# **Section 15**



Operating Room Isolated Power Panel







IG2000CBM Remote Alarm Indicator

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## Iso-Gard<sup>™</sup> Series 6 Class 4800 / Refer to Catalog 4805CT1301



## **Overview of Isolated Power Panels**

Schneider Electric has been involved in the design and manufacture of isolated power systems since 1944. Our isolated power panels have evolved over the years and will continue to do so to meet the ever-changing needs of the health care industry.

All of our current power panels incorporate single-phase, NQ panelboard interiors that accept plug-on or bolt-on branch circuit breakers. The panels are designed to support up to 16 branch circuits, eight of which are factory-installed. Since the average number of circuits required per panel in an operating room is five, the eight factory-installed branch circuit breakers will meet the majority of applications.

The Iso-Gard<sup>™</sup> Series 6 Line Isolation Monitor (LIM) is readily visible in all layouts, eliminating the need for a composite unit when isolation power panels are installed in operating rooms.

## Iso-Gard<sup>™</sup> Series 6—UL Recognized

The Square D<sup>™</sup> brand, Iso-Gard Series 6, microprocessor-controlled, line isolation monitor (LIM) is included as standard equipment in all Schneider Electric hospital isolation panels. The Iso-Gard Series 6 LIM incorporates automatic and manual self-test and self-calibration to reduce the frequency of required periodic testing. Other features include:

- Digital and analog display
- Unique audible alarm that will not be confused with other equipment
- UL component recognized and CSA classified
- Microprocessor-controlled circuitry for highest accuracy and stability
- Total hazard current factory set to 5 mA; field-capable setting to 2 mA
- Communication to MODBUS via Gateway

The Iso-Gard Series 6 LIM is also available as a replacement unit for older LIMs, is a direct replacement for all previous Schneider Electric LIMs, and is electrically compatible with all hospital isolated power systems. For more details, refer to 4805CT1301 and MED101301xx.

Schneider Electric created the following four upgrade kits to simplify the ordering process. With a single catalog number, you can now purchase all components necessary for the functional replacement of your existing Iso-Gard LIM.

#### Table 15.1: Upgrade Kit Ordering Information

the sum of a	Includes									
Upgrade Kit	Line Isolation Monitor	Mounting Bracket	Converter Box and Wiring Harness	Transformer						
IG6ADKIT	IG6M	IG6CBKTVM	Not applicable	4800XMIA						
IG6BDKIT	IG6M	IG6CBKTVM	4800RA1WMAHA	4800XMIA						
IG6DDKIT	IG6M	IG6CBKTVM	4800RA1WMAHA	Not applicable						
IG6KIT	IG6M	IG6CBKTVM	Not applicable	Not applicable						



Iso—Gard Series 6 LIM

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# **NEC®** Requirement

The National Electrical Code® (NEC®) **requires** audible and visual alarm indication where isolation power is used (NEC 517-160). Schneider Electric offers the IG2000P and IG2000CBM remote alarm indicators for this purpose.

## IG2000P

The Iso-Gard  $^{\rm TM}$  IG2000P remote indicator from Schneider Electric provides remote indication of the visible and audible alarms from a line isolation monitor (LIM).

- Green LED—stays illuminated while the system is in normal condition
- Red hazard LED—illuminates when the Total Hazard Current (THC) exceeds the preset alarm level
- Audible hazard alarm—sounds when the THC exceeds the preset alarm level Mute button with yellow LED—silences the audible alarm on the remote indicator (local muting), or silences all audible alarms in the system (system muting)
- Test button—remotely performs a functional test of the LIM

The IG2000P remote indicator is available mounted in a one- or two-gang stainless steel faceplate for flush mounting into a panel or wall box with a two-inch minimum depth. The basic electrical connection is made using three wires.



# New! IG2000CBM

The Iso-Gard <sup>™</sup> IG2000CBM remote indicator from Schneider Electric provides remote indication of the visible and audible alarms and digital mA reading from an Iso-Gard Series 6 (IG6) line isolation monitor (LIM).

- Green LED-stays illuminated while the system is in normal condition
- Red hazard LED—illuminates when the Total Hazard Current (THC) exceeds the preset alarm level
- Audible hazard alarm—sounds when the THC exceeds the preset alarm level Mute button with yellow LED—silences the audible alarm on the remote indicator (local muting), or silences all audible alarms in the system (system muting)
- · Test button—remotely performs a functional test of the LIM

The IG2000CBM remote indicator is available mounted in a two-gang stainless steel faceplate for flush mounting into a wall box with a two-inch minimum depth. The basic electrical connection is made using four wires.

## Panel Layout Types

Class 4800 / Refer to Catalog 4800CT1201





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## Overview

Isolated power panels provide a small local electrical network that can be monitored from a line isolation monitor (LIM), allowing for predictive ground fault protection instead of reactive.

A typical isolated power system contains:

- · Main disconnect
  - QO circuit breaker (120 V, 208 V, 240 V)
  - H-Frame circuit breaker (277 V, 480 V)
- Isolation Transformer
- Line isolation monitor
- NQ interior
- QO branch circuit breakers
  - Eight factory-installed
  - Space for eight additional
- Ground bus

Multiple layouts are available:

- Standard isolation panels
- Duplex panels
- Dual voltage panels
- Controlled panels

#### **Standard Isolation Panels**

Standard panels offer the most compact solution for a single isolated power system feeding one operating room.

#### 120 V Distribution

- Available in four options: 3, 5, 7.5, or 10 kVA
- Up to 16 branch circuits

### 208 V (240 V) Distribution

- Available in four options: 3, 5, 7.5, or 10 kVA
- One or two branch circuits

#### **Duplex Panels**

Duplex panels offer two isolated power systems in a single panel. The systems are separated from each other by a barrier. Duplex panels provide the ability to mix and match the two systems for kVA and distribution voltage to help the designer maximize wall space while meeting the power requirements of the operating room(s).

#### **Dual Voltage Panels**

Dual voltage panels supply both 120 V and 208 V (240 V) isolated power to an operating room.

- Back box requires a 14-inch-deep wall
- Each panel supplies up to sixteen 120 V circuits, plus two 208 V branch circuits

The standard offering includes the following:

- One 30 A, 208 V circuit for equipment such as a laser receptacle
- One 50 A, 208 V circuit for equipment such as an X-ray receptacle

#### **Controlled Panels**

Controlled panels are designed to provide 208 V (240 V) of isolated power to multiple areas from one central location. Historically, they were used to retrofit operating rooms with 208 V. A programmable logic controller (PLC) lets the panel be designed to feed multiple load location, but only provide power to specific power modules. This helps prevent overloading of the system. Since the PLC limits the number of circuits, only the longest-possible conductor length is taken into account during start-up testing.



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Schneider Electric offers 208 V or 240 V modules designed to complete the control circuit of a controlled power panel.

## **Receptacle Modules for Controlled Panels**

X-ray/laser power receptacle modules provide a convenient source of power for portable X-ray and laser equipment. The receptacle provided in each module is matched to the NEMA plug configuration of the equipment with which it will be used, and is mounted behind the door on the stainless steel face plate. The door features a concealed hinge and a touch latch.



#### **Power/Ground Modules**

When both ground jacks and power receptacles are required, these UL Listed modules offer convenience and save labor in field wiring. The units include four power receptacles, four twist-to-lock ground jacks, and a ground bus with a generous number of lugs for external ground connections.

The main ground connection in the module accommodates up to a #1/0 cable. The units are completely factory wired; only field power connections and ground connections are necessary. They are furnished with Type 304, brushed stainless steel face plates.





4 Locking Receptacles and 4 Ground Jacks

## Hospital Ground Cords and Jacks

Schneider Electric provides hospital-grade devices for the supply and grounding of portable equipment.

- · Hospital ground cords
  - Highly flexible wire with a heavy duty lug or clip end
  - Ground cord with lug end is UL Listed (UL 467)
  - Various lengths available





Ground Cord with Lug End

Hospital ground jacks





**MEDICAL PRODUCTS** 

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## **Standard Panels** Class 4800 / Refer to Catalog 4800CT1201



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## **Medical Isolated Power Panels**

# Table 15.2: 120 V Distribution

Transformer					Interior		Trim Catalog No.		Back Box Catalog No.			
kVA	Primary	Secondary	Catalog No.	LIM Included (field- installed)	Main Disconnect	Circuit Breakers (factory- installed)	Spaces	Catalog No.	Flush	Surface	Flush	Surface
Plug-on Circ	uit Breakers											
3	208 V 240 V	120 V	SXM03BA SXM03CA	lso-Gard Series 6	QOU220	Eight QO220	Eight 2-pole	SIP03BA SIP03CA	ST4526	ST4324	SB432406	SB432406S
5	208 V 240 V 277 V 480 V	120 V	SXM05DA SXM05BA SXM05CA SXM05DA SXM05EA	lso-Gard Series 6	QOU230	Eight QO220	Eight 2-pole	SIP05DA SIP05BA SIP05CA SIP05DA SIP05EA	ST4526	ST4324	SB432406	SB432406S
7.5	208 V 240 V 277 V 480 V	120 V	SXM07BA SXM07CA SXM07DA SXM07EA	lso-Gard Series 6	QOU245 QOU240 HDL26035 HDL26020	Eight QO220	Eight 2-pole	SIP07BA SIP07CA SIP07DA SIP07EA	ST4526	ST4324	SB432408	SB432408S
10	208 V 240 V 277 V 480 V	120 V	SXM10BA SXM10CA SXM10DA SXM10EA	lso-Gard Series 6	QOU260 HDL26045 HDL26030	Eight QO220	Eight 2-pole	SIP10BA SIP10CA SIP10DA SIP10EA	ST4526	ST4324	SB432408	SB432408S

## Table 15.3: 120 V Distribution on Both Sides of the Panel

Transformer					Interior								
	Catalog No.					Left Right							
kVA	Primary	Secondary	Left	Right	LIM Included (field- installed)	Main Disconnect	Circuit Breakers (field- installed)	Spaces	LIM Included (field- installed)	Main Disconnect	Circuit Breakers (field- installed)	Spaces	Catalog No.
Plug-o	n Circuit Bre	akers											
	208 V		SXM03BA	SXM03BA		0011220	Einha	Einht		0011330	E includ	Fisht	SIX03BA03BA
3	240 V	120 V	SXM03CA	SXM03CA	ISO-Gard	QUU220	Eight	2-nole	ISO-Gard	000220	Eight	2-nole	SIX03CA03CA
	277 V	l	SXM03DA	SXM03DA	Series 0	HDL26015	Q0220	2-000	Series 0	HDL26015	Q0220	2-p0i0	SIX03DA03DA
	208 V		SXM05BA	SXM05BA		0011330		Eight		0011230		1	SIX05BA05BA
5	240 V	120.1/	SXM05CA	SXM05CA	Iso-Gard	QUU230	Eight		Iso-Gard	200230	Eight	Eight 2-pole	SIX05CA05CA
э	277 V	120 V	SXM05DA	SXM05DA	Series 6	HDL26025	QO220 2-p	2-pole	Series 6	HDL26025	QO220		SIX05DA05DA
	480 V	l	SXM05EA	SXM05EA		HDL26015				HDL26015			SIX05EA05EA
	208 V	<u> </u>	SXM07BA	SXM07BA		QOU245	I			QOU245		ı — — —	SIX07BA07BA
75	240 V	120.1/	SXM07CA	SXM07CA	Iso-Gard Series 6	QOU240	Eight	Eight	Iso-Gard	QOU240	Eight	Eight	SIX07CA07CA
r.5	277 V	120 V	SXM07DA	SXM07DA		HDL26035	QO220	2-pole	Series 6	HDL26035	QO220	2-pole	SIX07DA07DA
	480 V	l	SXM07EA	SXM07EA		HDL26020				HDL26020			SIX07EA07EA
	208 V	l	SXM10BA	SXM10BA		0011260	]			0011260		1	SIX10BA10BA
10	240 V	120.1/	SXM10CA	SXM10CA	Iso-Gard Series 6	QUU200	Eight	Eight	Iso-Gard	QC0200	Eight	Eight	SIX10CA10CA
10	277 V	120 V	SXM10DA	SXM10DA		HDL26045	QO220	2-pole	Series 6	HDL26045	QO220	2-pole	SIX10DA10DA
	480 V	L	SXM10EA	SXM10EA		HDL26030				HDL26030			SIX10EA10EA
Bolt-or	1 Circuit Brea	kers											
	208 V	ļ i	SXM03BA	SXM03BA	Iso-Cord	0011220	Eight QOB220	Fight	Iso-Cord	0011220	Fight	Fight	SIX03BA03BAB
3	240 V	120 V	SXM03CA	SXM03CA	Series 6	Q00220		2-pole	Series 6	000220	QOB220	2-pole	SIX03CA03CAB
	277 V	l	SXM03DA	SXM03DA	00.000	HDL26015			00.100 0	HDL26015			SIX03DA03DAB
	208 V	ļ i	SXM05BA	SXM05BA	ļ I	0011230	ļ			0011230	ļ	1	SIX05BA05BAB
5	240 V	120 V	SXM05CA	SXM05CA	Iso-Gard Series 6	QC 0200	Eight	Eight	Iso-Gard	QC0200	Eight	Eight	SIX05CA05CAB
ĭ	277 V		SXM05DA	SXM05DA		HDL26025	QOB220	2-pole	Series 6	HDL26025	QOB220	2-pole	SIX05DA05DAB
	480 V	ļ	SXM05EA	SXM05EA	ļ	HDL26015	ļļ		<b>├</b> ────	HDL26015		1	SIX05EA05EAB
	208 V	ļ i	SXM07BA	SXM07BA	ļ I	QOU245	ļ			QOU245	ļ	1	SIX07BA07BAB
7.5	240 V	120 V	SXM07CA	SXM07CA	lso-Gard Series 6	QOU240	Eight	Eight	Iso-Gard	QOU240	Eight	Eight	SIX07CA07CAB
1.5	277 V		SXM07DA	SXM07DA		HDL26035	QOB220	2-pole	Series 6	HDL26035	QOB220	2-pole	SIX07DA07DAB
	480 V		SXM07EA	SXM07EA		HDL26020			<b>↓</b>	HDL26020		1	SIX07EA07EAB
	208 V	ļ i	SXM10BA	SXM10BA	lso-Gard Series 6	0011260	ļ [	u U		QOU260		1	SIX10BA10BAB
10	240 V	120 V	SXM10CA	SXM10CA		000200	Eight	Eight	Iso-Gard		Eight	Eight	SIX10CA10CAB
	277 V		SXM10DA	SXM10DA		HDL26045	QOB220	2-pole	Series 6	HDL26045	QOB220	2-pole	SIX10DA10DAB
	480 V		SXM10EA	SXM10EA		HDL26030	4			HDL26030			SIX10EA10EAB