Panel is used as the main service equipment, torquing to 45 in-lbs (5 N-m).
- **When not used as service equipment, do not install the main bonding screw**.

WARNING: When the SPAN Panel is not installed as service equipment, ensure that the green bonding screw is not fastened to the panelboard, and that Neutral and Ground are properly bonded at the upstream service equipment.

NOTE: When the SPAN Panel is installed as service equipment, ensure the Panel's main breaker is appropriately labeled as "SERVICE / MAIN DISCONNECT" using the label that is provided in the Accessory Box.

04 Gateway tray removal

Remove the Gateway tray for the following installation procedures:

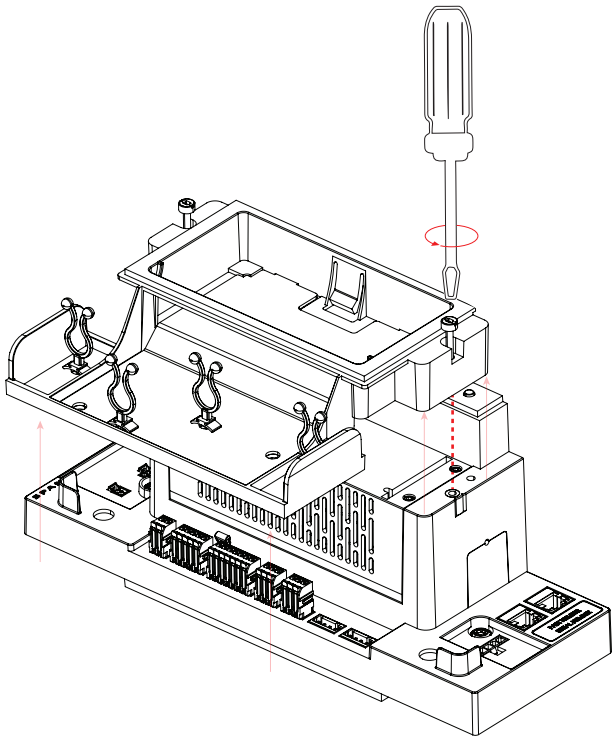
- Picking up and handling the panelboard
- Wiring low voltage communication signal cables
- Wiring Metered Lugs adjacent to the Panel Controller

To remove Gateway tray:

1. Ensure the Gateway and any connected cables are out of the tray, stowed in a secure and accessible location
2. Remove the two (2) Gateway tray screws using a slotted or #2 square drive, and safely stow the Gateway tray in an accessible location.

To re-install Gateway tray:

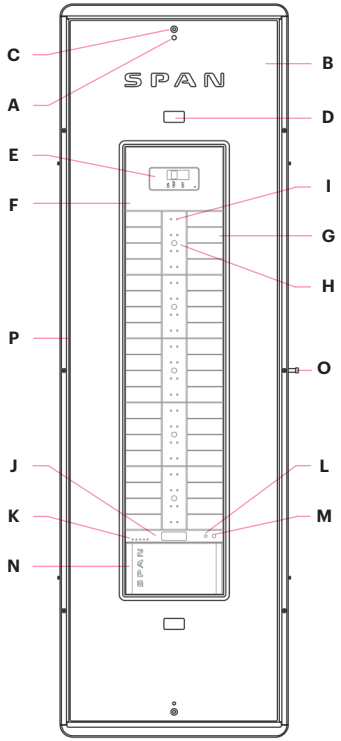
1. Align Gateway tray over Panel Controller and fasten the two (2) slotted/#2 square screws, torquing to 6.6 in-lbs (0.75 N-m).
2. Reconnect all applicable cables back to the Gateway and rock the Gateway back into place on the Gateway tray.



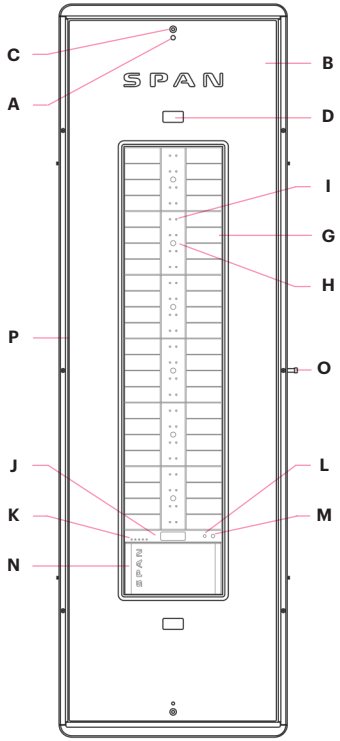
NOTE: Remove the Gateway tray before taking the panelboard out of its packaging, and set it in a secure, accessible location until all SPAN Panel wiring is complete.

05 SPAN Panel parts

SPAN Panel MAIN 40
(MN: PL7R-40MID200-FG)



SPAN Panel MLO 48
(MN: PL7R-48MLO225-FG)



A Door sensor

B Deadfront

C Deadfront mounting screw

D MID Override Slot
(break deadfront plate where
MID Override switch is located)

E Main breaker

F Main +MID

G Branch (8 spaces)

H Branch Deadfront

I Branch LED

J Panel Controller

K Panel Status LEDs

L Reset Button

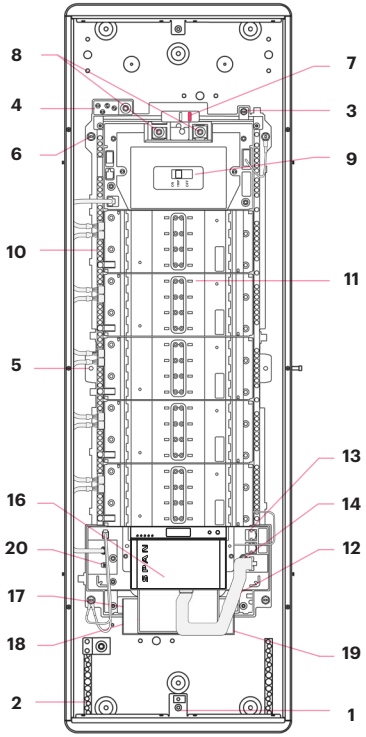
M Configuration Button

N Gateway

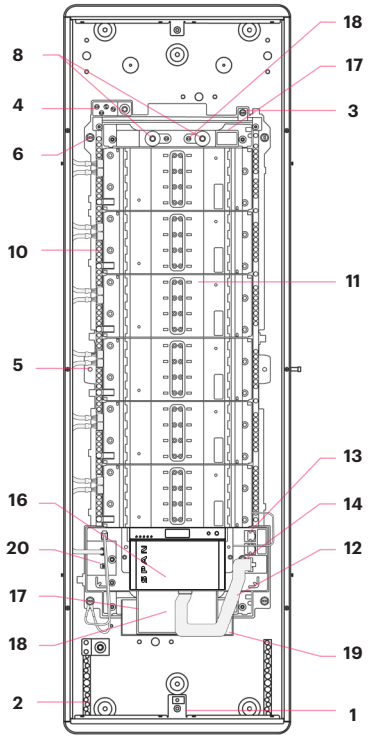
O Locking Hasp

P Enclosure ambient lights

SPAN Panel MAIN 40
(MN: PL7R-40MID200-FG)



SPAN Panel MLO 48
(MN: PL7R-48MLO225-FG)



1 Door Sensor

2 Relocatable groundbars

3 Main bonding screw location
(see **Service equipment bonding**)

4 Neutral terminal block with feeder lug

5 Panelboard alignment pins

6 Panelboard mounting fasteners

7 MID Override (open relay when red is center)

8 Feeder Lugs

9 Main Breaker (only on MAIN 40)

10 Neutral Busbars

11 Branch stabs

12 Gateway cable

13 SPAN LINK™ for multipanel connection

14 Gateway tray mounting locations

16 Gateway connection ports
(see **Gateway** diagram for details)

17 Metered Lugs

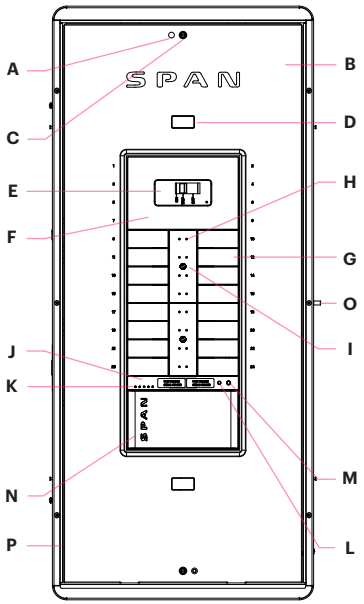
18 Surge Protection Device (SPD) attachment lugs

19 Gateway Tray

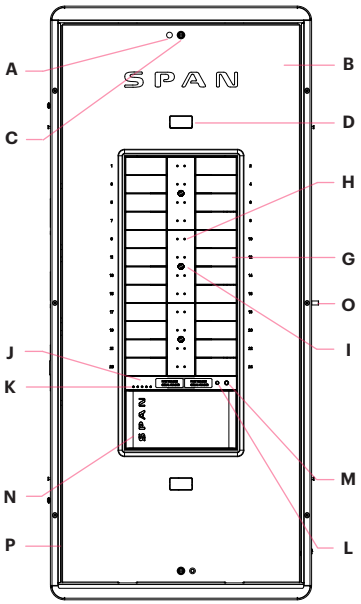
20 Enclosure ambient lights port

05 SPAN Panel parts

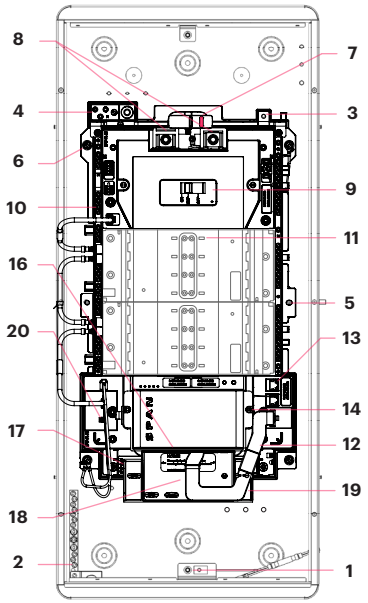
SPAN Panel MAIN 16
(MN: PL4R-16MID200-FG)



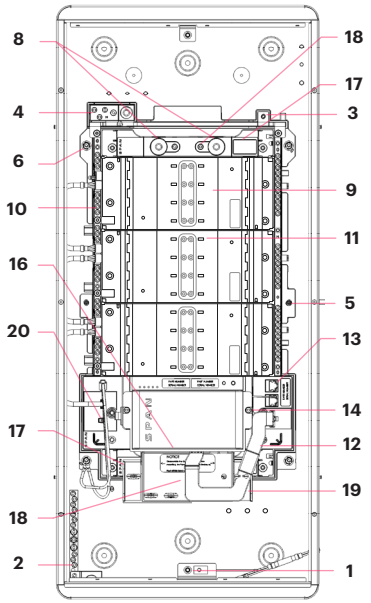
SPAN Panel MLO 24
(MN: PL4R-24MLO225-FG)



SPAN Panel MAIN 16
(MN: PL4R-16MID200-FG)



SPAN Panel MLO 24
(MN: PL4R-24MLO225-FG)



A Door sensor

B Deadfront

C Deadfront mounting screw

D MID Override Slot
(break deadfront plate where MID Override switch is located)

E Main breaker

F Main +MID

G Branch (8 spaces)

H Branch Deadfront

I Branch LED

J Panel Controller

K Panel Status LEDs

L Reset Button

M Configuration Button

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O Locking Hasp

P Enclosure ambient lights

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3 Main bonding screw location
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14 Gateway tray mounting locations

16 Gateway connection ports
(see **Gateway** diagram for details)

17 Metered Lugs

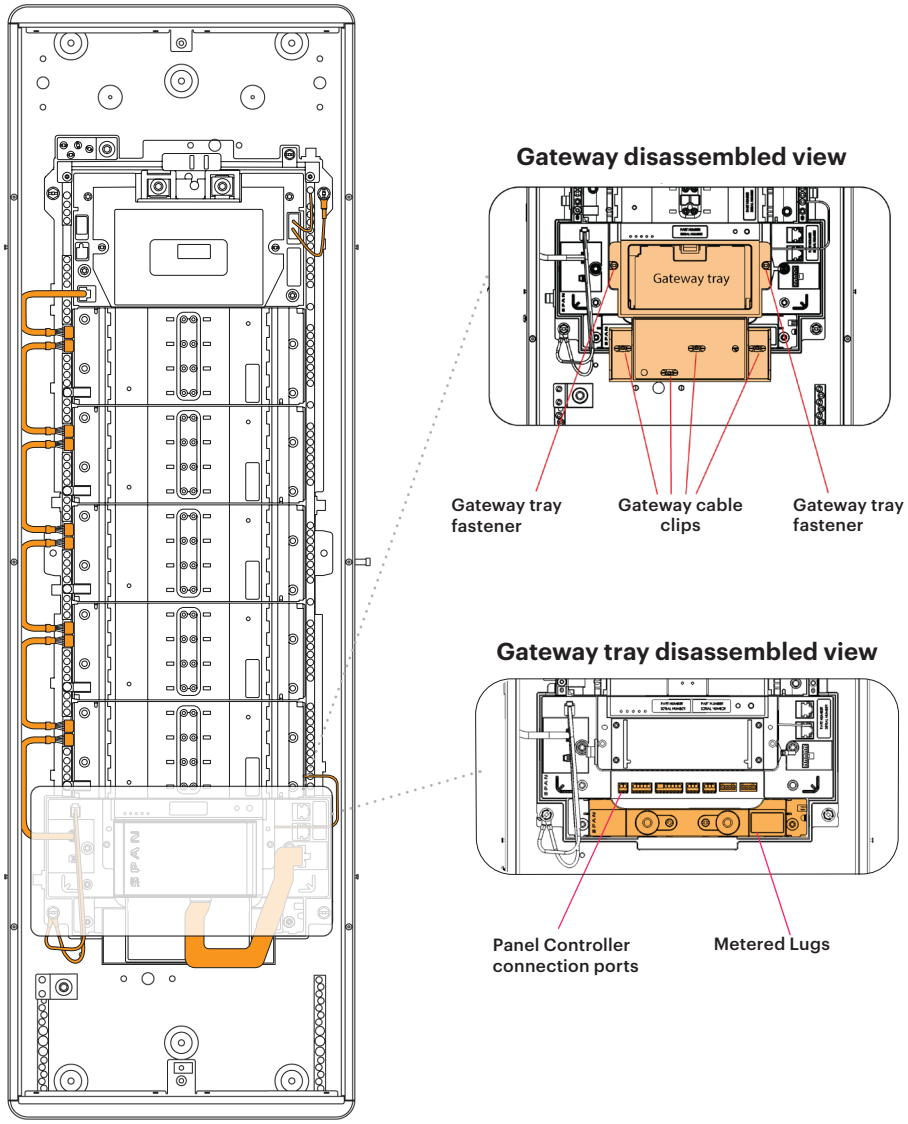
18 Surge Protection Device (SPD) attachment lugs

19 Gateway Tray

20 Enclosure ambient lights port

05 SPAN Panel parts

Terminations for Panel Controller low voltage wiring and Metered Lugs are exposed by removing the Gateway and Gateway tray. Use the Gateway tray cable clips to secure low voltage communication cables, adding separation from line conductors.



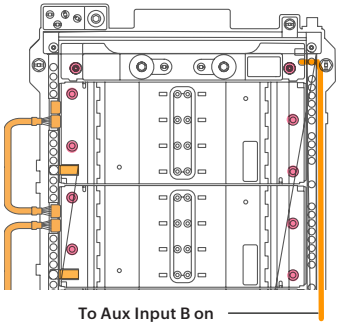
Gateway disassembled view

Gateway tray disassembled view

NOTE: Factory installed low voltage cables are Listed and 300V rated, evaluated as part of the Panel Listing and are suitable for use adjacent to line voltage conductors.

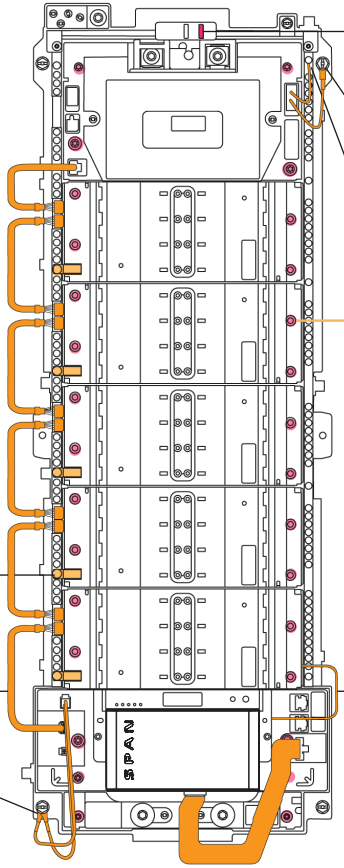
SPAN Panel comes with factory installed cable jumpers and fasteners that must be validated before energizing the Panel. Bolted joints (red circles) are torqued down using T30 Torx driver to 71 in-lbs (8 N-m). Do not attempt to service or perform maintenance on this Panel without completely shutting off all power sources.

Panel MLO 24 / 48



Panel MAIN 16 / 40

(MAIN 40 depicted)



Panelboard Accessory bolted joints

WARNING: Risk of electrical shock when Panel is energized.

CAUTION: Tighten to 71 in-lbs (8 N-m) using a T30 Torx drive for safe operation. Do not use an impact driver.

Removal will impair product operation. Only remove for service purposes.

WARNING: Risk of electrical shock. Ensure all electrical joints are torqued per markings on Panel and this document before energizing the Panel. See page 33 for main breaker to busbar joint specifications.

CAUTION: SPAN Panels come with factory installed cable jumpers and fasteners. Do not modify or remove any connections unless directed as per Tech Portal Troubleshooting guides or SPAN Support.

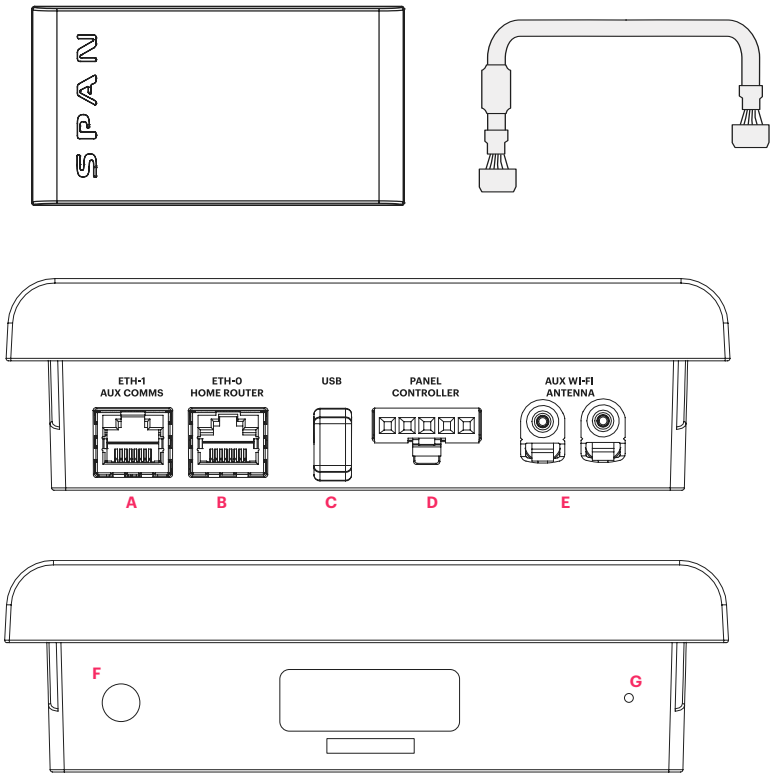
CAUTION: Only install SPAN Panelboard Accessories within a compatible SPAN Panel enclosure.

NOTE: Every SPAN Panel must have a Panel Controller communicating with a Gateway.

06 Panelboard Accessories

Gateway

Gateway Box contents include a SPAN Gateway and Gateway cable that connects to the Panel Controller.



A Communication to battery storage systems

B Communication to home router

C USB

D SPAN Gateway to Panel Controller

E External WiFi antenna port

F User Action Button

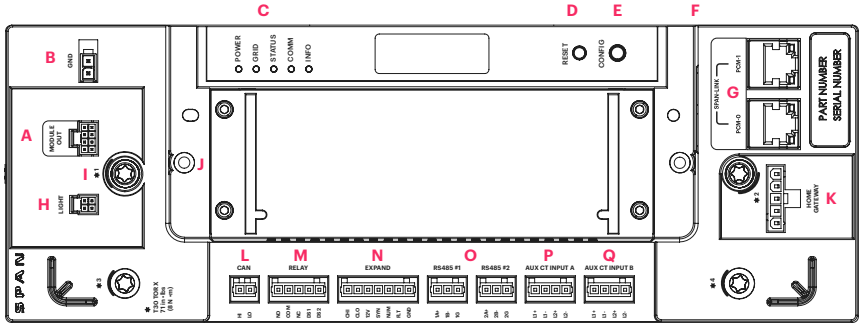
G Gateway Status LED

KEY
* = factory installed
grey text = future

NOTE: Make provisions for dedicated Ethernet run(s) between the home's network access points and the SPAN Panel in new home construction during rough-in. Multiple Ethernet runs may be required for external hardware such as other SPAN Panels or backup storage systems. See **Communications wiring** for details.

Panel Controller

The Panel Controller exists in every SPAN Panel MAIN 40 and MLO 48. Remove the Gateway tray to expose low voltage connection terminals on the Panel Controller.



A
Panelboard accessory CAN signaling port *

B
Panel Controller ground reference *

C
Panel Controller Status LEDs

D
Reset button

E
Configuration button

F
Panel Controller neutral jumper *

G
SPAN Link RJ45 to other SPAN Panels

H
Enclosure ambient lights power connection

I
Panelboard accessory busbar bolted joint *

J
Gateway tray mounting location

K
Panel Controller to SPAN Gateway

L
CAN

M
External dry contact signaling

N
3rd Party product integration

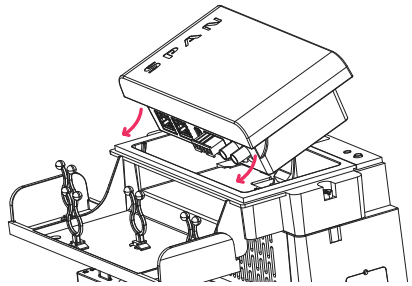
O
RS-485

P
SPAN Metered Lug CT Input A *

Q
SPAN Metered Lug CT Input B *

KEY
* = factory installed | grey text = future

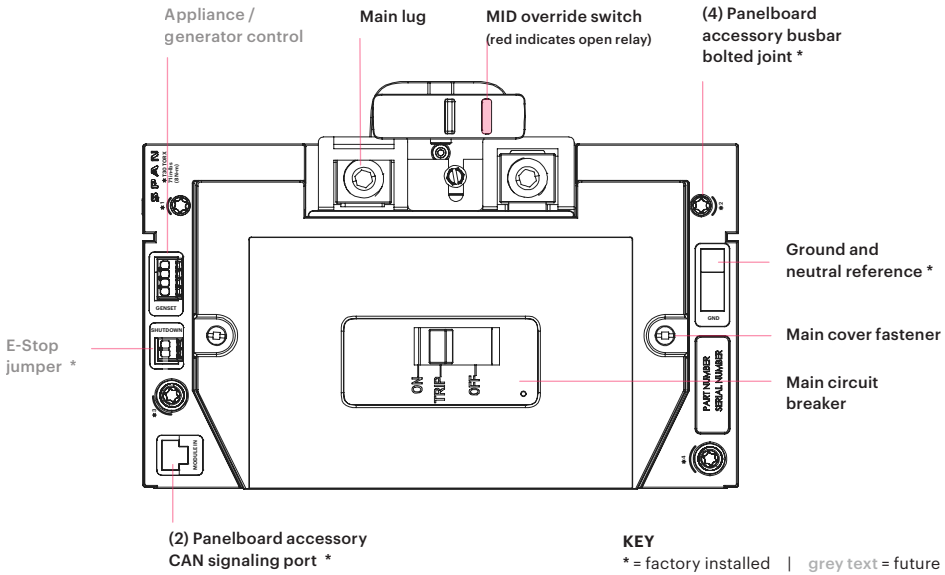
The Gateway is secured into and released from the Gateway tray through a rocking motion. Listen for a click when the Gateway tray clip engages with the Gateway notch.



06 Panelboard Accessories

Mains +MID Panelboard Accessory

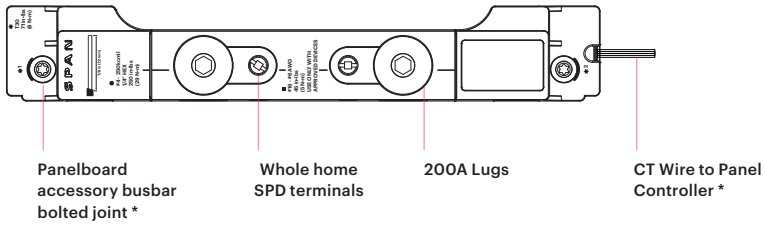
The Main cover may be removed to expose a factory installed 200A Main Circuit Breaker (MCB) rated up to 200A. To swap the MCB, see **Installing Breakers**. The Mains +MID is only available on SPAN Panel MAIN models.



KEY
* = factory installed | grey text = future

Metered Lugs

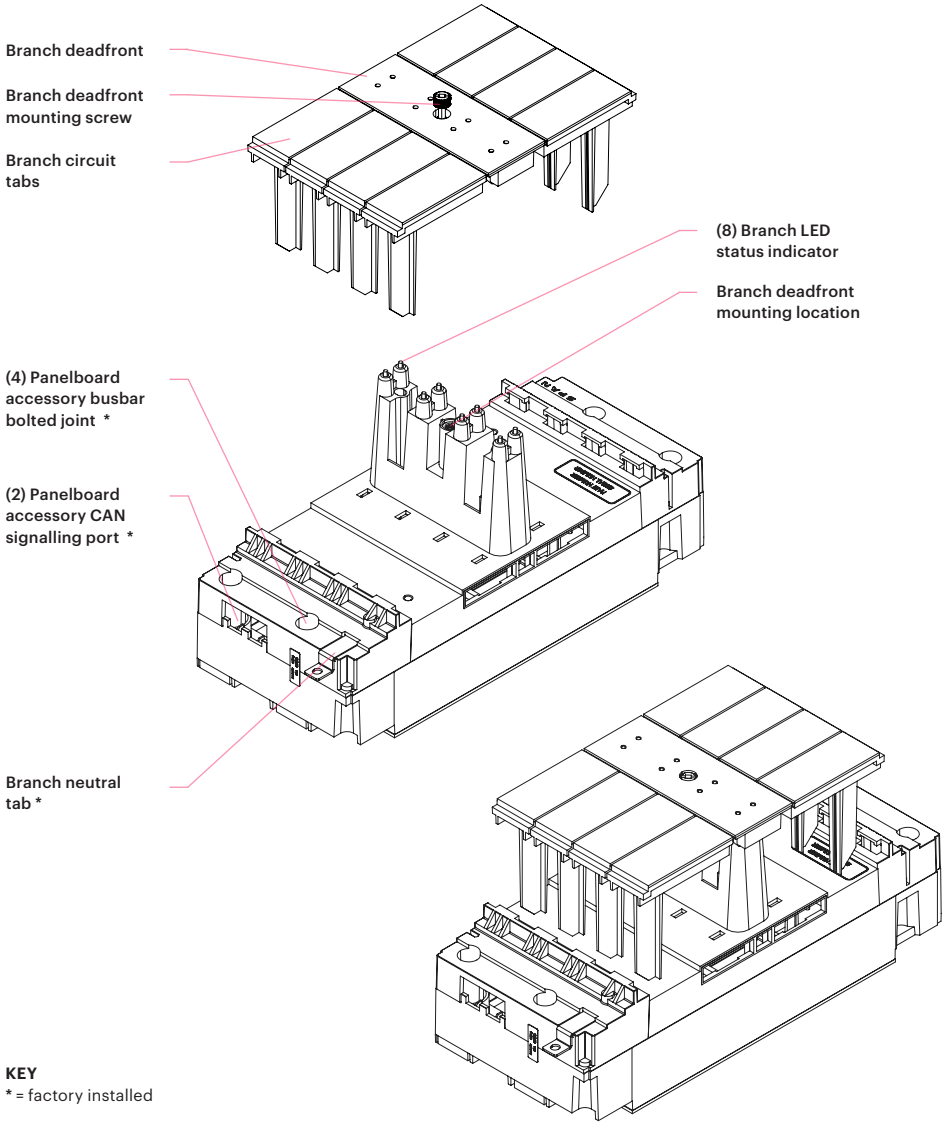
Metered Lugs Panelboard Accessories allow up to 200A of feeder connection. SPAN Panel MAIN models are factory-installed with one (1) Metered Lugs Panelboard Accessory, whereas SPAN MLO models have two (2) Metered Lugs Panelboard Accessories. CT wiring from Metered Lugs are factory-connected to the Panel Controller.



KEY
* = factory installed

Branch

Every single pole on the Branch Panelboard Accessory is rated up to 100A. Each Branch has its own removable modular deadfront. Identify the usable branch circuits and only snap off the deadfront tabs as needed, and reinstall the deadfront. Only snap off Branch circuit tabs on spaces occupied by circuit breakers. The Branch deadfront also acts as a breaker hold-down.



KEY
* = factory installed

01 Choosing install location

Electrical, mechanical, and environmental requirements

The SPAN Panel is intended to be wall-mounted between studs (2x4" or equivalent) with 16" on-center spacing, using the six (6) available mounting points.

Verify that the wall construction is adequate to support the weight of the Panel. The installation should conform to applicable building codes. Consult a structural engineer and local standards for local mounting requirements.

Best practice is to install the SPAN Panel out of direct sunlight, especially in hot climates, and on exterior south and west facing walls.

Specification	SPAN Panels (PL4R- and PL7R-)
Site electrical service	120/240 or 208Y/120 VAC, 60 Hz
Service feed	200A maximum
Internal bussing	225A maximum
Overcurrent Protection (main breaker)	100-200A
Location	Indoor or outdoor
Max elevation	9842 ft (3000 m)
Ambient temperature	–22°F to 122°F (–30°C to 50°C)

CAUTION: SPAN Panels installed above 6561 ft (2000 m) must be installed in ambient temperatures less than 104°F (40°C).

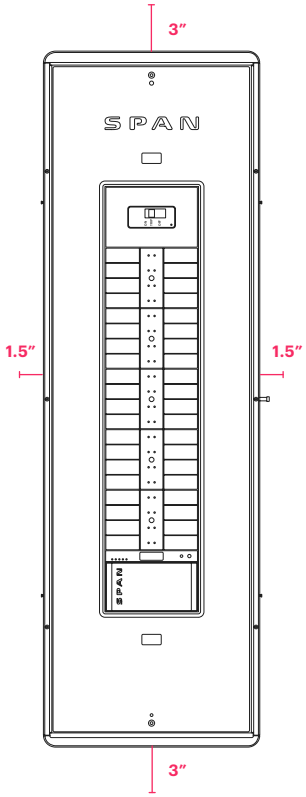
CAUTION: SPAN Panel is rated NEMA 3R only when installed with enclosure knockouts at the bottom of the Panel.

CAUTION: Follow all local codes and standards when planning for and installing the SPAN Panel.

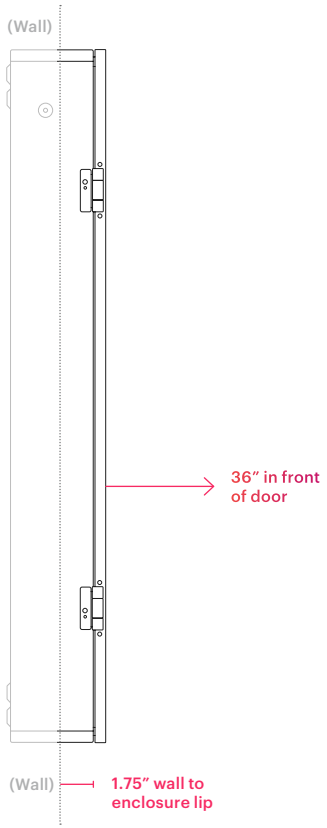
CAUTION: Do not exceed SPAN Panel capacity. Ensure that the installation conforms to applicable code, and that appropriate overcurrent protection is in place.

NOTE: Verify that the site mechanical, electrical, and clearance requirements outlined in this document and the product datasheet are compatible at the planned installation location.

Lateral Clearances



Front Clearances



Panel installation must comply with local building codes and standards.

Do not mount objects on the wall within the minimum required clearances indicated above, with the exception of items required by the installation, such as electrical conduit or junction boxes.

Do not install the SPAN Panel in a location or place any objects near it that would prevent its door from opening to 90°, or that would restrict access to the Panel.

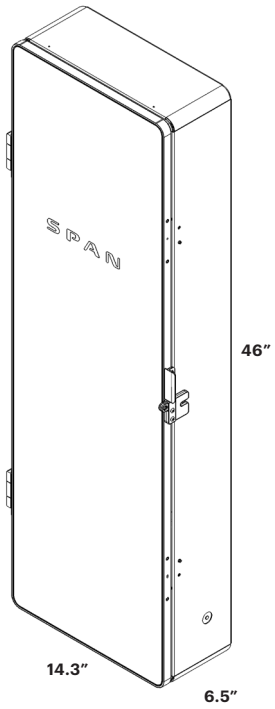
Do not recess the SPAN Panel beyond the door hinges. The Panel enclosure lip must extend at least 1.75" from the surface of the finished wall

NOTE: The door may be configured to open from either direction. Ensure Panel door can swing open to 90° (minimum) per NEC.

01 Choosing install location

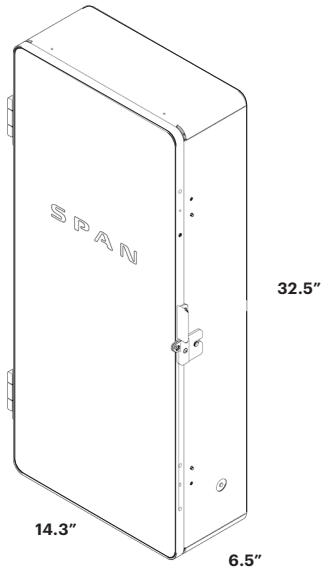
Dimensions and Weight

MAIN 40 / MLO 48
Enclosure Dimmensions



Specification	SPAN Panel MAIN 40	SPAN Panel MLO 48
Enclosure dimensions	363.2 x 1168.4 x 170.2 mm (14.3 x 46 x 6.5 inch)	
Maximum height above grade (measured from bottom of Panel)	1.1 m 43 inches	1.1 m 42 inches
Weight (enclosure no door or deadfront) (panelboard)	109 lb (49.5 kg) 25 lb (11.3 kg) 41 lb (18.6 kg)	107 lb (48.6 kg) 25 lb (11.3 kg) 39 lb (17.7 kg)

MAIN 16 / MLO 24
Enclosure Dimmensions



Specification	SPAN Panel MAIN 16	SPAN Panel MLO 24
Enclosure dimensions	363.2 x 525.5 x 165.1 mm (14.3 x 32.5 x 6.5 inch)	
Maximum height above grade (measured from bottom of Panel)	1.4 m 55 inches	1.4 m 54 inches
Weight (enclosure no door or deadfront) (panelboard)	55 lb (25.1 kg) 19 lb (8.8 kg) 21 lb (9.7 kg)	53 lb (24.2 kg) 19 lb (8.8 kg) 19 lb (8.8 kg)

02 Mounting the Panel

A

Retrieve the enclosure and panelboard

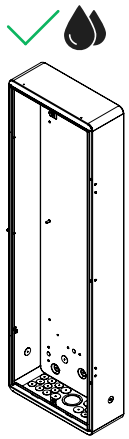
Carefully set aside the panelboard, Gateway, and Accessories box in an accessible and secure location. Fix the SPAN Panel enclosure with pre-installed ground bars to the wall separately from the panelboard.

B

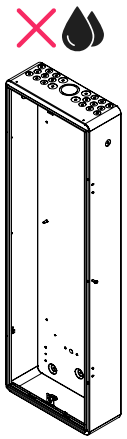
Orient the enclosure

The SPAN Panel enclosure may be installed with knockouts on the top, or rotated upside down to have knockouts at the bottom. Enclosure knockouts must be at the bottom of the Panel in order to maintain its NEMA 3R rating.

Knockouts on bottom
(required for wet environments)



Knockouts on top



C

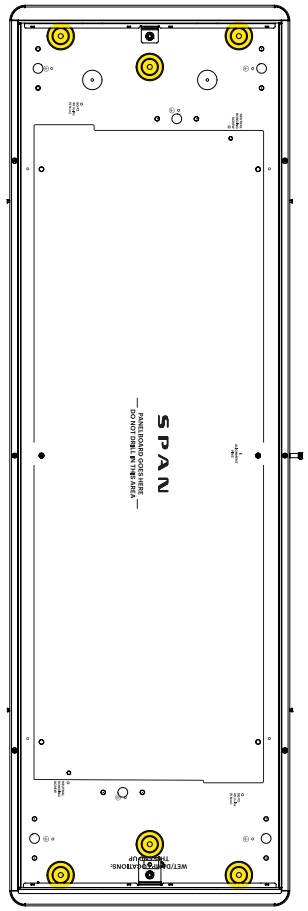
Mount the enclosure

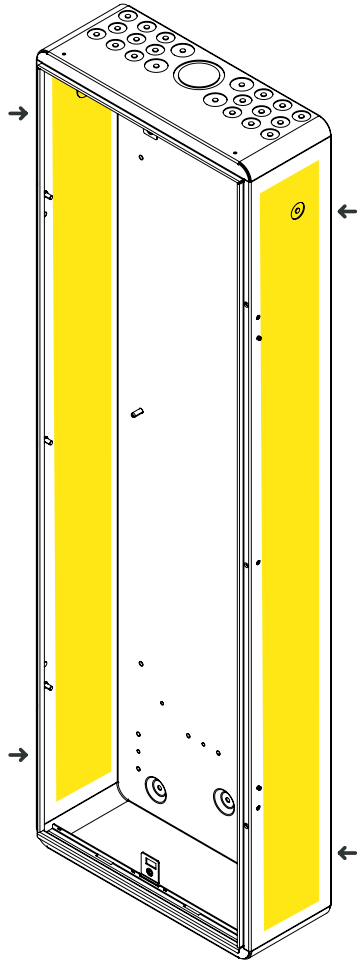
The provided cardboard drill template can be used for surface wall mount leveling and alignment. Using a drill and level, mount the SPAN Panel enclosure vertically on the wall. There are six (6) mounting points available for use.

When semi-flush mounting, drill 1/4" pilot holes on the sides of the Panel enclosure. Install fasteners through the sidewalls to secure the Panel to the studs (yellow highlighted area). Ensure the wall space can accommodate the flush section without interference from pipes or conductors inside the wall space.

To protect the Panel enclosure from dust and debris in new construction installations, insert the cardboard drill template on the face of the enclosure and tape around the edges.

Panel Mounting Locations
Front and Side views





CAUTION: Carefully review site and technical requirements before commencing installation. Comply with all applicable local codes and standards

CAUTION: When installing outdoors or in a wet/damp environment, the enclosure must be installed with the knockouts at the bottom of the Panel.

WARNING: Risk of electric shock. If you are replacing an existing electrical panel, make sure power source(s) to the panel are turned off before removing the old panel, and when installing the SPAN Panel. Always make sure all electrical equipment is safely de-energized before beginning work.

CAUTION: The SPAN Panel must be installed upright, within 10 degrees of perpendicular from grade.

CAUTION: Do not orient enclosure knockouts at the top of the Panel when installing outdoors or in a wet/damp environment. Installing the SPAN Panel enclosure with knockouts at the top violates the NEMA 3R rating.

NOTE: Verify the wall's fire rating prior to mounting. Surface mount the SPAN Panel to comply with local building and fire codes where applicable.

02 Mounting the Panel

D

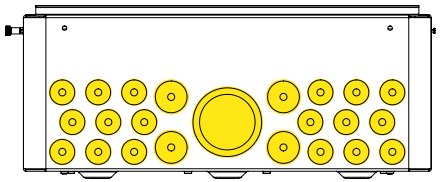
Install conduit

The SPAN Panel allows conduit entry through the top, bottom, lower sides, and rear section at specific locations of the enclosure. See highlighted areas to the right.

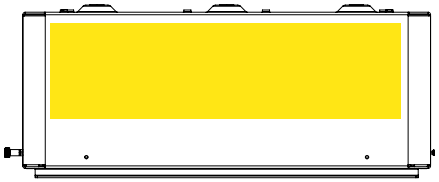
Limit side entry hole punches below 1" diameter and conductor wires to a maximum of 10 AWG along the length of the panelboard, as per outline inside the enclosure.

Before making any conduit or cable penetrations, plan conduit routes, and corresponding knockout locations and sizes on the enclosure.

Be sure to allow adequate clearance for conduit routing and anchoring. Conduit installation must comply with applicable fill limits and electrical codes.

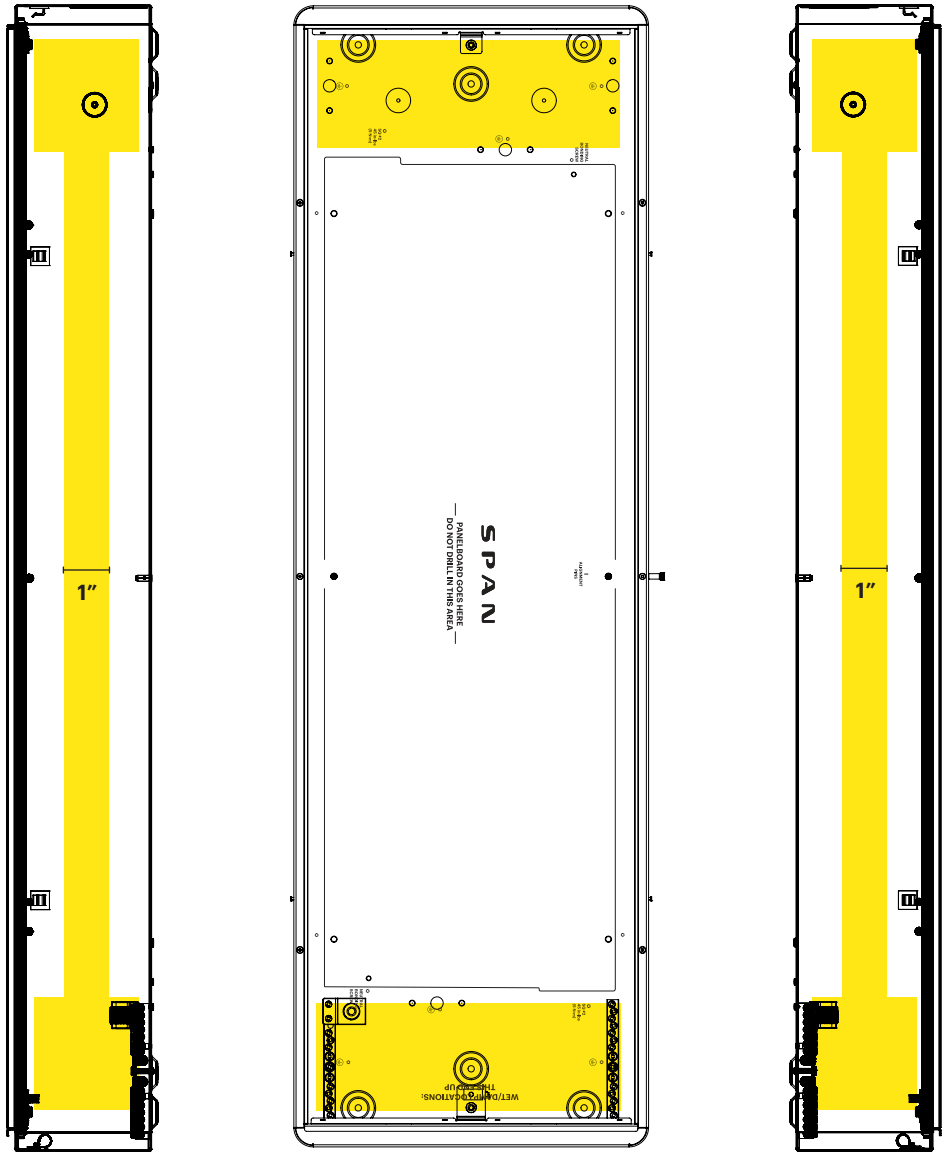


Enclosure Knockouts
(4) 3/4" knockouts
(18) 1/2" knockouts
(1) Concentric 1.5", 2" knockout



Conduit Entry Points
Top/Bottom View

Conduit Entry Locations
Right, Front, and Left Side Views



CAUTION: Do not punch holes in any location on the enclosure that would allow moisture to enter the unit.

CAUTION: Note the locations of ground bars and wires inside the Panel before cutting. Do not damage factory installed enclosure parts and wiring. Max drill size in this region is 1".

CAUTION: Follow guidance in NEC Chapter 3 and any local AHJ requirements for cable type selection. Consider exterior surface- and flush-mounted installations as wet/damp conditions, and use proper wiring methods. When installed in wet/damp locations, conductors routed through the bottom face must be wet- or damp-rated.

NOTE: Ensure that any metal shards do not come into contact with panelboard parts that could be energized. Ensure panelboard is removed or shielded before drilling into the enclosure.

NOTE: Use care when drilling, and confirm that fittings are the correct size and rated for the correct installation environment for the installation location before proceeding.

02 Mounting the Panel

E

Orient the panelboard

SPAN Panel MAIN 16 and MAIN 40 panelboards may be installed in two positions depending on entry location of feeders.

SPAN Panel MLO 24 and MLO 48 are factory installed with Metered Lugs at both the top and bottom of the Panel for convenient feeder or Feed-Through termination. The panelboard must be installed upright, with the Panel Controller located in the lower half of the Panel.

SPAN Panel rotatable parts

On SPAN Panel MAIN 16 and MAIN 40:

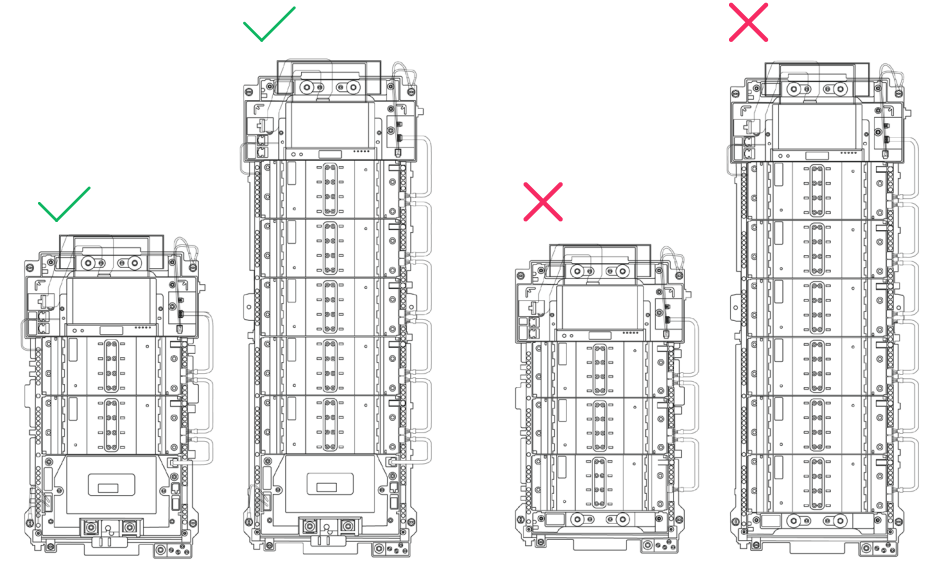
- Panelboard.
- Enclosure, subject to wet/damp environment restrictions.

On SPAN Panel MLO 24 and MLO 48:

- Enclosure, subject to wet/damp environment restrictions.

Only Panel MAIN models may be rotated

Panel MLO models cannot be rotated



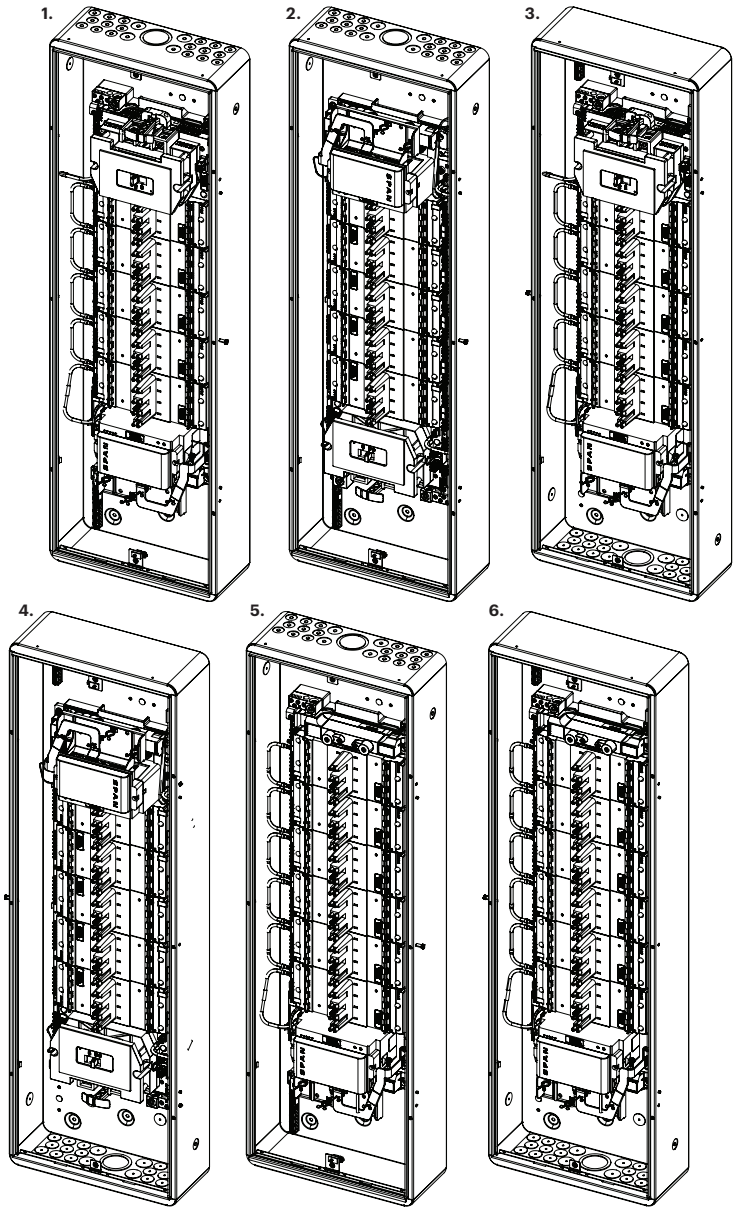
Panel MAIN 16 **Panel MAIN 40** **Panel MLO 24** **Panel MLO 48**

CAUTION: Do not rotate the panelboard in SPAN Panel MLO 24 or 48 models. The Panel Controller in SPAN Panel MLO models must be installed in the lower half of the Panel.

NOTE: Locations and positions of individual Panelboard Accessories on the panelboard rotate together on SPAN Panel MAIN 16 and 40 models.

Supported enclosure and panelboard combinations

Panel MAIN models (1-4), Panel MLO models (5-6)



02 Mounting the Panel

F

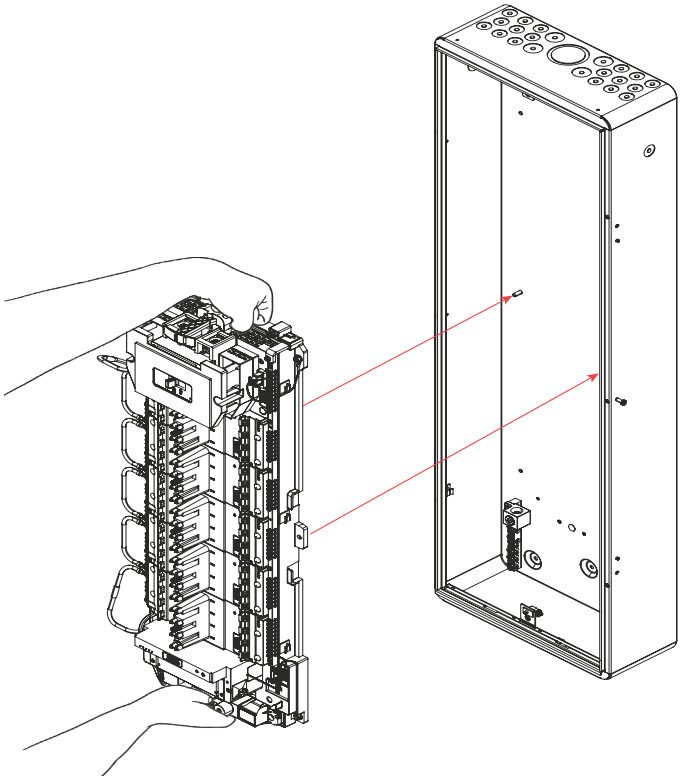
Mount the panelboard

STEP 1

Ensure the Gateway tray is removed before handling the panelboard. Avoid lifting by MID override switch. Use the handles at the top and bottom of the panelboard. See Gateway tray removal.

STEP 2

- Align the panelboard to the enclosure using the alignment pin studs on the enclosure.
- Using a 5/16” hex socket/#2 square/ slotted screwdriver, fasten the panelboard at all four (4) mounting points to secure the panelboard on the enclosure, torquing to 5 Nm.



CAUTION: The panelboard must be secured at the designated fastener locations on the enclosure to provide proper electronics grounding

NOTE: Mount the panelboard to the enclosure only after all enclosure hole punches are complete. SPAN recommends pulling feeders and home runs into the enclosure cavity before securing panelboard to enclosure.

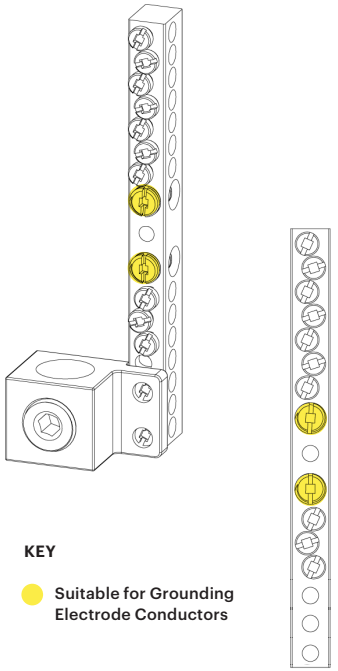
G

Choose ground bar locations

Each ground bar may be field-installed to function at any of the designated ground bar locations.

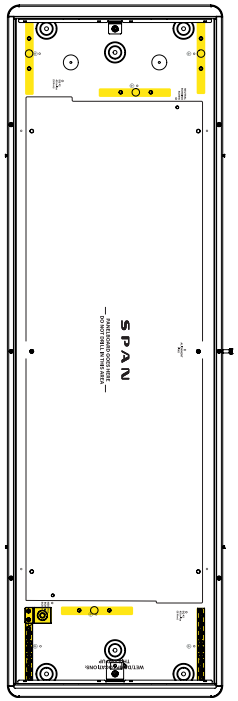
A maximum of two (2) 12-14 AWG ground conductors may be installed in each of the smaller ground bar terminals.

Install only SPAN approved ground bars in the SPAN Panel. Contact SPAN or an Authorized Stocking Distributor for additional add-on ground bars if necessary.

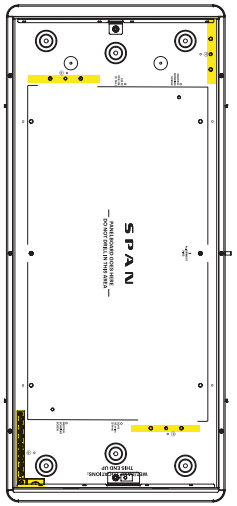


KEY

Suitable for Grounding Electrode Conductors



Panel MAIN 40 & Panel MLO 48



Panel MAIN 16 & Panel MLO 24

03 Installing breakers

Specifications

- SPAN Panels that have a Main +MID Panelboard Accessory accept a main breaker between 100A and 200A as identified below.
- Each Branch Panelboard Accessory in the SPAN Panel supports up to 8 single pole branch circuits. 2-pole breakers may be installed on Branch Panelboard Accessories that are adjacent to one another.
- The maximum rating of each single pole branch circuit is 100A.

Breakers Listed for Use

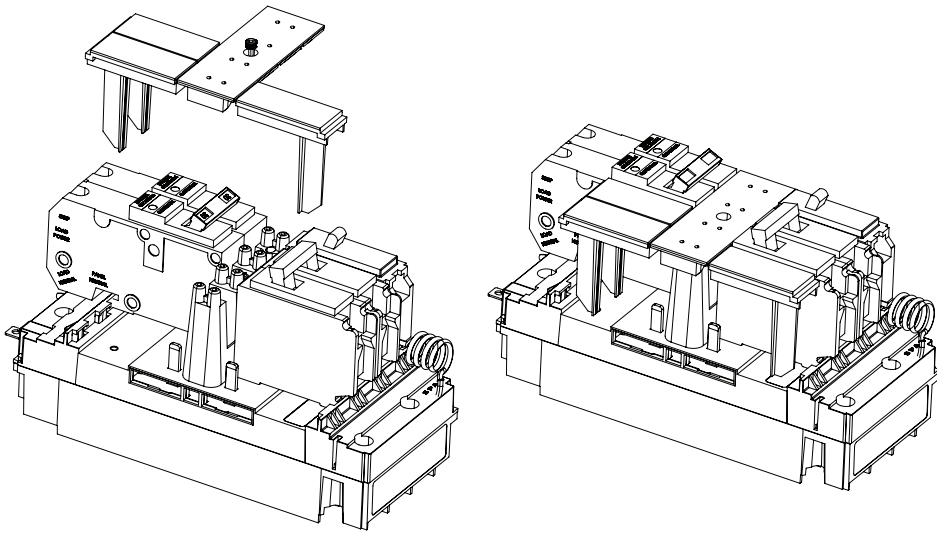
- Use only listed breakers with the SPAN Panel.
- SPAN Main Panelboard Accessories are listed to use with both the SPAN 200A and Eaton CSR type main breakers.
- SPAN Branch Panelboard Accessories are multi-listed for use with 1" (2.54 cm) standard, tandem, AFCI, and GFCI branch circuit breakers from Siemens, Eaton, Square D, and GE/ABB types.
- See **Appendix A: Circuit breaker compatibility** for complete details on breaker compatibility and Short-Circuit Current Rating (SCCR).

Installing a branch breaker

1. Remove the branch deadfront by using a #2 square or slotted screwdriver. Snap off branch filler plates to match locations of circuit breakers. Set the modular deadfront in a secure and accessible location.
2. Install each branch breaker by engaging the heel clips then rocking it onto the busbar stab. Ensure each breaker is firmly in place.
3. Install each Branch deadfront over breaker edges using a #2 square or slotted screwdriver, torquing to 4.4 lb-in (0.5 N-m). Ensure alignment across the modular deadfront and Branch LEDs.

Do not use off-the-shelf 1" breaker filler plates to cover any exposed busbar stab on Branch Panelboard Accessory.

Contact SPAN for additional Branch deadfronts if necessary.



CAUTION: Do not remove or modify any factory-installed fasteners or cables unless directed as per this manual. Improper connections on factory-installed fasteners or cables may lead to Panel malfunction and damage. Such damage is not covered under the SPAN Panel Limited Warranty.

CAUTION: SPAN recommends the use of new circuit breakers in the SPAN Panel. Used circuit breakers may have wear or damage invisible to the installer that could cause failures during normal operation, such as a failure to safely interrupt a circuit under overload, or damage to the SPAN Panel. Such damage is not covered under the SPAN Panel Limited Warranty.

CAUTION: Install only listed and labeled circuit breakers compatible with the SPAN Panel. Branch circuits must not exceed the load limits specified below.

CAUTION: Use only appropriately sized, compatible circuit breakers according to the type of load. Ensure breaker selection is in accordance with NEC, CEC, and local code articles for any field modifications. Additional or replacement breakers should be of the same manufacturer, type designation, and equal or greater interrupting rating.

NOTE: SPAN Panels are not compatible with any plug-on neutral style branch circuit breakers. When AFCI/GFCI branch breakers are required, a pigtail neutral breaker style must be installed with the neutral pigtail wire connected to the Panel's neutral wiring terminal bar.

NOTE: SPAN Branch deadfronts are designed to hold down branch breakers. Always remove modular deadfronts before replacing a breaker. Do not forcibly pull branch breakers off the Branch Panelboard Accessory.

03 Installing breakers

Installing a main breaker

The SPAN Panel must have a main breaker where there is a Main Panelboard Accessory in the panelboard. A 200A SPAN main breaker (MN: P-0MB2100-3-0) is factory-installed with every Main Panelboard Accessory. Where a different main breaker is required, the main breaker may be field-installed according to this manual.

Main breakers listed for use:

Main circuit breaker rating	Identification Numbers
100A	Eaton CSR2100
125A	Eaton CSR2125N
150A	Eaton CSR2150N
175A	Eaton CSR2175N
200A	Eaton CSR2200N
200A	SPAN P-0MB2200-3-0

To remove:

1. Remove the Main Panelboard Accessory cover by using a #2 square screwdriver to remove two (2) fastening screws
2. Remove the two (2) L1/L2 fastening nuts using a 7/16" hex socket, and safely stow the two (2) nuts and (4) washers.
3. Remove the slotted hex head fastening screw using a flat bit.
4. Pull the main breaker out of the Main Panelboard Accessory.

To install:

1. Insert the main breaker as shown to the right.
2. Install the (1) slotted hex head fastening screw, torquing to 6.6 in-lbs (0.75 N-m).
3. Install one (1) fastening nut and two (2) washers on each L1/L2 thread bolt, using a 7/16" hex socket torquing to 53.1 in-lbs (6 N-m) each. See image to the right.
4. Ensure the washer stack is has flush edges, darker washer on top with cup facing down. No gap should be visible between the two washers.

CAUTION: Do not remove or modify factory-installed jumper cables and fasteners unless following specific instructions in this manual. Improper connections on factory-installed fasteners or cables may lead to Panel malfunction and damage. Such damage is not covered under the SPAN Panel Limited Warranty.

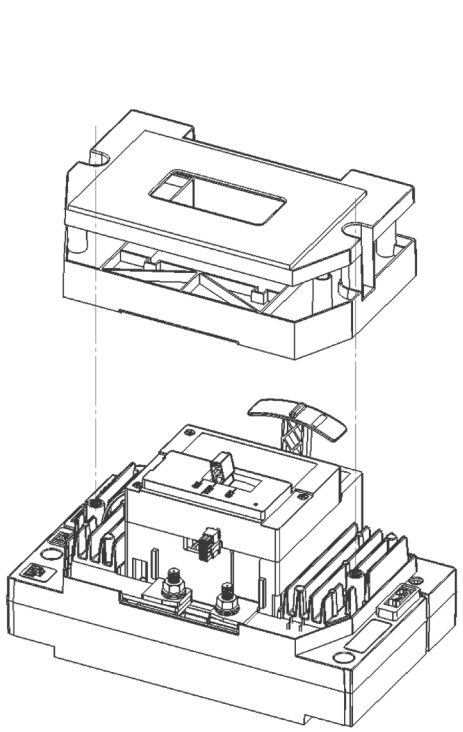
CAUTION: Maximum current rating of the main breaker is 200A. Bussing is rated to 225A.

NOTE: Use a torque tool to avoid over-torquing the main breaker fasteners.

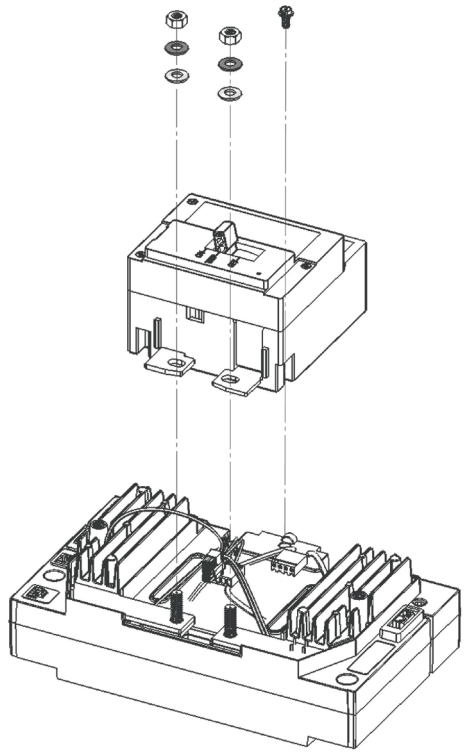
NOTE: Main breaker installation only applicable to SPAN Panel MAIN 16 & 40 models.

Main breaker assembly

Always validate main breaker fastening nuts torque before energizing the Panel.

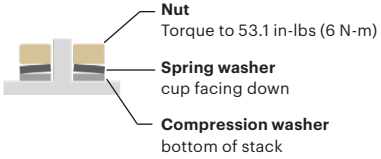


Remove cover
(2) Slotted square screw, torque to 6.6 in-lbs (0.75 N-m).



Validate main breaker fasteners
- (1) Slotted hex screw, torque to 6.6 in-lbs (0.75 N-m)
- (2) Main breaker to busbar joint connections

Main breaker to busbar joint stack
Section view

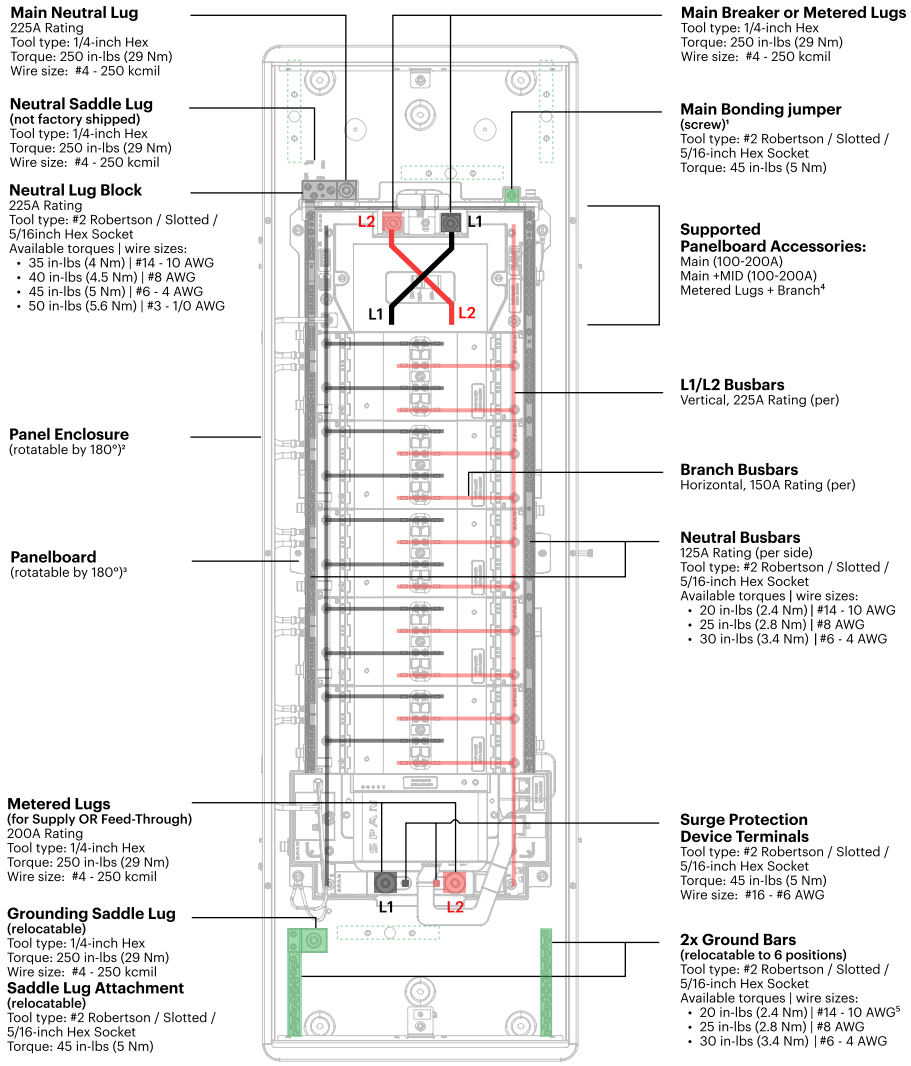


WARNING: Risk of electrical shock. Main breaker fastenening nuts must be validated and torqued to specification before energizing the Panel.

04 Wiring the Panel

Size all conductors with reference to the overcurrent protection device, ampacity, and voltage drop requirements in accordance with all local electrical codes and standards.

- Use conductors rated to a minimum of 75°C.
- Supply-side Line 1 and Line 2 conductors may connect to:
  - Main breaker terminals when a Main Panelboard Accessory is in the panelboard. Supply limited to 200A max.
  - Metered Lugs when there is no Main Panelboard Accessory. Supply limited to upstream overcurrent protection device rating.
- Connect supply neutral and ground conductors to their respective lugs and terminal blocks. The grounding saddle lug may be repurposed as a neutral saddle lug where applicable.
- Refer to the next page for suitable conductor gauges and torque requirements.
- Distribute continuous loads throughout the SPAN Panel. Do not load each Branch Panelboard Accessory more than 150A continuous.
- Connect up to a maximum of 200A for feed-through connections on SPAN Metered Lugs.
- Only direct connect compatible whole-home surge protection devices (SPD) onto Metered Lugs terminals.



1. Install main bonding screw only when SPAN Panel is the main service equipment.
2. Factory-made knockouts on enclosure must be on the bottom in wet/damp environments.
3. Panelboard in Panel MLO 24 and MLO 48 cannot be rotated.
4. L1/L2 do not cross when Main Breaker is not installed.
5. Each ground bar terminal is rated for 2x #14 or #12 AWG wires.

WARNING: Improper torque on critical joints may lead to equipment damage and electrical hazard. Validate torque on all Panelboard Accessory bolted joints and applicable electrical joints before energizing SPAN Panel. See page 13 for locations of bolted joints and page 33 for main breaker fastening nuts where applicable.

NOTE: Add-on neutral saddle lugs may only attach to the large neutral terminals or relocatable ground bars.

NOTE: Terminals integral to the SPAN Panel are suitable for 60/75ºC AL/CU wire. Refer to circuit breaker markings for breaker terminals' temperature rating.

NOTE: Designated ground bar locations differ on SPAN Panel MAIN 16 and MLO 24 from diagram above. Refer to markings on enclosure for acceptable ground bar mounting locations.

04 Wiring the Panel

Wiring Metered Lugs

Ensure the Gateway tray is removed before making any feed-through connections on the Metered Lugs. See Gateway tray removal for details.

Without removing the Metered Lugs cover, insert L1 and L2 feed-through cables through the Metered Lugs dedicated for 200 A. Install L1 and L2 cables using a Hex driver, torquing to 250 in-lbs (29 N-m).

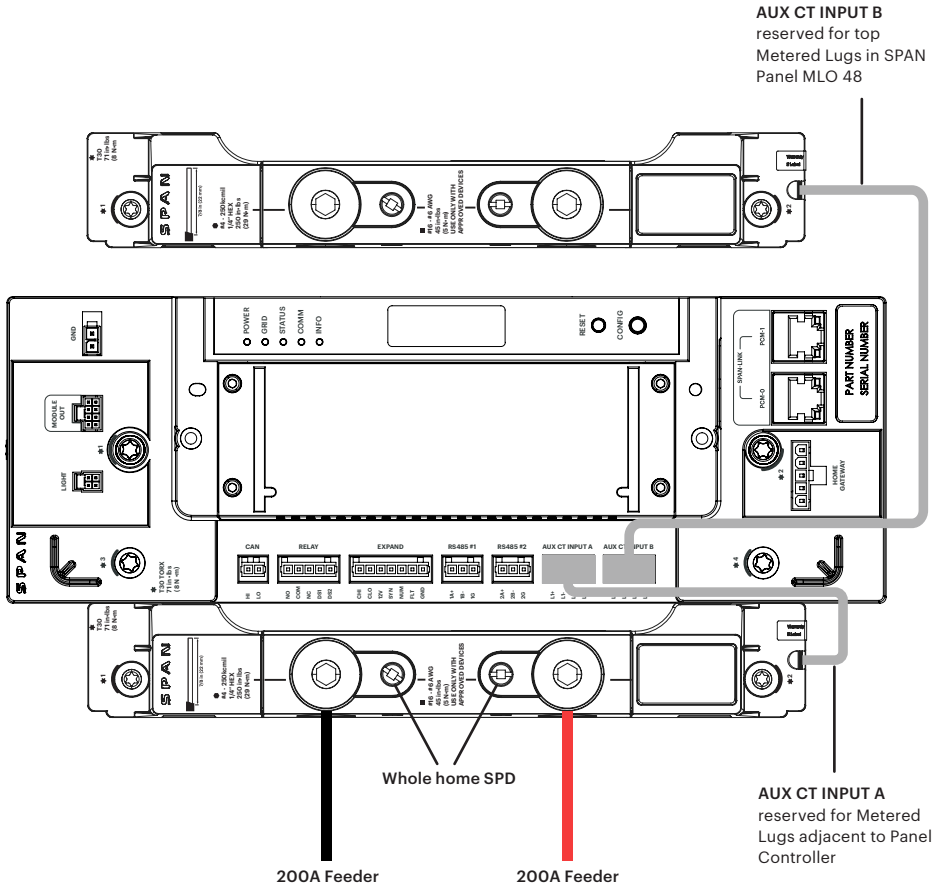
Metered Lugs are factory installed with auxiliary CT wiring connected to the Panel Controller. Metered Lugs closest to the Panel Controller always occupy AUX CT INPUT A.

Wiring whole-home Surge Protection Device (SPD)

The center terminals on the Metered Lugs are dedicated for whole-home SPD connections.

To directly terminate whole-home SPD connections on the Metered Lugs:

1. Insert SPD cables through the small terminals between L1 and L2 terminals.
2. Torque down SPD cables using a #2 square or flat head screwdriver, torquing to 45 in-lbs (5 N-m).



WARNING: Risk of electric shock. Check that all circuits are de-energized before making any connections, including generation equipment such as solar inverters and storage batteries.

CAUTION: The SPAN Panel is only intended for use on 120/240 or 208Y/120 VAC electrical service.

- Connect line conductors for all circuits to the respective breaker.
- Connect neutral and ground conductors to their respective wire terminals.
- Once all conductors are connected and secured, check that there are no exposed conductors or stray wires.
- Clean up conductor routing to ensure no wires will be pinched when re-assembling each modular deadfront and overall deadfront.

CAUTION: Do not remove or modify factory-installed jumper cables and fasteners unless following specific instructions in this manual. Improper connections on factory-installed fasteners or cables may lead to Panel malfunction and damage. Such damage is not covered under the SPAN Panel Limited Warranty.

NOTE: Follow markings on Panel enclosure for specific ground bar positioning and orientation at each designated ground bar location.

NOTE: Keep track of circuit labeling in retrofit installations. This information is required during commissioning.

NOTE: SPAN is also compatible with most standard SPDs connected to a 2-pole breaker or installed on a 2-space slot. The SPD circuit must be marked as an essential circuit in the SPAN Installer App under Circuit Labeling. If using an SPD with usable circuits, be sure to only have essential items on those circuits (e.g., internet router, alarms, fire detection). Homeowners will not be able to turn this circuit off via the SPAN Home App.

NOTE: SPAN is not responsible for the performance of SPDs. Follow manufacturer installation guidelines for direct terminal wiring compatibility.

05 Communications wiring

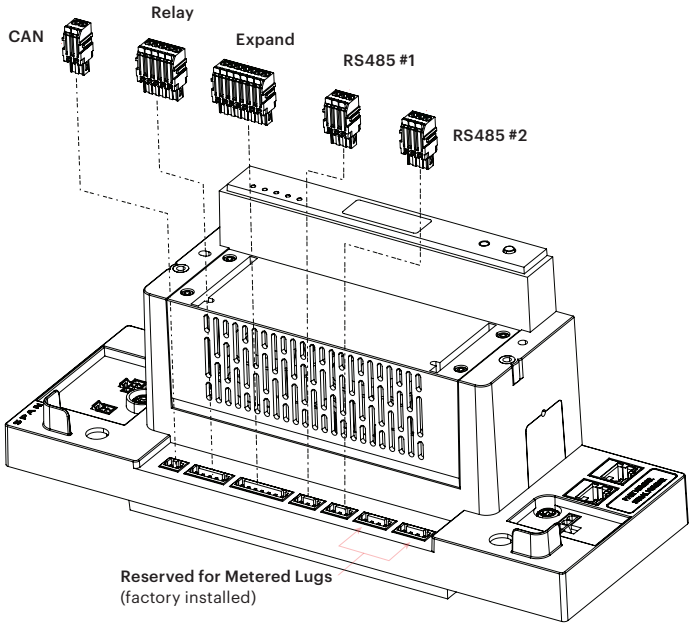
Use minimum 300V rated, twisted-pair, copper conductors only for inter-device signal wiring. Use shielded cables for CAN and RS-485 connections. Run no more than 328 ft (100 m) of cable length for Ethernet, CAN, and RS-485 wiring.

A

Wiring the Panel Controller

Every SPAN Panel has a Panel Controller that governs and enables smart features on the Panel. It is permanently fixed to the panelboard and requires its own neutral and ground connections (factory-installed). The SPAN Panel Controller powers the SPAN Panel enclosure-side LEDs and Gateway, while supporting external CAN, RS-485, auxiliary signal, and Ethernet connections.

Low voltage connections to additional hardware devices using CAN, RS-485, auxiliary signals, or SPAN CTs are located beneath the Gateway tray. See Gateway tray removal.

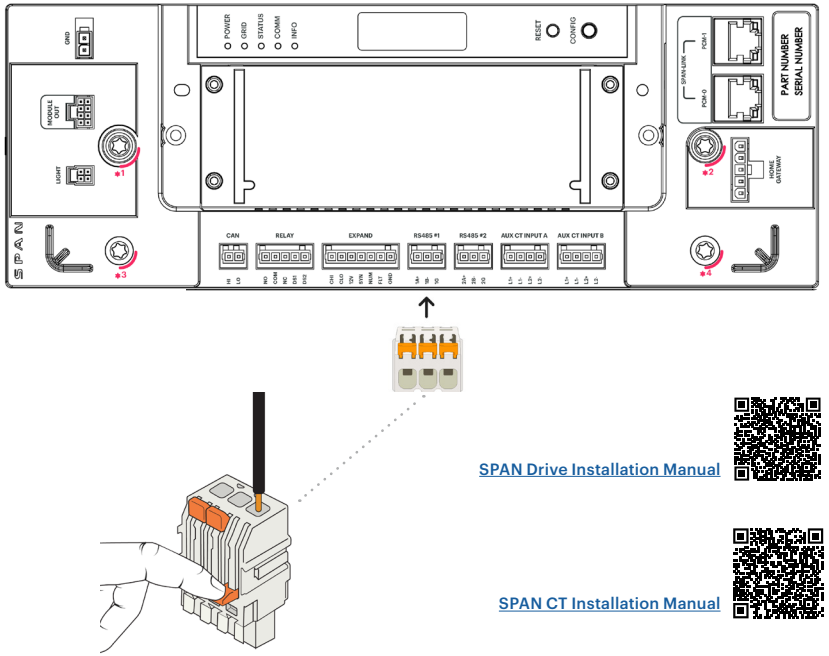


Installing Low Voltage Wiring

To install low voltage wiring once the Gateway tray is removed:

1. Unplug and remove low voltage terminal connector from Panel Controller.
2. Insert stripped wire into the connector by opening the orange retention latch. Close retention latch once wire is fully seated inside connector.
3. Insert low voltage terminal connector with wire back on Panel Controller.

For SPAN Drive and SPAN CTs low voltage wiring guidance, refer to their product specific installation manual on techportal.span.io.



Multiple SPAN Panels Wiring

SPAN recommends hardwiring Ethernet between each SPAN Panel via the SPAN-LINK port located on each Panel's Panel Controller.

CAUTION: Factory-installed jumper cables connecting Panel Controller to neutral, ground, and adjacent panelboard accessories must not be removed or damaged during installation. Improper connections on factory installed cables may lead to Panel malfunction and damage. Such damage is not covered under the SPAN Panel Limited Warranty.

NOTE: Homeowners will only receive one email to create a SPAN Home App account and access the SPAN Panel. Multiple SPAN Panels, excluding SPAN Panel MAIN 32, can be viewed under one SPAN Home App account.

SPAN Drive Installation Manual

SPAN CT Installation Manual

05 Communications wiring

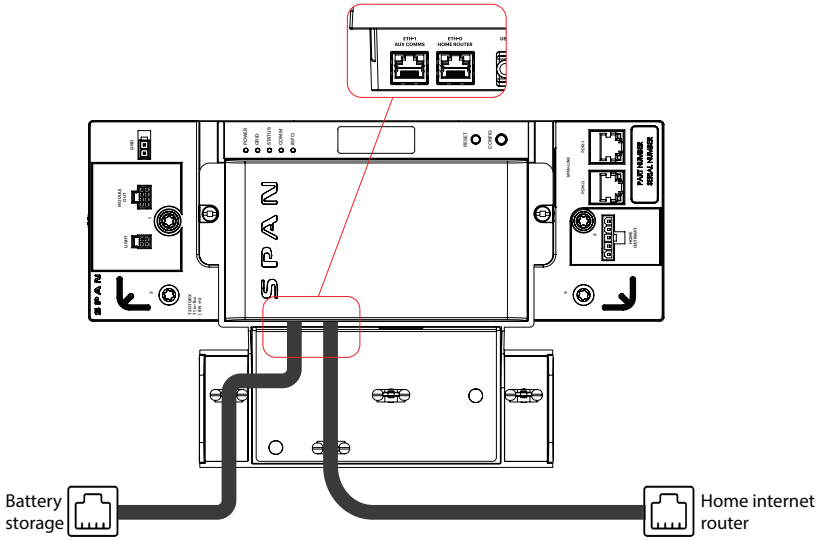
B
Wiring the Gateway

The SPAN Gateway enables SPAN Panels to connect to the internet and SPAN mobile apps. SPAN recommends hardwired Ethernet connections between the Gateway and home router for best customer experience.

STEP 1

Run Ethernet wiring to ETH-0 and ETH-1 ports through the Gateway tray to separate power and low voltage cables throughout the SPAN Panel. Use wire clips on the Gateway tray to secure low voltage cables. Maintain sufficient cable slack for the Gateway to be pulled out of the Gateway tray post Panel installation.

- ETH-1 is for integrated backup battery storage communications. See Backup System Connection Guide for details on setting up backup storage systems with SPAN.
- ETH-0 is for hardwired internet connections to the homeowner's router.

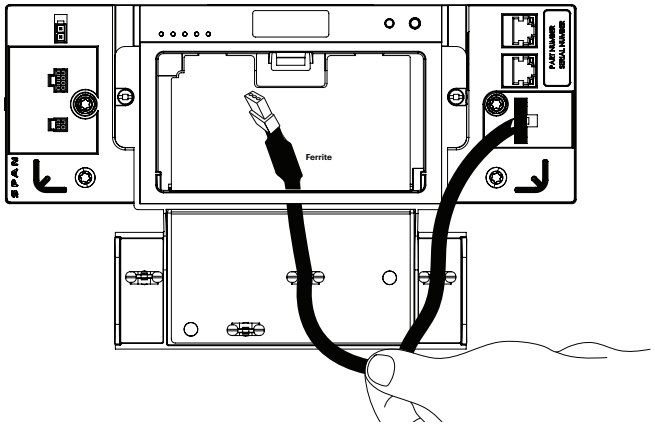


CAUTION: Do not damage or modify the Home Gateway USB jumper to the Panel Controller. Improper connections may lead to Panel malfunction.

NOTE: External antennas are not provided by SPAN and must be separately purchased.

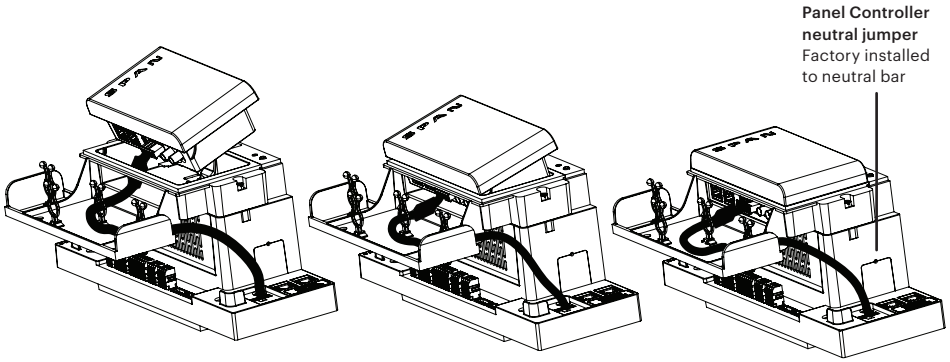
STEP 2

The SPAN Gateway connects to the Panel Controller through a custom Gateway cable. Route the Gateway cable from the Panel Controller GATEWAY port through the Gateway tray and into the PANEL CONTROLLER port. Listen for a click at each connection port when securing the cable.



STEP 3

The SPAN Gateway is accessible with the deadfront on outside the panel dead-front. To access the Gateway reset button and connectivity ports post installation, simply tilt and gently pull the Gateway away from the panel.



05 Communications wiring

C

Wiring the enclosure ambient lights

SPAN Panel enclosure ambient lights are located on the sides of the enclosure and powered by the Panel Controller. Depending on the specific orientation of the enclosure and panelboard, enclosure ambient lights wiring may vary.

STEP 1

Identify the following parts:

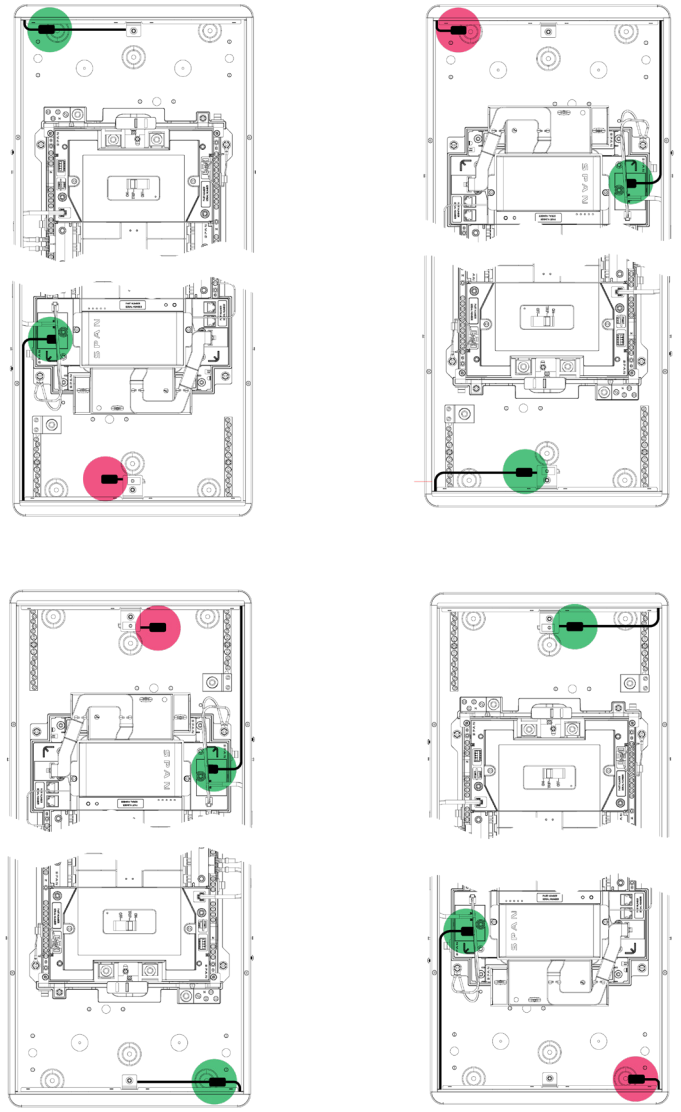
- LIGHT port on Panel Controller installed at either the top or bottom of the Panel.
- Long loose end of the enclosure light harness. It is either loose from the top or bottom of the Panel, depending on the orientation of the enclosure.
- Short disconnected end of the enclosure light harness, either located behind the door switch or a corner of the enclosure.

STEP 2

Plug the long loose end of the enclosure light harness into the Panel Controller LIGHT port. Ensure this connection has sufficient slack.

In cases where the loose end of the enclosure light harness cannot reach the Panel Controller LIGHT port:

- Connect the only two disconnected ends of the enclosure light harness together.
- Route harness cables through wire clips where applicable
- Disconnect the enclosure light harness connectors on the opposite end of the enclosure and pull the longer loose end out of wire clips on the enclosure
- Connect the long loose end of the wire harness to Panel Controller LIGHT port.



KEY

Connected

Disconnected

06 Installing the Panel door

The SPAN Panel door may be configured to swing open from either direction, with the SPAN logo always upright. A T15 security Torx bit, located in the Accessories Box, is required to install the door.

A

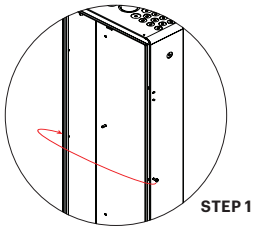
Configuring the door swing direction

To configure the door to swing open from the opposite side:

STEP 1

Switch the enclosure latch pin:

1. Unfasten the latch pin and reposition the latch pin on the opposite wall of the enclosure.
2. Tighten the screw to 2 N-m.



STEP 2

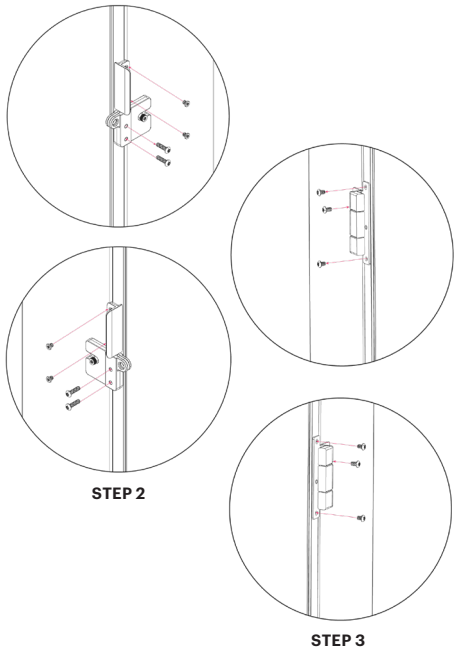
Switch door latch assembly:

1. Disassemble the latch from the door by unfastening two (2) T15 screws.
2. Remove the two (2) short T15 screws on the latch handle. Flip the handle to other side of metal plate, aligning mounting holes with notch. Reinstall the two (2) short screws.
3. Reposition the door latch assembly on the left end of the door with the handle facing upward.
4. Secure the latch assembly to the door by fastening the two (2) screws to 0.5 N-m.

STEP 3

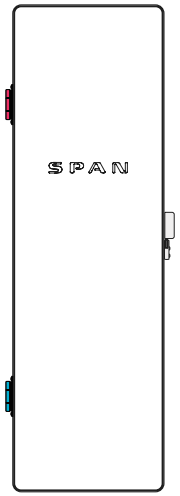
Switch the door hinge assembly:

1. Disassemble the top and bottom hinges from the door.
2. Reposition the hinges on diagonally opposite ends of the door as per diagram on the right.
3. Use the keyhole feature on the door hinge brackets to position the door to the enclosure.
4. Tighten the screws to 2 N-m.



Door in default Orientation

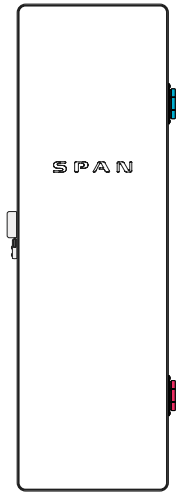
Door hinges on left, Door latch on right
Opens to the left side with handle on right



Hinge A: Left side, top
Hinge B: Left side, bottom
Latch: Right side

Door in flipped orientation

Door hinges on right, Door latch on left
Opens to the right side with handle on left

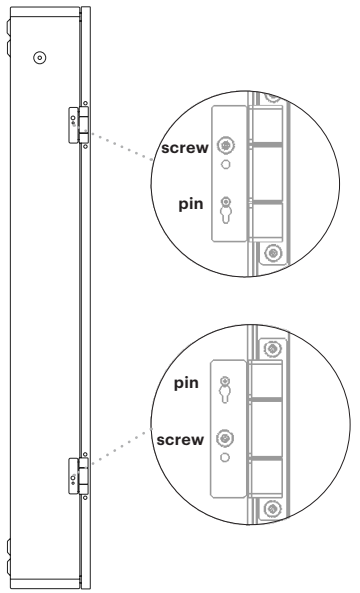


Hinge A: Right side, bottom
Hinge B: Right side, top
Latch: Left side

B

Secure Panel door to enclosure

1. Locate two (2) T15 security Torx screws taped to Panel door.
2. Align the door hinge brackets to the pins on the enclosure. Make sure both top and bottom brackets align with the pins before sliding the door down into place.
3. Fasten the two (2) hinge bracket screws to secure the door to enclosure, tighten screws to 7 in-lbs (0.8 N-m).



07 Finishing Installation

A

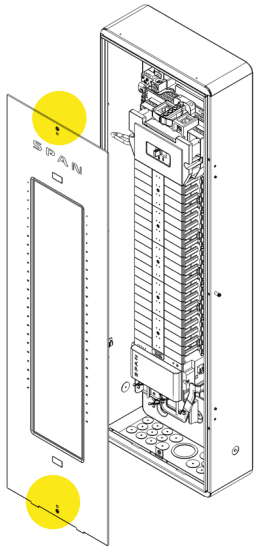
Confirm that all connections are correct, properly grounded, and secure. Factory-installed jumper cables and fasteners must remain secure in place. Ensure enclosure ambient LEDs are connected.

B

Knock out the MID Override slot on the deadfront to expose the MID Override switch. Only applicable for SPAN Panel MAIN 40.

C

Using a flathead / #2 square screwdriver, fasten the two (2) deadfront fastener screws to the Panel enclosure.



D

Only after fully replacing the deadfront assembly, restore power.

E

OPTIONAL: Lock the Panel closed with the hasp at the door latch using a lock provided by the homeowner.

WARNING: Risk of electric shock. Do not modify the overall deadfront and ensure alignment of Branch deadfronts to cover all live components in the Panel. Replace Branch circuit tabs as needed.

08 Commissioning

The SPAN Panel must be configured with the SPAN Installer App prior to customer use. The SPAN Installer App provides setup instructions, including configuring the Panel's internet connection, digitally labeling circuits, connecting other devices to the Panel, and error and troubleshooting instructions.

You must download the SPAN Installer App from www.span.io/span-apps and be a SPAN Authorized Installer™ to receive a login and gain access.
To become a SPAN Authorized Installer, refer to www.span.io for instructions.

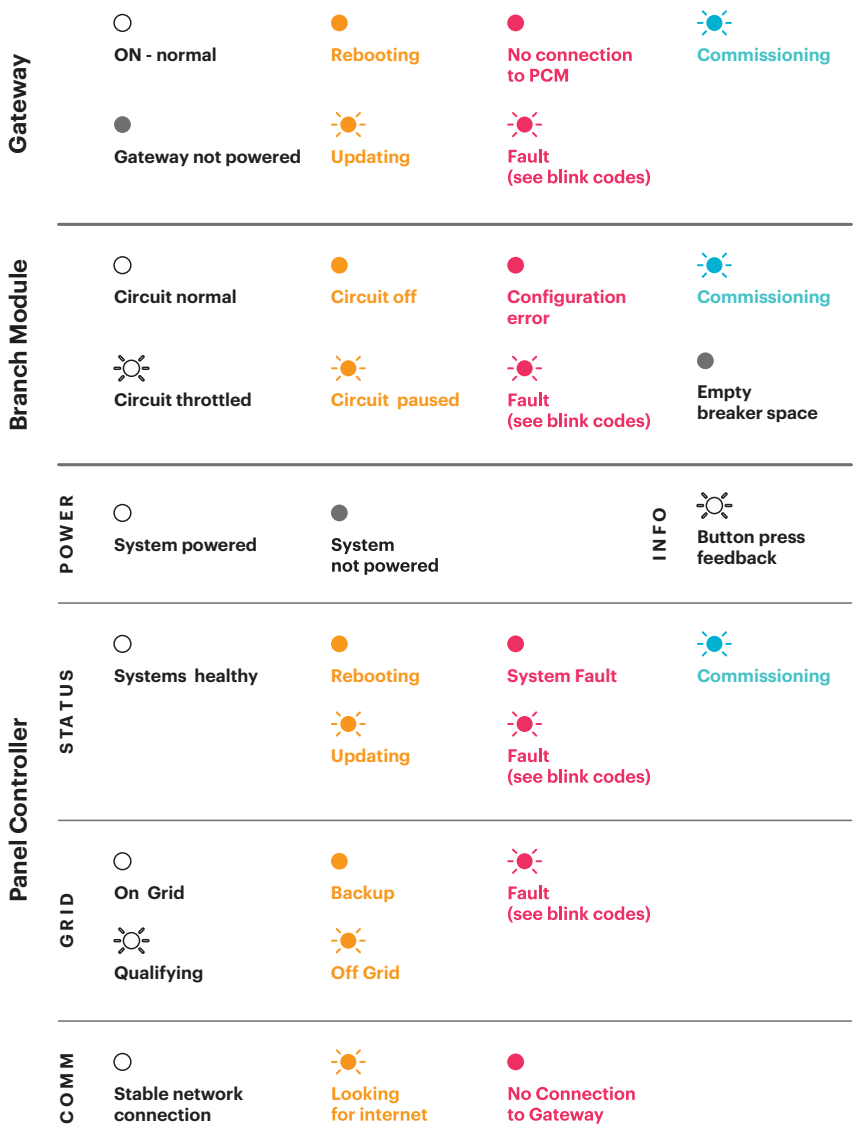
Scan the SPAN Panel Controller label found above the Gateway to begin commissioning. Status LEDs on the Panel Controller and Branch Panelboard Accessories will flash blue when the SPAN Panel is being commissioned.

A commissioned SPAN Panel display solid white LEDs under normal operating conditions.

NOTE: Uncommissioned SPAN Panel branch circuits with power flow detected will display a solid red LED on the Branch Panelboard Accessory.

Troubleshooting & Servicing

Interface guide



Communication with the SPAN Panel

Follow these troubleshooting steps to establish communication and verify operation of the SPAN Installer App:

1. Wait at least three (3) minutes after powering-on before attempting to connect to the Panel.
2. Ensure the SPAN Panel is connected to the internet using the SPAN Installer App.
3. Ensure external hardware systems such as battery backup and SPAN Drive® are communicating with the SPAN Panel using the SPAN Installer App, if applicable.
4. Ensure all circuits and circuit locations are correctly identified in the SPAN Installer App.
5. To restart the system, press and hold the Reset button for 10 seconds (see "Resetting the system" below).

Resetting the System

If it becomes necessary to restart the system, use a small tool to press the Reset button, located on the Panel Controller. Hold the button for 8 full seconds before releasing.

Grid Override switch and Panel power

In normal operation, ensure the Grid Override switch is positioned such that the red tab is not exposed with the deadfront on. Failure to keep the Grid Override switch in closed position may cause power loss to the SPAN Panel.

⚠ **WARNING:** Do not attempt to open, disassemble, repair, tamper with, or modify the equipment. The equipment contains no user-serviceable parts other than field-installed breakers. Contact the installer who installed the equipment for any repairs. Only qualified electrical personnel should remove the deadfront panel.

⚠ **CAUTION:** Do not remove the protective label or operate the manual override unless directed to do so by SPAN Support. Improper operation of the manual override may damage the unit.

Appendix A:
Circuit breaker compatibility

SPAN has been evaluated per the UL Standard for panelboards for use with the branch breaker types below in Table A.1.

Informational Notes

National Electrical Code (NFPA 70) does not prohibit the use of different branch circuit breakers in panelboards provided it does not violate the listing of any equipment. NEC article 110.3(B) states “Equipment that is listed, labeled, or both shall be installed and used in accordance with any instructions included in the listing or labeling.”

The Standard for Molded-Case Circuit Breakers (UL 489) does not require listing circuit breakers for use in specific panels, nor does this standard cover panelboards. Such testing is covered by the UL Standard for panelboards (UL 67), which does require the panelboard to be listed with specific breaker types. SPAN is certified to the UL 67 Standard via a Nationally Recognized Testing Lab (NRTL) for use with the branch circuit breakers below. This is reflected in this installation information as well as marked on the product itself.

Compatible branch breakers are listed on following pages.

Short circuit current rating

Main breaker manufacturer	Main breaker rating (A)	Branch breaker manufacturer	Interrupting Circuit rating (kAIC)
SPAN	200	Square D (HOM) or Eaton (BR)	22
		Any other manufacturer	10
Eaton (CSR)	100 - 200	Eaton (BR)	22
		Any other manufacturer	10

Specified branch breakers

Siemens Breakers

Style	Type	Poles	Max Amp	Catalog #s
General	QP	1, 2	100	Q followed by 110 to 290; may be followed by H
Duplex (tandem)	QT	1	30	Q followed by 1010 to 3030; may be followed by NC
Quadplex (tandem)	QT	2	40	Q followed by 21515 to 24040; followed by CT2
Branch-feeder arc fault circuit interrupter	QAF2	1, 2	20	QA followed by 115 to 120; followed by AF; may be followed by H
Combination arc fault circuit interrupter (AFCI)	QAF and QAF2	1, 2	20	Q or QA followed by 110 to 220; followed by AFC; may be followed by H
Tandem combination arc fault circuit interrupter (AFCI)	CAFCI	1	20	Q followed by 1010 to 2020; followed by AFC
Ground fault circuit interrupter (GFCI)	QPF and QPF2	1, 2	60	QF followed by 110 to 260; followed by A; may be followed by H
Ground fault equipment protection	QE and QE2	1, 2	60	QE followed by 115 to 260; may be followed by H
Dual function combination ground fault and arc fault protection	QFGA2	1	20	Q followed by 110 to 120; followed by DF; may be followed by H

NOTE: Branch breakers must be series-listed with the main breaker for 22 kAIC.

Appendix A:
Circuit breaker compatibility

Specified branch breakers, cont.

Eaton Breakers

Style	Type	Poles	Max Amp	Catalog #s
General	BR	1, 2	100	BR or BRH followed by 110 to 290
Duplex (tandem)	BD	1	50	BD followed by 1010 to 5050
Quadplex (tandem)	BQ and BQC	1, 2	50	BQ followed by 215215 to 2502120
Combination arc fault circuit interrupter (AFCI)	BR	1, 2	20	BRN or BRC followed by 110 to 120; followed by AF or CAF
Ground fault circuit interrupter (GFCI)	GFTCB and GFEP	1, 2	50	BRN, GFTCB, BRHN, or GFTCBH followed by 110 to 250; may be followed by GF
Ground fault equipment protection	GFEP	1, 2	50	BRN or GFEP followed by 115 to 250; may be followed by EP
Dual function combination ground fault and arc fault protection	BR	1	20	BRN or BRAFGF followed by 110 to 120; may be followed by DF

Square D Breakers

Style	Type	Poles	Max Amp	Catalog #s
General	HOM	1, 2	100	HOM followed by 110 to 290
Tandem (duplex)	HOMT	1	30	HOMT followed by 1010 to 3020
Quad (tandem)	HOMT	1, 2 2	50 50	HOMT followed by 1515215 to 2020250 HOMT followed by 215215 to 230250
Combination arc fault circuit interrupter (AFCI)	HOM-CAFI	1, 2	20	HOM followed by 115 to 220; followed by CAFI
Ground fault circuit interrupter (GFCI)	HOM-GFI	1, 2	50	HOM followed by 120 to 250; followed by GFI
Ground fault equipment protection	HOM-EPD	1, 2	50	HOM followed by 115 to 250; followed by EPD
Dual function combination ground fault and arc fault protection	HOM-DF	1	20	HOM followed by 115 to 120; followed by DF

GE Breakers

Style	Type	Poles	Max Amp	Catalog #s
General	THQL and THHQL	1, 2	100	THQL or THHQL followed by 1115 to 21100
Combination arc fault circuit interrupter (AFCI)	THQL-AF2 and THHQL-AF2	1	20	THQL or THHQL followed by 1115 to 1120; followed by AF2
Ground fault circuit interrupter (GFCI)	THQL-GFT and THHQL-GFT	1, 2	50	THQL or THHQL followed by 1115 to 2150; followed by GFT
Dual function combination ground fault and arc fault protection	THQL-DF and THHQL-DF	1	20	THQL or THHQL followed by 1115 to 1120; followed by DF

NOTE: SPAN Panel is not compatible with plug-on neutral style branch breakers. Use only pigtail neutral breaker styles where applicable.

NOTE: SPAN Panel is not compatible with Eaton BRL type branch breakers. Ensure secure attachment of branch breakers at the panelboard busbar stab and heel to prevent any wobbling or loose connections.

Appendix B: PowerUp and PCS

The SPAN Panel with PowerUp is equipped with a Power Control System (PCS) to prevent the overloading of its mains conductors. The PCS functions are enabled by default whenever SPAN PowerUp™ is turned on by the SPAN Authorized Installer™ and cannot be modified or deleted by a user once set. SPAN PowerUp is enabled during installation commissioning using the SPAN Installer® App. Note that modifications, including disabling the PCS function, can only be done by a SPAN Authorized Installer after requesting a password from SPAN to unlock the PowerUp settings in the SPAN Installer App. The PCS function operates independent of other SPAN PowerUp features, such as appliance prioritization. Where the main breaker in the SPAN Panel is used on the service or feeder overcurrent protective device, the SPAN PCS is suitably rated to provide branch circuit overcurrent protection for the feeders or service conductors connected to the integral main breaker. The controlled current setting (the PCS Setpoint) of continuous current rating shall not exceed the rating of conductor ampacity terminated to the main lugs of the SPAN Panel. The SPAN Panel PCS does not include any additional PCS operating modes (such as ESS operating modes) other than those outlined in this manual. However, the SPAN Panel PCS does not restrict the PCS operation of any other device which is connected to the SPAN Panel or service.

Compliance Info

SPAN Panel is listed both as a panelboard to UL 67 and as Energy Management Equipment to UL 916. SPAN Panel installations must meet applicable requirements in NFPA 70®, National Electrical Code® (NEC®) and the installation instructions provided by SPAN. All commissioning processes and settings, including PowerUp settings, must be performed by a SPAN Authorized Installer as described by SPAN in the installation instructions, and in the SPAN Installer App.

Proper operation of SPAN's PowerUp energy management functions are dependent upon the Panel being commissioned with the correct setpoint, including the rating of the main overcurrent protection device(s) supplying SPAN Panel. See SPAN Panel installation instructions for additional warnings and requirements.

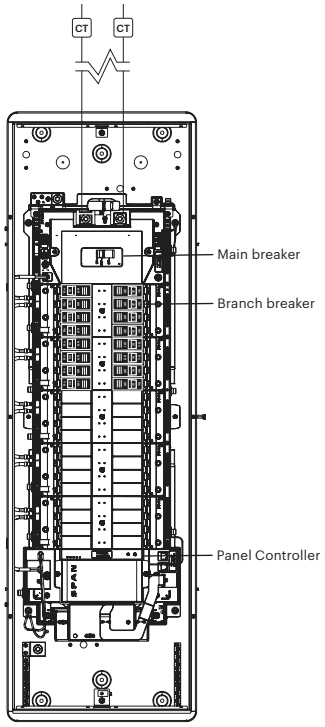
WARNING: Only qualified personnel shall be permitted to set or change the setting of the maximum operating current of the PCS, configure SPAN PowerUp PCS settings, or make changes to these settings. The maximum PCS operating current setting shall not exceed the busbar rating or conductor ampacity of any PCS controlled busbar or conductor. All elements of the PCS are intended to be installed in accordance with NEC, Section 705.13 in the 2020 edition or Section 705.30(C) in the 2023 edition. Incorrect configuration or setting of the power control settings may result in unsafe conditions. All sensors used for PCS are integrated into the Panel and are not user serviceable.

PCS Requirements

This system is equipped with a PCS. All PCS controlled conductors or busbars shall be protected with suitably rated overcurrent devices appropriately sized for the busbar rating or conductor ampacity, protecting the conductors connected to the main lugs of the SPAN Panel.

Where PCS functions are enabled for the SPAN Panel, the sum of the maximum currents from all power sources connected to the SPAN Panel's busbars shall be less than or equal to the PCS continuous current rating.

Where the SPAN Panel EMS/PCS functions have not been enabled, and the Panel supplies continuous loads or any combination of continuous and noncontinuous loads, the rating of the overcurrent device supplying the panel shall not be less than the noncontinuous load plus 125 percent of the continuous load.



PCS Setpoint (A) (Circuit Breaker Rating)	**Continuous Current Rating (A)**	**Max Power Source Current (A)**
50	40	40
...	...	...
100	80	80
125	100	100
150	120	120
175	140	140
200	180	160

CAUTION: All PCS controlled busbars or conductors shall be protected with suitably rated overcurrent devices appropriately sized for the busbar rating or conductor ampacity. SPAN MLO Panels with feeders connected to Metered Lugs must have a main breaker installed upstream of the Panel.

NOTE: Where the SPAN Panel EMS/PCS functions have been enabled, the maximum operating currents in controlled busbars or conductors are limited by the settings of the power control system (PCS) and may be lower than the sum of the currents of the connected controlled loads or power sources. The settings of the PCS controlled currents may be used for calculation of the design currents used in the relevant sections of NEC Articles 690, 705, and 220. All elements of the PCS are intended to be installed in accordance with the NEC, Section 705.13 in the 2020 edition or Section 705.30(C) in the 2023 edition.

Revision Table

Date	Description
Oct 06, 2025	Clarify language throughout. Update PCS image
Aug 06, 2025	Update L1 / L2 designation on Panel wiring diagram
July 15, 2025	New torque verfication, clarify no rotating MLO Panels
June 10, 2025	New SPAN Panel MAIN 16, MLO 24 content
Feb 20, 2025	Tech Portal Release
Nov 20, 2024	First Print

span.io/techportal
This document does not always reflect the latest version.
Refer to Tech Portal for most up-to-date installation Manual.