

ISOLATED POWER CENTERS

- **Applications**
Single phase systems
- **Power Distribution**
Loadcenter available for plug-on or bolt-on circuit breakers
- **Outlet Devices**
Up to 8 gang arrangement of power receptacles and ground jacks
- **Mounting**
Available for flush or surface mounted applications
- **Advanced Technology**
The BENDER LIM2000plus™ series Line Isolation Monitor (LIM) features self-test, self-calibration and optional load monitoring
- **Standards**
UL 1047 - Isolated Power Systems Equipment
- **Warranty**
Industry's first 5 year limited warranty



Introduction

ISOTROL Type IPC Isolated Power Centers have been designed to provide isolated power to electrical circuits installed within operating rooms and other electrically susceptible patient care areas. Designed in strict compliance with Underwriters Laboratories Standards UL1047, UL1022 and UL50, the IPC offers the most current technology for all isolated power distribution requirements.

General

The Type IPC typically includes a single phase transformer, a BENDER Line Isolation Monitor (LIM), a reference ground bus, a primary circuit breaker, branch circuit breakers, Hospital Grade power receptacles and Hospital Grade ground jacks. The maximum number of branch circuit breakers is limited to sixteen (16) plug-on or twelve (12) bolt-on.

Backbox

All backboxes are fabricated from 14GA galvanized steel. Surface mounted enclosures are finished with a coat of hospital ivory, epoxy enamel. Outline drawings shown on the following pages of this brochure provide additional dimensional and construction details.

Front Trim

Manufactured from 14GA Type 304 Stainless Steel with a #4 brushed finish, the front trim contains a door with hidden hinges and a flush mounted key lock that covers the load center. The front trim for flush mounted units extends 1" on all sides of the backbox. For surface mounted units, the front trim shall exactly match the dimensions of the backbox.

Isolation Transformer

Isolation transformers are available with various primary and secondary single phase voltages. The transformer ratings are given on the isolation transformer data sheet found in ISOTROL's full catalog or by request.

Line Isolation Monitor (LIM)

The BENDER LIM2000plus™ series Line Isolation Monitor provides a digital/analog display. The LIM is available in single or three phase models with readout and response values of 2 or 5mA. The LIM2000plus™ has a patented measuring principle and is capable of detecting all combinations of capacitive and resistive faults, including balanced, unbalanced and hybrid faults. A self-test and calibration function is also featured. The LIM2000plus™ series LIM contributes less than 35µA to the Total Hazard Current (THC). Available options include load monitoring and RS485 communication. For further information see the LIM2000plus™ series data sheet.



Line Isolation Monitor
LIM2000plus™

Loadcenter

The loadcenter is an integral part of the IPC. Included is a primary circuit breaker which provides protection for the isolation transformer. All Isolated Power Centers can accommodate either plug-on or bolt-on circuit breakers.

Power Receptacles & Ground Jacks

The Type IPC provides an eight gang section for Hospital Grade power receptacles and Hospital Grade ground jacks. The Hospital Grade power receptacles are available in either straight-blade (single or duplex) or twist-to-lock style. Each gang can accommodate one duplex or single power receptacle and one ground jack or two ground jacks.

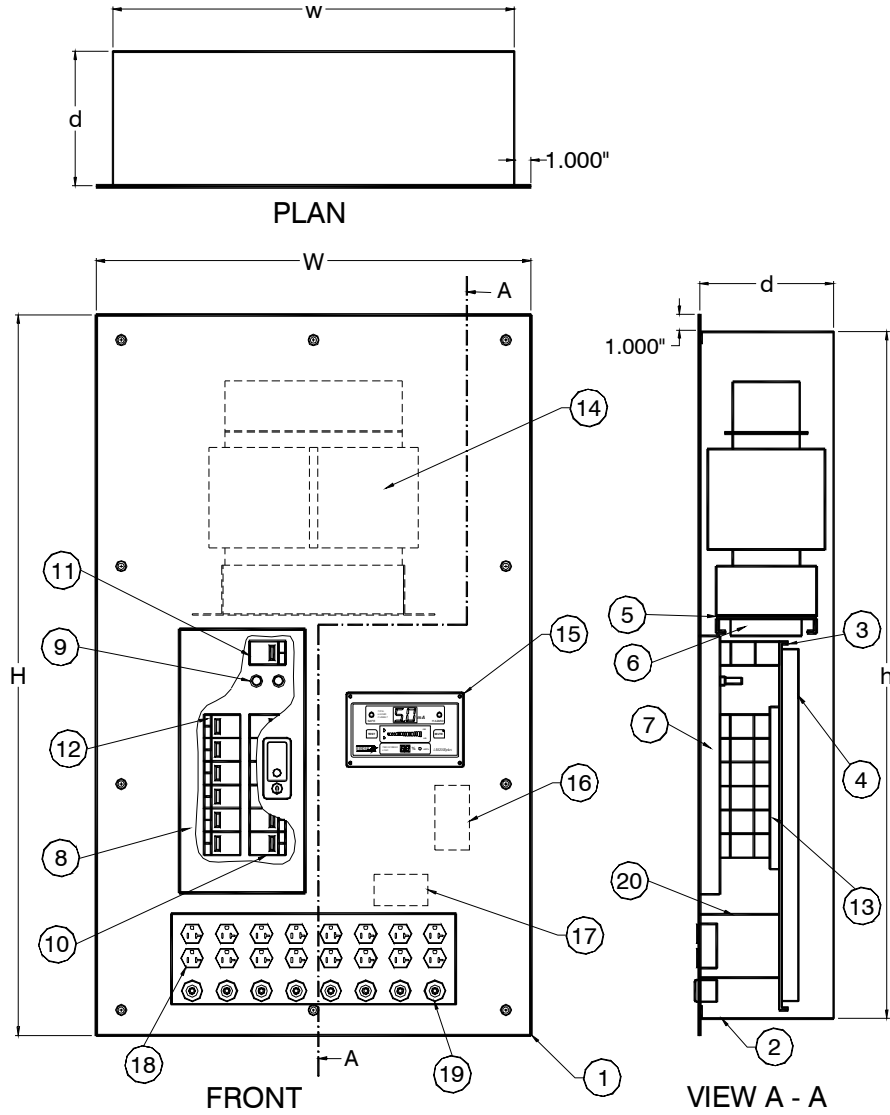
Reference Ground Bus

The Type IPC Isolated Power Center is provided with a twenty (20) point reference ground bus to satisfy equipotential grounding requirements and for connection to master ground modules and ground jacks in patient ground modules and receptacle ground modules. Other ground bus configurations available.

Support and Services

- On-site installation inspection and certification services
- System design assistance provided upon request
- Technical support hotline: (800) 833-6834

Outline Drawing for IPC Single Phase 3 to 10kVA

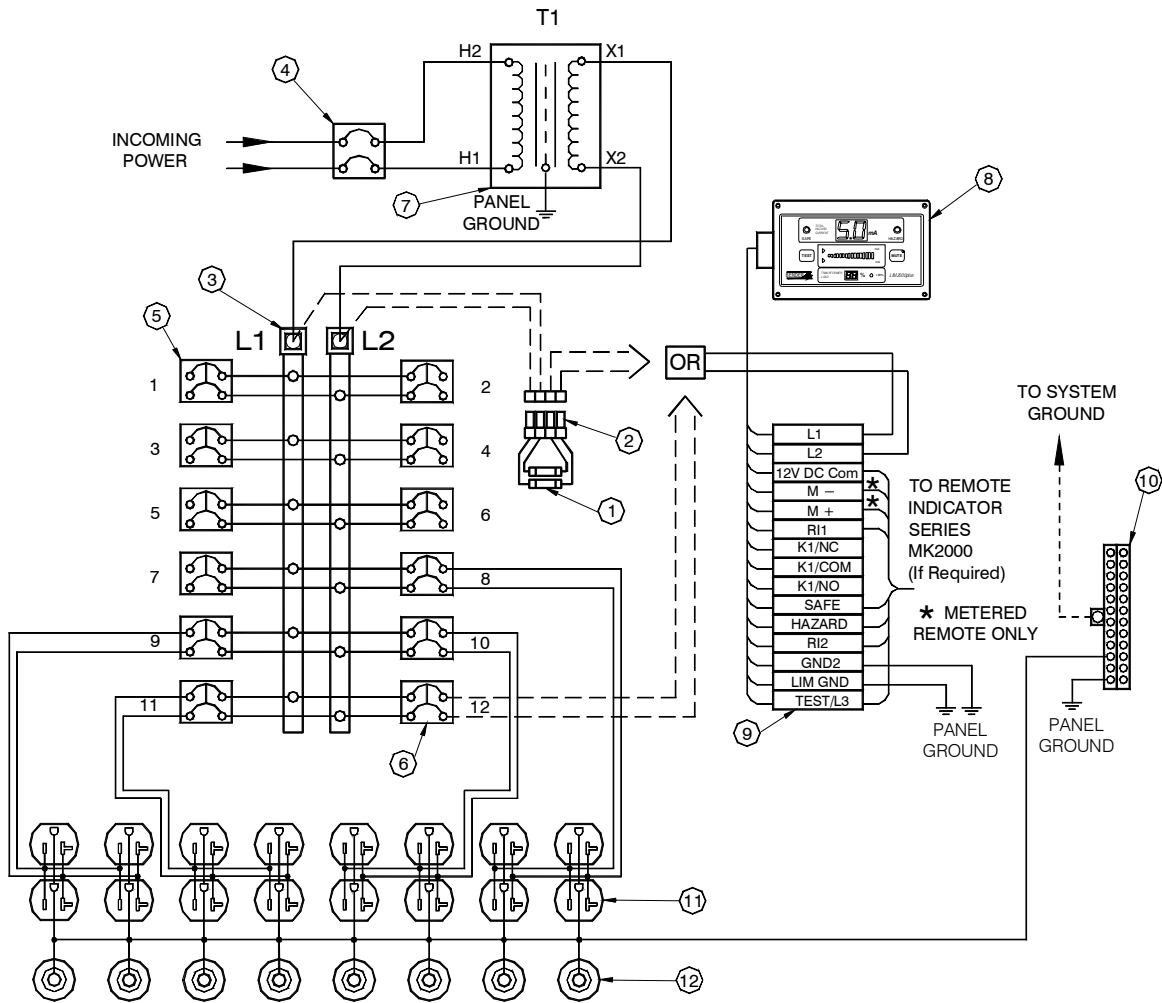


BACKBOX DESIGNATION	TRANSFORMER KVA SIZE	DIMENSION				
		h	w	d	H	W
B	3, 5, 7.5, 10	41"	24"	8"	43"	26"

***CALL FACTORY FOR OTHER CONFIGURATIONS**

- 1 Stainless Steel Front Trim
- 2 Backbox, Galvanized Steel
- 3 Backplate, Galvanized Steel
- 4 Backplate Mounting Bracket
- 5 Transformer Shelf
- 6 Transformer Shelf Mounting Bracket
- 7 Circuit Breaker Deadfront
- 8 Stainless Steel Door w/Lock
- 9 LIM Fuses
- 10 LIM Circuit Breaker, 2P (Optional)
- 11 Main Circuit Breaker, 2P
- 12 Branch Circuit Breaker, 2P
- 13 Loadcenter
- 14 Isolation Transformer, 1Ph
- 15 Line Isolation Monitor, 1Ph
- 16 LIM Connector Plate
- 17 Ground Bus
- 18 Hospital Grade Power Receptacles
- 19 Hospital Grade Ground Jacks
- 20 Receptacle Hat Section

Wiring Diagram for IPC Single Phase 3 to 10kVA



- 1 LIM Fuses
- 2 LIM Fuses Disconnect
- 3 Loadcenter
- 4 Main Circuit Breaker, 2P
- 5 Branch Circuit Breaker, 2P
- 6 LIM Circuit Breaker, 2P (Optional)
- 7 Isolation Transformer, 1Ph
- 8 Line Isolation Monitor (LIM), 1Ph
- 9 LIM Connector Plate
- 10 Ground Bus
- 11 Hospital Grade Power Receptacles
- 12 Hospital Grade Ground Jacks

Selection Guide for Isolated Power Centers (Type IPC)

When selecting the Isolated Power Center for your application, use the Product Code below. If you have any questions or need further assistance, please call us using our toll-free number: (800) 833-6834.

Code A - Basic Designation

IPC: Isolated Power Center

Code B - Transformer Power Rating

3: 3kVA 5: 5kVA 7: 7.5kVA 10: 10kVA X: Special kVA

Code C - Transformer Primary Voltage

A: 120V B: 208V C: 240V D: 277V
E: 480V G: 220V H: 110V X: Special Voltage

Code D - Transformer Secondary Voltage

A: 120V B: 208V C: 240V G: 220V H: 110V X: Special Voltage

Code E - Phase

1: 1 Phase

Code F - Loadcenter Manufacturer and Size

C1: CutlerHammer	10 Positions Bolt-On only	CX: CutlerHammer
	12 Positions Plug-On only	Lug-to-Lug Circuit Breakers (No Loadcenter)
G1: General Electric	14 Positions Plug-On only	GX: General Electric
G2: General Electric	16 Positions Plug-On only	Lug-to-Lug Circuit Breakers (No Loadcenter)
S1: SquareD	12 Positions Plug-On & Bolt-On	SX: Square D
		Lug-to-Lug Circuit Breakers (No Loadcenter)

Code G - Quantity of Branch Circuit Breakers

Code H - Circuit Breaker Type

P: Plug-on B: Bolt-on L: Lug-to-lug

Code I - Number of Circuit Breaker Openings in Deadfront (Must be less than or equal to Loadcenter positions)

Code J - Quantity of Ground Jacks

Maximum of 8 Ground Jacks

Code K - Quantity of Power Receptacles

Maximum of 8 Power receptacles

Code L - Type of Power Receptacle

The designation S1, S2, SM, D1, D2, DM, T1, T2 or TM

		SINGLE		DUPLEX		TWIST-TO-LOCK	
Type		S1	SM	D1	DM	T1	TM
Voltage		125V	OTHER	125V	OTHER	125V	OTHER
Hubbell	Style#	HBL8310R		HBL8300HR		HBL23000HG	
	Color	Red		Red		Black	
NEMA#		5-20R		5-20R		n/a	

- Note:**
- Above receptacles are 2P/3W, 20A, single phase
 - If the IPC contains several types of receptacles, the product code will be expanded by adding multiple blocks of Codes K and L.
 - Other receptacles are available

Code M - Backbox Sizes (Height x Width x Depth)

B: 41" x 24" x 8" X: Special

Code N - Type of Mounting

F: Flush S: Surface

Call the factory for additional equipment or custom requirements

Example for ISOTROL type IPC Product Code

IPC	-	7	B	A	1	-	C1	/	12	P	12	-	4	-	6	D1	-	B	F
Code A		Code B	Code C	Code D	Code E		Code F		Code G	Code H	Code I		Code J		Code K	Code L		Code M	Code N

Suggested Specification for ISOTROL Type IPC Isolated Power Centers

Furnish and install ISOTROL Type IPC Isolated Power Center in the locations shown on the architectural / electrical drawings. The IPC shall be UL Listed and labeled as an assembly. The Type IPC shall consist of the following:

Backbox

Shall be flush or surface mounted as required, and shall be fabricated from 14GA galvanized steel. Surface mounted enclosures shall be finished with a coat of hospital ivory, epoxy enamel.

Front Trim

Shall be fabricated from 14GA Type 304 Stainless Steel with #4 brushed finish. The circuit breaker section shall be accessible from a door, with hidden hinges, that is flush with the front trim. The door shall contain a flush lock that can be opened without a key when unlocked; all IPCs shall be keyed alike. The front trim shall contain a cut out for the Line Isolation Monitor (LIM) which shall remain visible at all times. The front trim for flush mounted units extends 1" on all sides of the backbox. For surface mounted units, the front trim shall exactly match the dimensions of the backbox. The front trim shall be attached to the backbox by a minimum of ten (10) #10-32 x 1" Stainless Steel Oval Head Phillips machine screws and ten (10) #10 Stainless Steel finishing washers.

Isolation Transformer

Shall be single phase, 50Hz or 60Hz, with primary and secondary voltages as indicated on the drawings. The transformer shall be manufactured using class H-rated insulation. It shall have an electrostatic shield between the primary and secondary windings which shall be grounded to the enclosure. The transformer core shall be a stacked design, securely clamped. Core and coil shall be vacuum impregnated, with a final wrap of insulating material. The core and coils shall be isolated from the enclosure by means of isolation mounts. The weight of the transformer shall not be supported by shear connections.

Total leakage current to ground from transformer secondary winding shall be in compliance with UL1047, Tables 30.1 and 30.2. Maximum sound level of transformer: 25dB for 5kVA units or less, 30dB for 7.5kVA units, and 35db for 10kVA units. Temperature rise limited 115 degees C above ambient under full load conditions. Transformer shall be UL Listed or Recognized as a component, for the voltages, amperage, and kVA rating required.

Line Isolation Monitor

Shall be a BENDER LIM2000plus™ series Line Isolation Monitor with a solid state modular assembly utilizing the dynamic principle of constantly monitoring the impedance between each circuit conductor and ground and shall provide visual and audible indications of a first fault condition.

The LIM shall be capable of detecting all combinations of capacitive and resistive faults, including balanced, unbalanced and hybrid faults. The total hazard current shall be set at the factory to either 2 mA or 5 mA, and shall be field adjustable to either milliampere.

The LIM shall contain a continuous display (digital / analog), an audible alarm device which shall sound in the event of a hazard condition, and a visual indication of the system status. A green LED shall indicate "SAFE" status, a red LED shall indicate "HAZARD" status, and an amber LED shall indicate that the audible alarm feature is in the "MUTE" mode. A "TEST" button shall be provided so the functions of the LIM can be tested by hospital personnel. The digital display, indicating LEDs, and "TEST" button shall all be flush with the face of the LIM and shall be protected by a rugged Lexan front foil. Remote indicator connections shall be provided.

The LIM shall contain overload protection with an automatic reset feature. It shall be possible to order the LIM with an optional RS485 communication port and load monitoring. The LIM shall be UL Recognized as a component.

Primary Circuit Breaker

Shall be two-pole sized in accordance with NFPA 70 (NEC) based on the transformer primary voltage and kVA rating as shown on the contract documents, and shall be full size, thermal magnetic type, minimum 10kAIC.

Secondary Branch Breakers

Shall be two-pole, ampacities, and quantities based on the contract drawings. Sized in accordance with NFPA 70 (NEC) and UL1047 Standards. Shall be full size and thermal magnetic type with a minimum 10kAIC.

Reference Ground Bus

Shall contain a minimum of one (1) #4-2/0 main lug and nineteen (19) #14-4 grounding lugs.

Power Receptacles

Shall be UL Listed/Recognized Hospital Grade specification and/or NEMA configuration with ampacity, voltage, color and quantities in accordance with contract drawings.

Ground Jacks

Shall be UL Listed for hospital application as well as green in color and provide in quantities in accordance with the contract drawings.

Specifications and other data subject to change without notice.

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