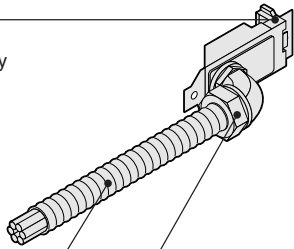


Base Power-Ins

Base power-ins are field installed and connect the panel electrical system to the building power source. All five wiring schematics are available.
 ▶ Specifying, page 271

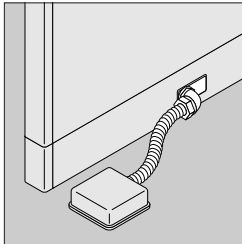
Connector plugs into the appropriate powerway terminal.



Conduit is flexible and houses wires for 3 or 4 circuits.

Right-angle elbow helps position the conduit close to the panel.

Product Details

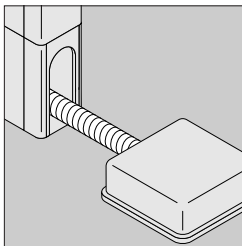


Power-in brings power to panel run by connecting to a designated receptacle location or to the end of the powerway.

Three circuit shared neutral base power-in fits standard- or larger-size opening receptacles.

Three circuit separate neutral and all four circuit base power-ins can only fit in larger-size receptacle openings.

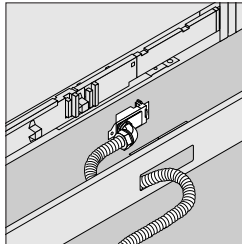
Conduit connects power-in to building's power source.



End power-ins interface the building power by entering at the end of a panel and connecting to a flag terminal on a powerway. End power-ins occupy the same flag terminal as a power pole and worksurface height power. A receptacle opening is not used. If power pole or end power-in and power cable management panel are used together, you must plan accordingly for your installation. If power pole or end power-in and power cable management panel are used together, you must plan accordingly for your installation.
 ▶ Page 273

▶ Page 273

Connections



Attaches to the appropriate location on the powerway depending on powerway width.

Filler plates are available so a duplex-size power-in can be used in a larger-size opening.

Wiring & Cabling

All the components in an electrical distribution network must use the same wiring schematic. Components are color coded and keyed to make it impossible to connect mismatched parts.

Building power source can come from the floor, wall, or column.

Conduit leads must be hardwired to the building wiring by a qualified electrician or engineer.

Power-ins are UL listed and CSA certified.

Local electrical codes vary. Consult a qualified electrical contractor or engineer for proper installation of electrical equipment.

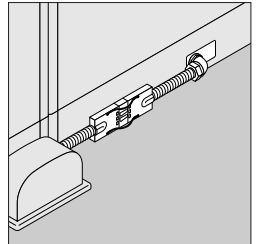
Chicago, New York City, and Los Angeles have special requirements.
 ▶ Pages 227–229

Understanding Building Wiring
 ▶ Page 230

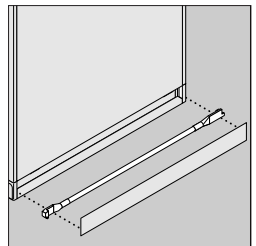
Surface Materials

Conduit
 • Black plastic only

Application Topics



Breakaway power-in is mandated for use in health care occupancies in the State of California by the Office of Statewide Health Planning and Development Organization (OSHDP). With 50 pounds of pressure, the connection will come apart to separate live electrical current in the event of panel movement. Breakaway power-ins fit duplex- or oversized receptacle openings.
Tip: This product is not available in Canada.
 ▶ Page 272



18"W panels cannot be connected to power-ins because these panels only accommodate pass-through powerways.

Actual Dimensions

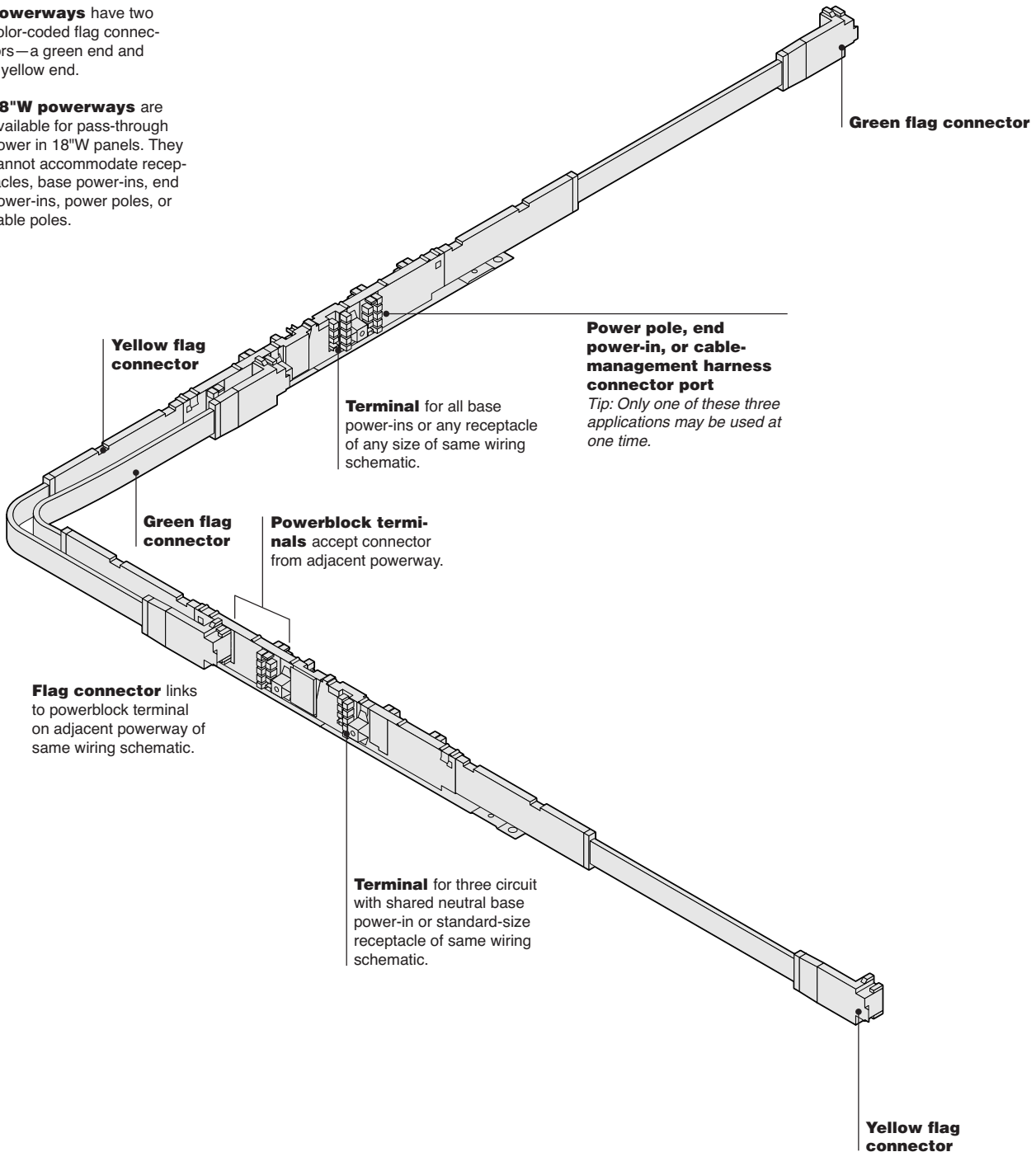
Depth	2 1/2"
Width	5 1/2"
Height	1 3/4"
Conduit diameter	1/2"
Conduit length	6'
Elbow depth	1 5/8"

18"W and 24"W Powerways

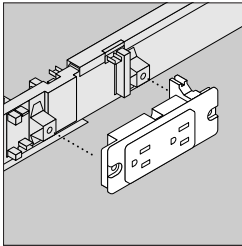
Powerways that are installed in the panel base cavity allow power to be distributed wherever panels go. All five wiring schematics are available.
► Specifying, page 277

18"W and 24"W powerways have two color-coded flag connectors—a green end and a yellow end.

18"W powerways are available for pass-through power in 18"W panels. They cannot accommodate receptacles, base power-ins, end power-ins, power poles, or cable poles.



Product Details



Receptacles snap into terminals and are held in place with screws.

- 18"W pass-through powerways have no receptacle locations.
- 24"W powerways have one receptacle location on each side.

▶ Page 48

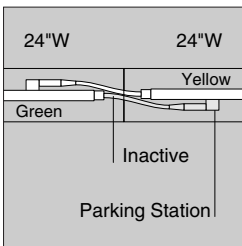
Color coding on 18"W and 24"W powerways designates opposing ends of the powerway—green represents the power-in end. The yellow end can be used to extend the network to an adjacent powerway.

Green end of factory-installed powerways is tagged on the outside of the panel.

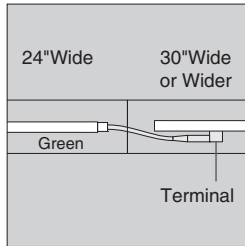
Connections

Two rules for joining 18"W and 24"W powerways apply to every installation:

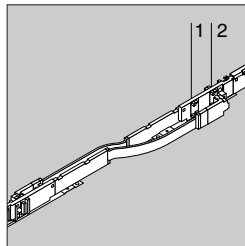
- There must be at least one green end at each intersection.
- There can be no more than one yellow end at each intersection.



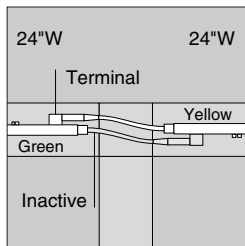
Flag from the green end of 24"W powerway is inactive. It connects to parking station on 24"W adjacent powerway.



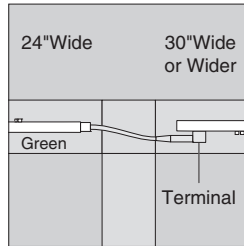
Flag from the green end of 24"W powerway connects to the second powerblock terminal of 30"W or wider powerways.



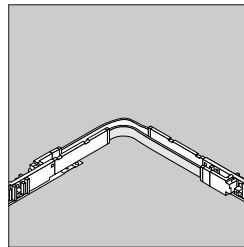
Straight connection is formed when a flag connector from the yellow end of one 24"W powerway attaches to the second powerblock terminal on the green end of the adjacent 24"W powerway.



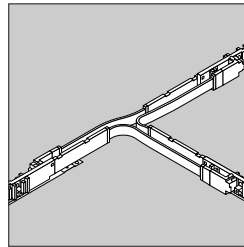
Straight connection in a T-configuration requires the flag connector to travel further. It connects from the yellow end of 24"W powerway to the first powerblock terminal on the adjacent 24"W powerway. Flag from the green end of powerway is inactive and parked on adjacent 24"W powerway. Corner wire cover conceals flag connectors.



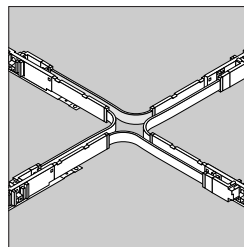
Straight connection in a T-configuration with 24"W and 30"W or wider powerways requires flag connector to travel farther. Flag connector from the green end of 24"W powerway connects to first powerblock terminal of 30"W or wider powerway.



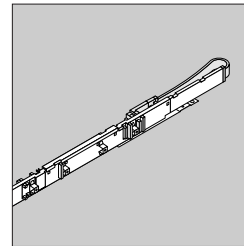
L-connection is formed when flag connector turns to left or right.



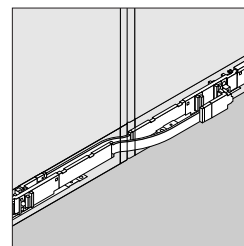
T-connection is formed by three flags—two forming an L-connection and the other a straight connection at the junction.



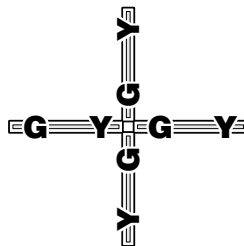
X-connection is formed by three flags that make right turns. Remaining connection is inactive.



End-of-run is terminated by folding the last flag back and connecting it to its own powerblock terminal.



In green-green connections the extra flag can snap onto the extra terminal instead of onto a parking station. This makes a redundant power connection that works the same as a parking station.



Although it is possible to power all four panels in an X-configuration with only green ends at the intersection, it is not recommended. One end of a powerway in the intersection should be yellow.

Wire separator is available to separate data and telecommunication cables from the powerway. It is available factory installed in tackable acoustical panels. It can be field installed in non-tackable, tackable acoustical, and transparent panels and is available from Service Parts.

Wiring & Cabling

All the components in an electrical distribution network must use the same wiring schematic. Components are color coded and keyed to make it impossible to connect mismatched parts.

All Steelcase electrical systems are designed in compliance with the National Electrical Code (NEC) and Canadian Electrical Code (CEC) to function as a multi-wire branch circuit. Installations should be made in accordance with the NEC or CEC provisions for multi-wire branch circuits.

Local electrical codes vary. Consult a qualified electrical contractor or engineer for the proper installation of electrical equipment.

Chicago, New York City, and Los Angeles have special requirements. ▶ Pages 227–229

Powerways are concealed when they are properly installed.

Application Topics

How Connectors Affect Power Flow
▶ Page 58

Steps to Plan an Electrical Network
▶ Page 222

30"W to 60"W Powerways

Powerways that are installed in the panel base cavity allow power to be distributed wherever panels go. All five wiring schematics are available.
▶ Specifying, page 277

30"W and wider powerways have one green flag connector to extend power to an adjacent powerway. Both ends of the powerway have powerblock terminals.

Powerblock terminals accept connector from adjacent powerway of same wiring schematic.

Terminal for standard-size receptacle only of same wiring schematic.

Green flag connector

Power pole, end power-in, or cable-management harness connector port of same wiring schematic.
Tip: Only one of these three applications may be used at one time on one side of the same panel.

Terminal for base power-in or receptacle of any size.

Green flag connector

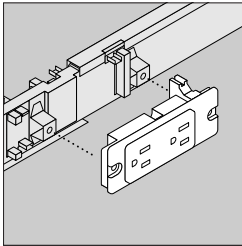
Powerblock terminals accept connector from adjacent powerway of same wiring schematic.

Power pole, end power-in, or cable-management harness connector port of same wiring schematic.

Terminal for standard-size receptacle only of same wiring schematic.

Terminal for any base power-in or any receptacles of any size of same wiring schematic.

Product Details



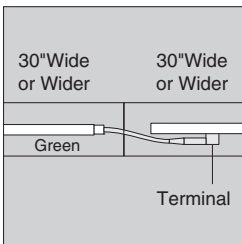
Receptacles snap into terminals and are held in place with screws. 30"W and wider powerways have one receptacle location on each side. 36"W and wider powerways have two receptacle locations on each side.
▶ Page 48

Green end of factory-installed powerways is tagged on the outside of the panel.

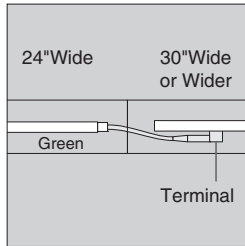
Connections

One rule for joining 30"W and wider powerways applies to every installation:

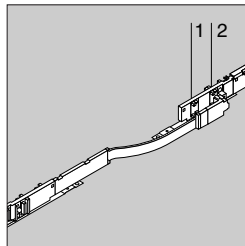
- There must be at least one green end at each intersection.



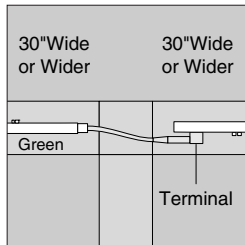
Flag from the green end of 30"W or wider powerway is connected to powerblock terminal on adjacent powerway.



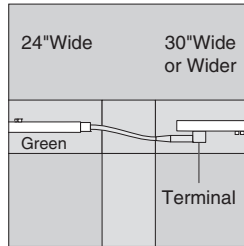
Flag from the green end of 24"W powerway connects to the second powerblock terminal of 30"W or wider powerways.



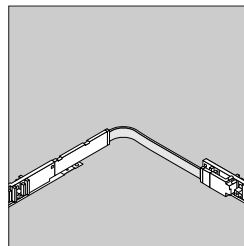
Straight connection is formed when a flag connector from one 30"W or wider powerway attaches to the second powerblock terminal on the end of the adjacent 30"W or wider powerway.



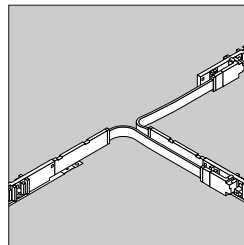
Straight connection in a T-configuration of 30"W or wider powerways requires the flag connector to travel farther. It connects to the first powerblock terminal on the adjacent powerway. Corner wire cover conceals flag connectors.



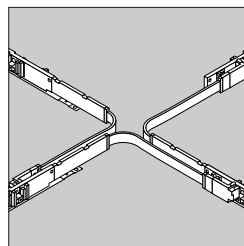
Straight connection in a T-configuration with 24"W and 30"W powerways requires flag connector to travel farther. Flag connector from the green end of 24"W powerway connects to first powerblock terminal of 30"W or wider powerway.



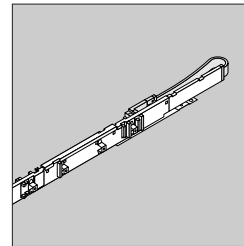
L-connection is formed when flag connector turns to left or right.



T-connection is formed by two flags that make right turns.



X-connection is formed by three flags that make right turns.



End-of-run is terminated by folding the last flag back and connecting it to its own powerblock terminal.



Panel-to-panel connector can be used with 30"W and wider powerways to create a power link where no flag is available. It also can be used to correct planning and installation oversights without having to reconfigure.
▶ Page 278

Wire separator is available to separate data and telecommunication cables from the powerway. It is available factory installed in tackable acoustical panels. It can be field installed in non-tackable, tackable acoustical, and transparent panels and is available from Service Parts.

Wiring & Cabling

All the components in an electrical distribution network must use the same wiring schematic. Components are color coded and keyed to make it impossible to connect mismatched parts.

All Steelcase electrical systems are designed in compliance with the National Electrical Code (NEC) and Canadian Electrical Code (CEC) to function as a multi-wire branch circuit. Installations should be made in accordance with the NEC or CEC provisions for multi-wire branch circuits.

Local electrical codes vary. Consult a qualified electrical contractor or engineer for the proper installation of electrical equipment.

Chicago, New York City, and Los Angeles have special requirements.
▶ Pages 227–229

Powerways are concealed when they are properly installed.

Application Topics

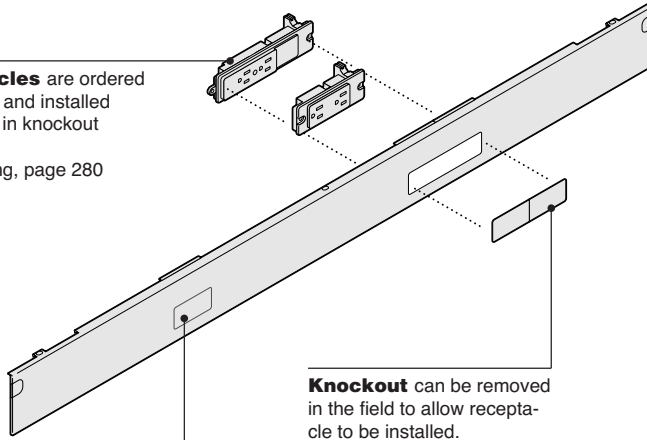
How Connectors Affect Power Flow
▶ Page 58

Steps to Plan an Electrical Network
▶ Page 222

Base Covers and Receptacles

Receptacles are ordered separately and installed in the field in knockout opening.

► Specifying, page 280

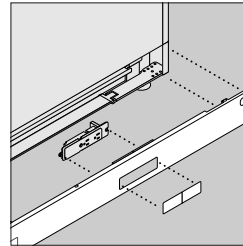


Openings for receptacles are visually unnoticeable until the knockout is removed.

Knockout can be removed in the field to allow receptacle to be installed.

Tip: Once removed, knockout cannot be replaced; a filler plate must be ordered from Service Parts.

Product Details



Base covers containing "invisible" knockouts for receptacles are available as an option.

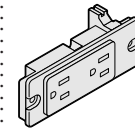
Base covers have one standard-size opening on the left and a larger-size opening on the right.

Exceptions: 24"W and 30"W base covers don't have enough space for two receptacles on each face, so they have a standard-size opening on one side of the panel and a larger-size opening on the reverse side. 18"W panels accommodate pass-through power only, so their base covers do not have receptacle knockouts.

Knockouts cannot be accidentally removed by kicking them or striking them with a vacuum cleaner because the pressure to remove the knockout must be applied from the back of the panel. Once removed, knockout cannot be replaced.

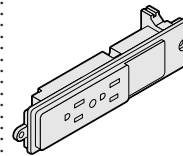
Reusable filler plates are available to replace the knockout or to fill the gap that results when you use a standard-size receptacle in an oversize opening. Filler plates are available through Service Parts.

Receptacles are available in 15-amp and 20-amp versions and are designed to link to a specific circuit. All receptacles are duplex, meaning that they have two outlets, but some are designed to fit in the larger openings of Avenir base covers. As a result, specific lines may be limited to and fit only in specific receptacle locations in the base.



Standard size

Duplex receptacles are one of two sizes. Standard-size receptacles fit in the smaller-size openings (2¾"W x 1⅜"H) of the base cover. The standard-size receptacles will also fit in the larger-size (5¼"W x 1⅜"H) openings with a filler.



Larger size

Oversized duplex receptacles with two outlets will only fit in the larger-size opening of the base cover (5¼"W x 1⅜"H) in 36"W through 60"W panels.

Actual Dimensions

Base cover

Width 17³/₃₂", 23³/₃₂", 29³/₃₂", 35³/₃₂",
41³/₃₂", 47³/₃₂", or 59²¹/₆₄"

Height 3²³/₃₂"

Receptacle opening

Width of left opening 2³/₄"

Width of right opening 5¹/₄"

Height 1³/₈"

3-Circuit, Shared

Line	Size
1	Standard
2	Standard
3	Standard

3-Circuit, Separate Neutrals

Line	Size
A	Standard
B	Standard
C	Larger size

3+D

Line	Size
1	Standard
2	Standard
3	Standard
4	Larger size

3I+1

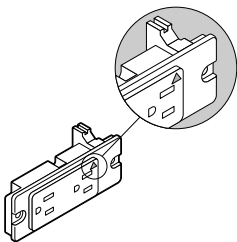
Line	Size
1	Standard
2	Standard
3	Standard
4	Larger size

2+2

Line	Size
1	Standard
2	Standard
3	Larger size
4	Larger size

Numbers printed on the receptacles indicate the line number. With the 3-circuit, separate neutral system these designations are with letters A, B, or C as compared to 1, 2, 3, or 4 in the other systems.

Label on receptacle indicates which circuit the receptacle connects to, so the user can control which devices are on specific circuits.



Orange triangle indicates to users the receptacles that are connected to isolated grounds. The following receptacles have isolated ground circuits.

3 circuit, separate neutrals

Line A
Line B

4 circuit, 3+D

Line 4

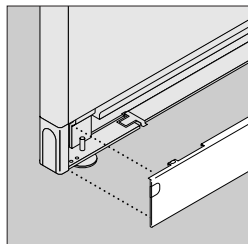
4 circuit, 3I+1

Line 1
Line 2
Line 3

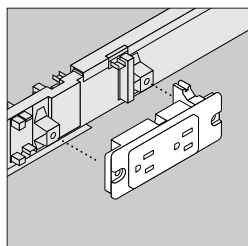
4 circuit, 2+2

Line 3
Line 4

Connections



Base covers are attached to panels with concealed clips and are removable.

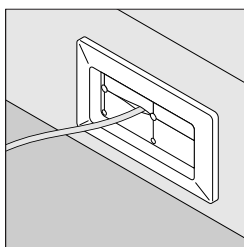


Receptacles plug into terminals on powerway and are secured with screws.

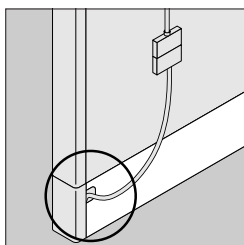
Wiring & Cabling

Any circuit can be accessed at any receptacle location by using the appropriate receptacle. All five wiring schematics are available.

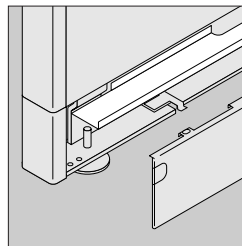
Tip: All the components in an electrical distribution network must use the same wiring schematic. Components are color coded and keyed to make it impossible to connect mismatched parts.



Cable grommets can be inserted in duplex-size receptacle openings to route cables from the panel base to the worksurface.



Cable knockouts at each end of every base cover allow cables to pass through.



Wire separator is available to separate telecommunication cables from the powerway. Wire separator is available factory installed in tackable acoustical panels. It can be field installed in non-tackable, tackable acoustical, and transparent panels and is available from Service Parts.

Surface Materials

Base covers
• Paint (standard)

Receptacle
• Plastic

Application Topics

18"W panels accommodate pass-through powerways only, so their base covers do not have receptacle openings.

Base power-ins are available to fit standard-size or larger-size openings. To avoid using a receptacle position for a base power-in, use an end power-in, or power pole of same wiring schematic.

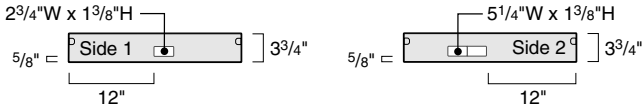
► Page 40

Receptacle Locations

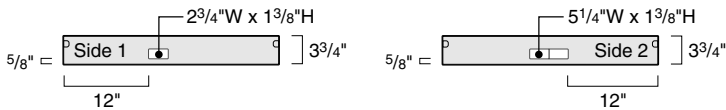
Straight Non-Tackable and Tackable Acoustical Panels



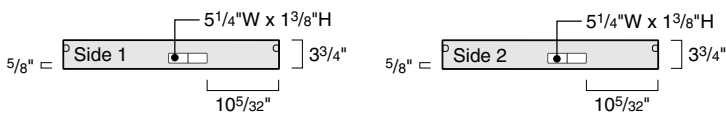
18"W



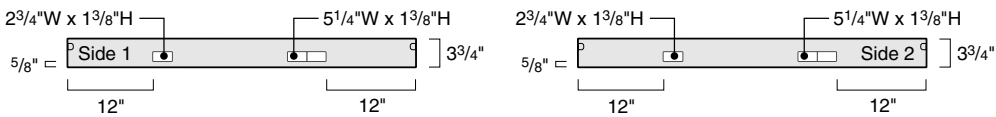
24"W



30"W

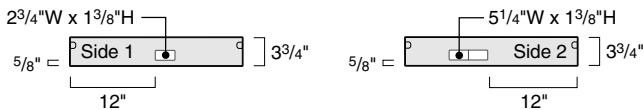


30"W (Optional Base Cover for use in Chicago)



36"W through 60"W

Straight Transparent Panels

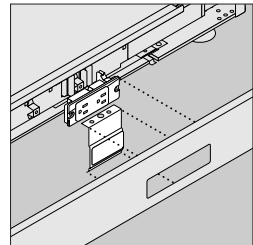


24"W

All panels can be part of a distribution network, but receptacles are available only in the base covers shown below. Standard-size receptacles can be positioned in any opening. Over-size receptacles fit in larger-size openings only.

18"W panels accommodate pass-through powerways only, so their base covers do not have receptacle openings.

Base covers can be moved to the other side of a straight panel in the field.



Gap that results when you use a standard-size receptacle, or a standard-size base power-in, in a larger-size opening must be closed with a filler plate. Filler plates are available through Service Parts.

Base power-ins are available to fit standard-size or larger-size receptacle openings. To avoid using a receptacle position for a base power-in, use an end power-in.

► Page 40

Five wiring schematics are available for Avenir—two 3-circuit systems and three 4-circuit systems.

All the components in an electrical distribution network must use the same wiring schematic. The components (power poles, base power-ins, powerways, and receptacles) snap together and are keyed to make it impossible to connect mismatched parts. Color-coded and labeled components make it easy for installers to identify which wiring schematic each component is dedicated to.

Color coding

- 3 circuits shared = Black
- 3 circuits separate = White
- 4 circuits 3+D = Black
- 4 circuit 3I+1 = Tan
- 4 circuit 2+2 = Grey

Overview

Three-circuit electrical components with shared neutrals

are standard with 5 wires to provide three circuits that share one oversized neutral and one ground. This is the traditional 3-circuit power alternative that is specified by adding the suffix P3 to the panel style number.

Three-circuit with separate neutrals

have 8 wires providing three circuits, each with its own separate neutral. The first two circuits share an isolated ground; the third uses the system ground.

Four-circuit 3+D

are standard with 8 wires to provide four circuits. Three of these circuits share an oversized neutral and a system ground while the remaining circuit has its own neutral and isolated ground. This is the traditional 4-circuit power, also known as 3+D, that is specified by adding the suffix P4 to the panel style number.

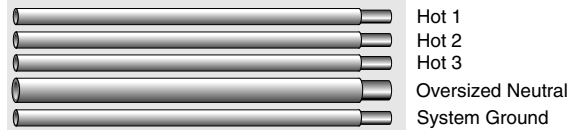
Four-circuit, 3I+1

again have 8 wires but with three circuits that share an oversized neutral and isolated ground. The fourth circuit has its own neutral and is attached to the system ground. This electrical system is like the standard 3+D, but the grounds are switched, providing three isolated circuits and one general purpose circuit as compared to one isolated circuit and three general purpose circuits.

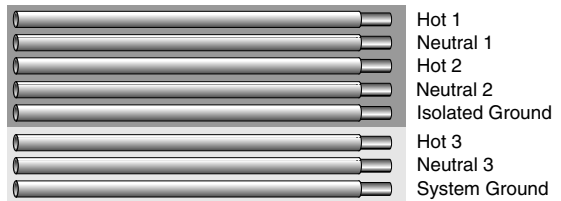
Four-circuit 2+2

also have 8 wires but provide two circuits that share an oversized neutral and a system ground and an additional two circuits with a second oversized neutral and an isolated ground.

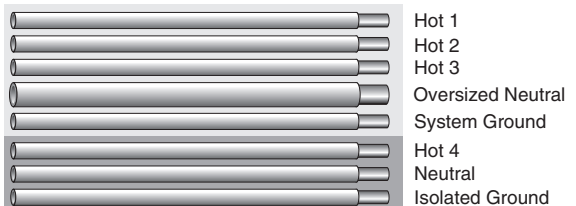
3 Circuit Shared Neutral, 5 Wires



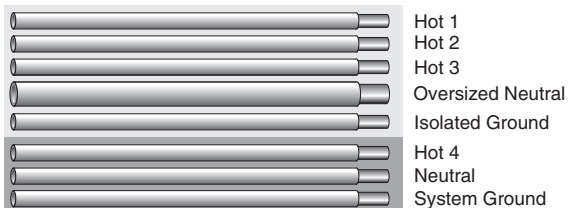
3 Circuit Separate Neutral, 8 Wires



4 Circuit 3+D, 8 Wires



4 Circuit 3I+1, 8 Wires



4 Circuit 2+2, 8 Wires

