

**Integrated Power and Control Solutions
(IPaCS) Equipment**



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Integrated Power and Control Solutions Equipment Overview

For over 30 years, Schneider Electric's Integrated Power and Control Solutions (IPaCS™) business has been providing integrated equipment solutions for retail construction, commercial, and industrial projects.

The Square D® Brand IPaCS family of integrated equipment combines electrical distribution, building controls, and automation into a single factory-assembled and pre-wired enclosure/lineup. Our innovative, cost-effective integrated solutions save valuable floor space, shorten construction cycle times, and reduce installation and material handling costs.

Modular Panelboard System — Pre-Engineered Solution

The Modular Panelboard System (MPS) is tailored to customer specifications and may include panels, transformers, and lighting control. Special Powerlink® lighting control and column-width panel interiors are available. Additional options include power and control cable wiring, contactors, terminal blocks, TVSS, equipment spaces, and power metering/monitoring solutions. Seismically-qualified MPS sections are also available.

Tailored to customer specifications, MPS sections are:

- 86 in. (2184 mm) High
- 9.5 in. (241 mm) Deep
- Width can vary depending on customer specifications

Integrated Power Center — Custom-Designed Solution

For more complex applications, the Integrated Power Center (IPC) allows for the integration of a variety of components, including electrical distribution equipment, HVAC controls, lighting controls, power quality and power conditioning products, TVSS, building management systems and power metering/monitoring solutions. As with all Square D IPaCS integrated solutions, the IPC is designed to meet applicable codes and standards and is available as seismically-qualified.

Factory-assembled, pre-wired (based on shipping splits), and tested in a controlled environment, IPC sections are:

- 84 in. (2134 mm) High
- 10.5 in. (266.7 mm) Deep
- Width can vary depending on customer specifications

Standby Power Quick Connect Tap Box — UL Listed

Installing our Standby Power Quick Connect (SPQ) Tap Box provides the ability to quickly and safely connect to a portable standby power generator. It is rated for 600 A maximum and is available in both 240 V and 480 V versions. The SPQ Tap Box is suitable for NEMA 3R installations keeping the generator connection cables outside your facility and reducing the risk of electrical hazard exposure to employees. The SPQ Tap Box is:

- 36 in. (915 mm) High
- 30 in. (762 mm) Wide
- 16 in. (305 mm) Deep

Submetering Integrated Power Center

The Submetering Integrated Power Center (IPC) is an ideal solution for multi-tenant or departmental metering applications within office towers, condominiums, apartment buildings, shopping centers, and other multi-user environments. The Submetering IPC combines the panel with breakers, the PowerLogic E4800 multi-circuit energy meter and the associated CTs in a factory-assembled and pre-wired solution saving significant space and on-site installation time. Submetering IPC sections are:

- 10.5 in. (266.7 mm) Deep
- Submetering IPC width and height can vary depending on the application

Integrated Power Center 2

The newest addition to the family of Integrated solutions, the Integrated Power Center 2 (IPC2™) provides maximum flexibility to meet customers' specifications. Features include those found in the IPC and are provided in a free-standing enclosure that can be front and rear aligned when transformers are included. The IPC2 family is available as seismically-qualified.

Enclosure options include NEMA 1, NEMA 1 with driphood and NEMA 3R. IPC2 sections are:

- 91.5 in. (2324.1 mm) High
- 24 in. (924 mm) Deep (Standard depth, additional depths are available)
Contact the Schneider Electric Integrated Power and Control Solutions business (1-800-868-9662) for more information.
- Width and depth can vary depending on customer specifications

Integrated Power Center 2 Transformer Combo

Ideally suited for projects having both 480Y/277V and 208Y/120V requirements. Available as a stand-alone solution or can be incorporated into an MPS, IPC or IPC2 lineup. The standard 42" wide x 24" deep footprint will decrease space requirements by 40% or more. A typical IPC2 Transformer Combo includes two panels in the upper cells and a transformer in the bottom cell. Other upper cell options include contactors, individually mounted circuit breakers, ATS's, equipment spaces and power metering/monitoring solutions. The IPC2 Transformer Combo is available as seismically-qualified.

Enclosure options include NEMA 1, NEMA 1 with driphood and NEMA 3R. IPC2 Transformer Combo sections are:

- 91.5 in. (2324.1 mm) High
- Width and depth can vary depending on the transformer kVA

Additional savings are realized on installation, material costs and material handling, as shown in the table below.

Table 10.1: IPC2 Transformer Combo — Estimated Savings ▲

	Stick-Built	Transformer Combo	Savings Realized
Estimated Installation Hours	26–32	3–6	23–26
Materials	Associated pipe, wire and fittings	—	Associated pipe, wire and fittings
No. of Pieces Handled	20–30	1	19–29

▲ Based on an NF 480 V panel, 75 kVA transformer, NQ 240 V panel installation.

The IPC2 Transformer Combo has been recognized by the electrical industry by winning the following awards:

- 2006 INNOVATION Award given by the *Electrical Contracting Products* magazine
- 2006 Product of the Year Gold Medal Award given by the *Consulting/Specifying Engineer* magazine

Modular Panelboard System



Modular Panelboard System

The pre-engineered Modular Panelboard System (MPS) bundles electrical distribution equipment into a single factory-assembled and wired integrated system. This approach replaces the traditional method of independently mounting each panelboard and lighting control system. MPS allows for the integration of a variety of components including:

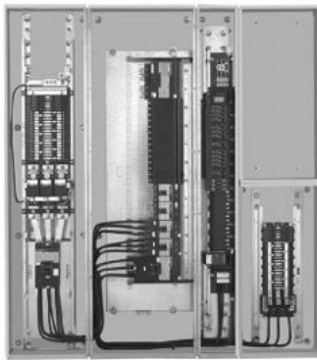
- Panelboards: I-Line, NF, NQ, and Column-width
- Surge Suppression: TVSS integral to panel and/or separately mounted
- Lighting Controls: Powerlink® or lighting contactors
- Monitoring/Metering: Powerlogic® power meters, circuit monitors, branch circuit monitoring, and system display meters

Equipment spaces including factory-installed lighting contactors are available in three configurations:

1. Unwired: Mounted in cell only
2. Line side wired: Line side of each pole is wired to a branch circuit breaker
3. Fully-wired: Line side of each pole is wired to a branch circuit breaker, load side of each pole is wired to a terminal block

Built on a panelboard platform, Modular Panelboard System sections are NEMA 1-rated and meet the requirements of UL 67. Individual MPS configurations include panel sections in full-height, stacked or side-by-side arrangements. Individual sections measure:

- 86 in. (2184 mm) High
- 10–44 in. (254–1118 mm) Wide
- 9.5 in. (241 mm) Deep



MPS Interior

Typical applications for MPS equipment include:

- Restaurants / Food service
- Office buildings / Public buildings
- Warehouses
- Schools / Universities

Integrated Power Center

The custom-designed Integrated Power Center (IPC) combines electrical distribution equipment and building management controls into a single factory-assembled and wired integrated system. IPC has much greater design flexibility for producing a fully-customized solution integrating a variety of distribution and control components, including:

- Panelboards: I-Line, NF, NQ, and Column-width
- Surge Suppression: TVSS integral to panel and/or separately-mounted
- Lighting Controls: Powerlink® or lighting contactors
- Monitoring/Metering: Powerlogic® power meters, circuit monitors, branch circuit monitoring, and system display meters
- Power quality and power conditioning
- Building automation
- HVAC controls

Equipment spaces including factory-installed lighting contactors are available in three configurations:

1. Unwired: Mounted in cell only
2. Line side wired: Line side of each pole is wired to a branch circuit breaker
3. Fully-wired: Line side of each pole is wired to a branch circuit breaker, load side of each pole is wired to a terminal block

Integrated Power Centers are NEMA 1 rated and meet the requirements of UL 891. As with all integrated solutions, IPCs are shipped to the site fully-assembled, completely pre-tested and ready-to-install. Individual IPC configurations include panel sections in full height, stacked, or side-by-side arrangements. IPC sections measure:

- 84 in. (2134 mm) High
- 10.25 (260 mm) Deep
- Widths vary, depending upon customer specifications

Typical applications for IPC equipment include:

- Retail stores / Grocery stores
- Office buildings / Public buildings
- Shopping malls / Strip malls
- Schools/Universities
- Restaurants / Food service
- Hotels/Motels
- Warehouses
- Equipment rooms



Integrated Power Center



IPC Interior

MPS and IPC Layout, Lead Time, and Pricing

Contact your local field sales office.

MPS and IPC Shipping

MPS and IPC lineups are shipped factory-assembled and pre-wired. Customers may specify single- or multiple-section shipping splits (some limitations apply). In addition, lineups may be ordered with or without factory-installed power cables.

Class 2230 / Refer to Documents 2230HO0601 and 2230DB0601

Standby Power Quick Connect Tap Box

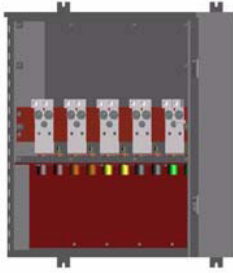
The Standby Power Quick Connect (SPQ) Tap Box provides a reliable solution to quickly and safely connect to a portable standby power generator. Two versions of the SPQ Tap Box have been designed and tested to the required UL standard and offer a wider range of solutions for our customers. All SPQ Tap Boxes are NEMA 3R-rated.

The SPQTB Tap Box is a termination box with a lug-in/lug-out design. Key design features include:

- Rated for 800 A maximum at 600 V maximum
- Generator connection lugs (lug-in) are suitable for use with Type W cable; Standby power disconnect lugs (lug-out) are standard mechanical lugs
- Designed, manufactured and tested to UL 1773 standards
- Lugs are marked for connection sequence (G, N, A, B, C)

The SPQCL Tap Box uses cam-lock receptacles for generator connection. Key design features include:

- Rated for 600 A maximum at 600 V maximum
- Provided with color-coded cam-lock receptacles – male end
- Designed, manufactured and tested to UL 1008 SB standards
- Cam-locks are marked for connection sequence (G, N, A, B, C)



Standby Power Quick-Connect Tap Box

Submetering Integrated Power Center

The Submetering Integrated Power Center (IPC) is an ideal solution for multi-tenant or departmental metering applications. It combines the ability to meter multiple feeder breakers inside a pre-wired enclosure. The Submetering IPC offers significant space and labor savings by replacing individually enclosed, mounted, and wired panels and metering components and providing an integrated solution in one enclosure/lineup including:

- Panelboards
- PowerLogic® E4800 Multi-Circuit Energy Meters and associated CTs
- Surge Suppression
- Factory-installed wiring between components

Submetering IPC width and height dimensions vary depending on the application. All sections are 10.5 in. (266.7 mm) deep.

Typical applications for Submetering IPC equipment include:

- Office towers
- Condominiums
- Apartment buildings
- Shopping centers
- Other multi-user environments
- Configurations with 2-PowerLogic E4800 meters plus Ethernet switch when required based on the number of metered points



Submetering Integrated Power Center

Integrated Power Center 2

The Integrated Power Center 2 (IPC2™) provides maximum design flexibility. In addition to the features found in the Integrated Power Center (IPC), IPC2 lineups are free-standing enclosures that can be front and rear-aligned. IPC2 has the ability to incorporate:

- Panelboards: I-Line, NF, and NQ
- Transformers: 300 Kva (max), EE
 - K-rated and HMT also available; may limit max kVA size of transformer
- Individually-mounted circuit breakers
- Surge Suppression: TVSS integral to panel and/or separately mounted
- Automatic Transfer Switch: Open type 400 A 3-pole maximum including a variety of options
- Lighting Controls: Powerlink® or lighting contactors
- PowerLogic® Monitoring / Metering: power meters, circuit monitors, branch circuit monitoring, and system display meters
- Building Management Systems

As a stand-alone solution, the IPC2 family provides the flexibility to enter and/or exit the section from either the top or bottom. IPC2 is offered in a variety of widths and depths:

- 24–48 in. (610–1219 mm) Wide
- 24–36 in. (610–915 mm) Deep

Typical applications for IPC2 equipment include:

- Schools/Universities
- Office buildings
- Data centers
- Industrial facilities
- Casinos
- Hotels
- Any project with panels and transformers

IPC2 Layout, Lead Time, and Pricing

Contact your nearest field sales office.

IPC2 Shipping

IPC2 lineups are shipped fully-assembled, completely-tested, and ready-to-install. Customers may specify single- or multiple-section shipping splits (some limitations apply). In addition, lineups may be ordered with or without factory-installed power cables.



Integrated Power Center 2



IPC2 Transformer Combo

Integrated Power Center 2 Transformer Combo

For projects having both 480Y/277 V and 208Y/120 V requirements, the Integrated Power Center 2 (IPC2) Transformer Combo is the perfect solution. One of the most popular members of the IPC2 product family, the IPC2 Transformer Combo has been recognized by the industry multiple times for its innovative design.

As a stand-alone solution, the IPC2 Transformer Combo is appropriate when panelboards and transformers are installed in close proximity to each other. It provides the flexibility to enter and/or exit the section from either the top or the bottom. Catalog numbers have been created for some of the more typical configurations (see Table 10.2).

All IPC2 sections can be close-coupled to QED switchboard, MPS, and IPC products. Enclosure options for IPC2 include NEMA 1, NEMA 1 with driphood, and NEMA 3R-rated, and all meet the requirements of UL 891. These sections are also seismically-qualified to meet IBC and ASCE7 requirements.

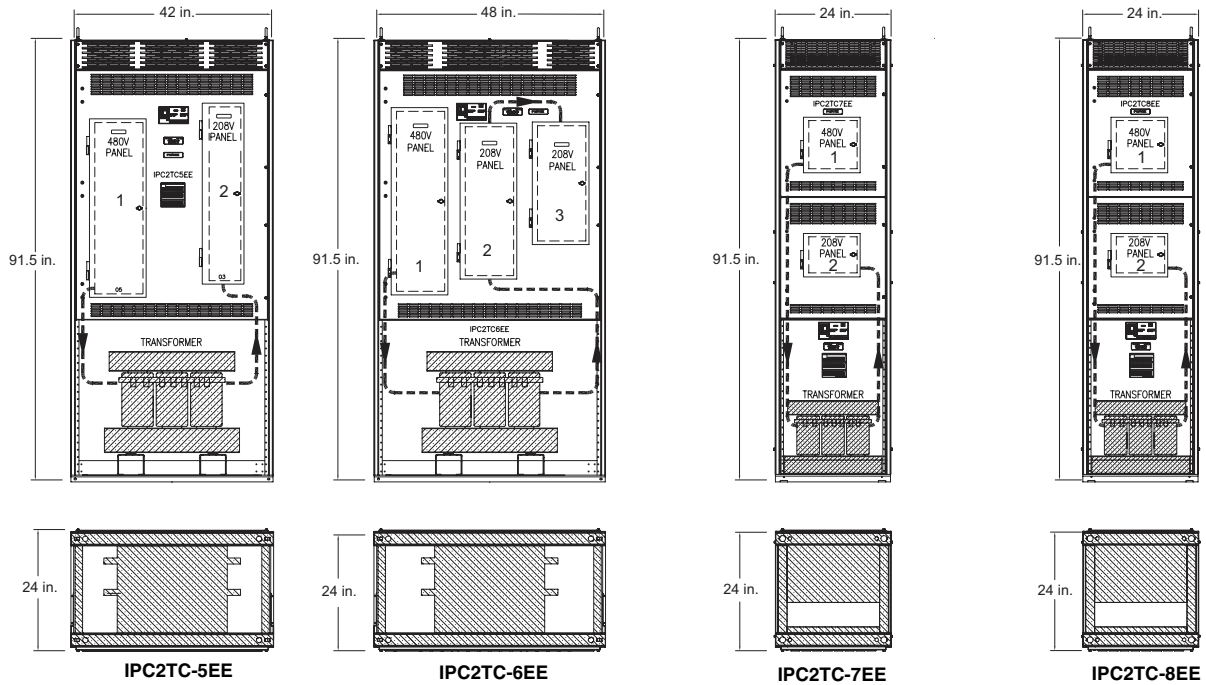
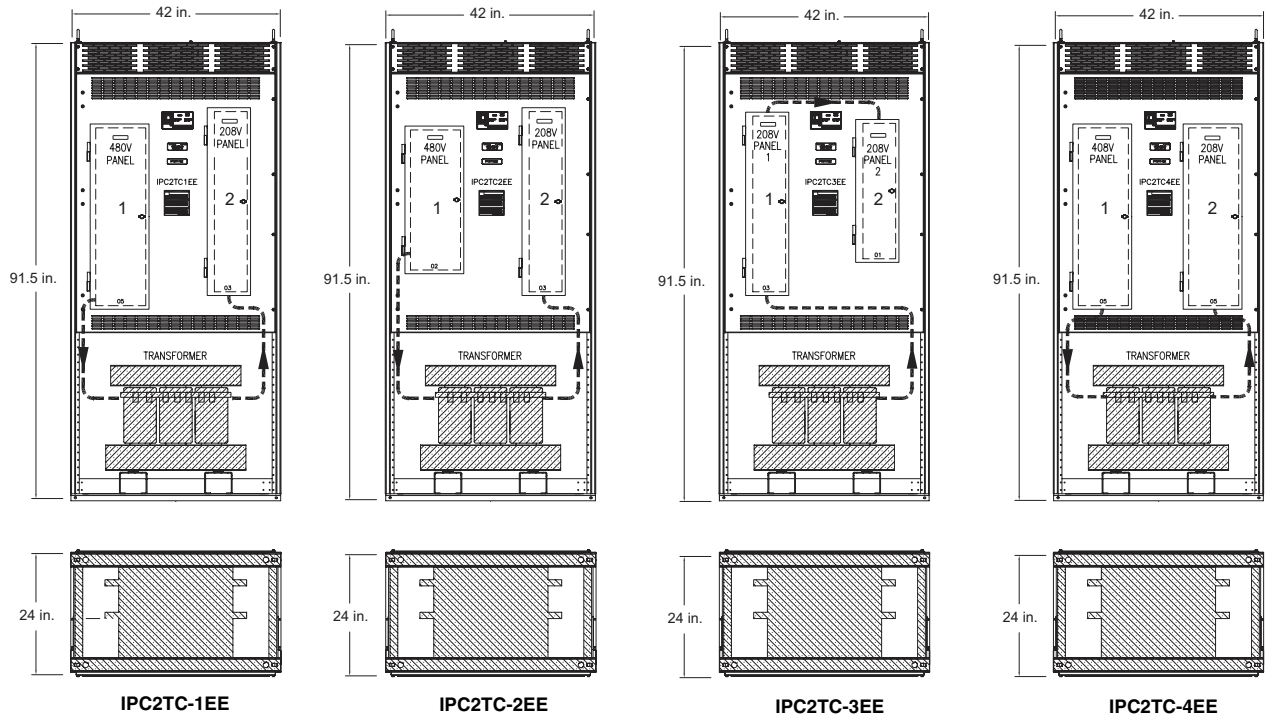
Table 10.2: IPC2 Transformer Combo Merchandise Configuration Specifications

Catalog No. IPC2TC-1EE			
NF Panelboard		NQ Panelboard	Transformer
<ul style="list-style-type: none"> 480Y/277 V 3Ø 4W 225/3 MB 18 k AIC 1-125/3 (Transformer) 39-1PSO Copper Bus / Ground Bus SUSE 		<ul style="list-style-type: none"> 208Y/120 V 3Ø 4W 225/3 MB 10 k AIC 42-1PSO Copper Bus / Ground Bus 	<ul style="list-style-type: none"> 480 V-208Y/120 V 3Ø 75 kVA Energy Efficient transformers in compliance with the 2005 Energy Act 150° C Temp Rise Aluminum Windings 6-2.5% Taps; 2+ 4-
Catalog No. IPC2TC-2EE			
NF Panelboard		NQ Panelboard	Transformer
<ul style="list-style-type: none"> 480Y/277 V 3Ø 4W 400 A MLO 18 k AIC 1-125/3 (Transformer) 39-1PSO Copper Bus / Ground Bus SUSE 		<ul style="list-style-type: none"> 208Y/120 V 3Ø 4W 225/3 MB 10 k AIC 42-1PSO Copper Bus / Ground Bus 	<ul style="list-style-type: none"> 480 V-208Y/120 V 3Ø 75 kVA Energy Efficient transformers in compliance with the 2005 Energy Act 150° C Temp Rise Aluminum Windings 6-2.5% Taps; 2+ 4-
Catalog No. IPC2TC-3EE			
NQ Panelboard		NQ Panelboard	Transformer
<ul style="list-style-type: none"> 208Y/120 V 3Ø 4W 225/3 MB 10 k AIC 42-1PSO Copper Bus / Ground Bus FT Lugs 		<ul style="list-style-type: none"> 208Y/120 V 3Ø 4W 225 A MLO 10 k AIC 42-1PSO Copper Bus / Ground Bus 	<ul style="list-style-type: none"> 480 V-208Y/120 V 3Ø 75 kVA Energy Efficient transformers in compliance with the 2005 Energy Act 150° C Temp Rise Aluminum Windings 6-2.5% Taps; 2+ 4-
Catalog No. IPC2TC-4EE			
NF Panelboard		NQ Panelboard	Transformer
<ul style="list-style-type: none"> 480Y/277 V 3Ø 4W 400 A MLO 18 k AIC 1-175/3 (Transformer) 30-1PSO Copper Bus / Ground Bus SUSE 		<ul style="list-style-type: none"> 208Y/120 V 3Ø 4W 400/3 MB 10 k AIC 42-1PSO Copper Bus / Ground Bus 	<ul style="list-style-type: none"> 480 V-208Y/120 V 3Ø 112½ kVA Energy Efficient transformers in compliance with the 2005 Energy Act 150° C Temp Rise Aluminum Windings 6-2.5% Taps; 2+ 4-
Catalog No. IPC2TC-5EE			
NF Panelboard		NQ Panelboard	Transformer
<ul style="list-style-type: none"> 480Y/277 V 3Ø 4W 400/3 MB 18k AIC 1-125/3 (Transformer) 27-1PSO Copper Bus/Ground Bus SUSE 		<ul style="list-style-type: none"> 208Y/120V 3Ø 4W 225/3 MB 10k AIC 42-1PSO Copper Bus/Ground Bus 	<ul style="list-style-type: none"> 480V-208Y/120V 3Ø 75kVA Energy Efficient transformers in compliance with the 2005 Energy Act 150 °C Temp Rise Aluminum Windings 6-2.5% Taps; 2+ 4-
Catalog No. IPC2TC-6EE			
NF Panelboard	NQ Panelboard	NQ Panelboard	Transformer
<ul style="list-style-type: none"> 480Y/277 V 3Ø 4W 225/3 MB 18 k AIC 1-125/3 (Transformer) 39-1PSO Copper Bus / Ground Bus SUSE 	<ul style="list-style-type: none"> 208Y/120 V 3Ø 4W 225/3 MB 10 k AIC 42-1PSO Copper Bus / Ground Bus FT Lugs 	<ul style="list-style-type: none"> 208Y/120 V 3Ø 4W 225 A MLO 10k AIC 42-1PSO Copper Bus / Ground Bus 	<ul style="list-style-type: none"> 480 V-208Y/120 V 3Ø 75 kVA Energy Efficient transformers in compliance with the 2005 Energy Act 150° C Temp Rise Aluminum Windings 6-2.5% Taps; 2+ 4-
Catalog No. IPC2TC-7EE			
NF Panelboard		NQ Panelboard	Transformer
<ul style="list-style-type: none"> 480Y/277 V 3Ø 4W 125 A MLO 18 k AIC 1-60/3 (Transformer) 15-1PSO Copper Bus / Ground Bus SUSE 		<ul style="list-style-type: none"> 208Y/120 V 3Ø 4W 125/3 MB 10 k AIC 12-1PSO Copper Bus / Ground Bus 	<ul style="list-style-type: none"> 480 V-208Y/120 V 3Ø 45 kVA Energy Efficient transformers in compliance with the 2005 Energy Act 150° C Temp Rise Aluminum Windings 6-2.5% Taps; 2+ 4-
Catalog No. IPC2TC-8EE			
NF Panelboard		NQ Panelboard	Transformer
<ul style="list-style-type: none"> 480Y/277 V 3Ø 4W 125 A MLO 18 k AIC 1-40/3 (Transformer) 15-1PSO Copper Bus / Ground Bus SUSE 		<ul style="list-style-type: none"> 208Y/120 V 3Ø 4W 100/3 MB 10 k AIC 15-1PSO Copper Bus / Ground Bus 	<ul style="list-style-type: none"> 480 V-208Y/120 V 3Ø 30 kVA Energy Efficient transformers in compliance with the 2005 Energy Act 150° C Temp Rise Aluminum Windings 6-2.5% Taps; 2+ 4-

10 INTEGRATED POWER AND CONTROL SOLUTIONS (IPaCS) EQUIPMENT

Integrated Power Center 2 Transformer Combo Standard Merchandise Configurations

The IPC2™ Transformer Combo is available in eight standard merchandise configurations, as shown below (additional configurations are available; contact your nearest field sales office).



NOTE: All sections have both top and bottom conduit entry/exit points.

10 INTEGRATED POWER AND CONTROL SOLUTIONS (IPaCS)