



PG LifeLink
Experts in Power Safety

ISOLATED POWER SYSTEMS



Isolated Power Panels

Custom Retrofits

Annual Testing

PG LifeLink Isolated Power Systems

Experts in Power Safety

PG LifeLink originated as Post Glover Electrical Systems in 1892. In 1957, the company began producing Isolated Power Panels. In 2004, the Isolated Power products were split off as a stand alone business and named PG Life Link (Post Glover LifeLink).

The PG LifeLink Advantage

Power safety is the foundation of our business. Trust our experts to be your partner from design to installation and experience the PG LifeLink Advantage.

EXPERIENCE

With more than 60 years focused on critical power safety, thousands of hospitals across the world rely on PG LifeLink equipment to protect their patients and employees.

TECHNOLOGY

PG LifeLink has pioneered innovation in the isolated power industry since the beginning. PG Life Link developments include surgical facility panels offered in the 1960's and 1970's and the first duplex and dual voltage panels in the 1990's. In 2018, PG LifeLink's latest innovation is the slimmest Isolated Power Panel in the industry.

ENGINEERED ASSISTANCE

Our engineers work with consulting engineers, contractors and planners to create solutions that fit the unique need of each project. Whether it is for the construction of a new facility, a technically challenging renovation, or a tightly-scheduled custom retrofit, we have the knowledge and experience to complete your project.

RESPONSIVENESS & QUICK DELIVERY

We provide quotations within one day of request and submittals are sent within two days of a purchase order. We typically deliver within three to four weeks after approval of submittal drawings.

FACTORY CERTIFICATION

PG LifeLink's nationwide network of factory trained technicians ensure that all Isolated Power Panels installations comply with NFPA Code 99 requirements.



*1972 Post Glover
Isolated Power Panel*



*Current PG LifeLink
Isolated Power Panel*

All PG Life Link Panels are
**Fully Assembled to Order and 100% Factory
Inspected and Tested**

Isolated Power Panels



PG LifeLink's Isolated Power Panels are designed to provide ungrounded service for a variety of hospital or surgical center applications.

They supply uninterrupted power in the even of one line-to-ground fault, while eliminating the danger of electrical shock. Should a fault occur, the proper alarm sounds but power is maintained to continue using critical equipment.

Our commitment to quality and safety is reflected in the design and components in all of our Isolated Power Panels.

Isolated Power Panels Custom Retrofits



Line Isolation Monitors (LIMs) often fail or become inaccurate and/or unreliable due to age, wear and tear, or damage. Upgrading your outdated or non-functional LIM with a new replacement from PG LifeLink can extend the life of your existing system in cases where the transformers, panelboards, wiring, and other components still have useful service life.

PG LifeLink offers pre-engineered retrofit kits for many popular legacy IPSs to bring your aging system up to date at a minimum of risk and expense.

Isolated Power Field Service & Maintenance



PG LifeLink's Field Service Technicians are qualified on all aspects of Isolated Power Systems including installation, Line Isolation Monitor (LIM) testing, troubleshooting and repair.

Our Technicians are certified to thoroughly inspect and test Isolated Power equipment in accordance with the most recent edition of the NFPA 99 (Health Care Facilities Code) and NFPA 70 (National Electric Code). While on site, our Technicians offer training for clinical and facility maintenance staff on the proper use and maintenance of Isolated Power Systems.

Our New Enhanced Isolated Power Panel Line

Design Improvements

PG LifeLink is now offering an updated family of Enhanced Isolated Power Panels. The new line offers smaller panel sizes for increased space in the operating room as well as design changes built to increase convenience and usability.

New features include:

- All single and duplex panels (up to 10 kVA) are six inches deep*
- All specialty panels (up to 25 kVA) are 12" deep*
- Duplex panel height reduced from 70" to 54"
- Standard door-in-door construction now provided with concealed hinges*
- Top mounted transformers for improved heat management
- Door mounted Line Isolation Monitor (LIM) for ease of access
- Flush mounted door lock
- Eye level Line Isolation Monitor placement, consistent across all models

*Only PG Life Link offers these.



Cleveland Clinic: Cleveland, Ohio

What You Should Know About Isolated Power



Isolated Power Systems (IPS)

- Protect patients and personnel from electric shock in critical care areas
- Maintain the continuity of power in the event of a first line-to-ground fault
- Monitor the cumulative hazard current from all connected equipment

Healthcare Code Requirements for Wet Procedure Locations

“3.3.171 Wet Procedure Locations. The area in a patient care room where a procedure is performed that is normally subject to wet conditions while patients are present, including standing fluids on the floor or drenching of the work area, either of which condition is intimate to the patient or staff.”

NFPA 99 (2015 Edition)

“6.3.2.2.8.4 Operating rooms shall be considered to be a wet procedure location, unless a risk assessment conducted by the health care governing body determines otherwise.”

NFPA 99 (2012 Edition)

“6.3.2.2.8.1* Wet procedure locations shall be provided with special protection against electric shock.” *NFPA 99 (2015 Edition)*

Isolated Power Systems are the preferred form of “special protection” for all Essential Electrical System (EES) circuits supplying wet procedure locations. The Isolated Power System safely limits first-fault ground current without interrupting the supply of power to critical equipment. GFCI protection is not recommended on any critical load that cannot have an interruption of power while in use.

In addition to operating rooms, “wet procedures” are often performed in several other Category 1 (Critical Care) Areas such as: ED, L&D, and EP/Cath Lab.



Salem Hospital: Salem, Oregon

Isolated Power Panels - Standard Features

Quality Components Ensure Quality Products

PG LifeLink's commitment to quality and safety is reflected in the new design. All PG Life Link Isolated Power Panels are assembled in the USA and include the following standard features.



PG LifeLink's Isolated Power Panel Standard Features:

Single-Phase Hospital Grade Isolation Transformer:

- Top mounted hospital grade isolation transformer
- Standard sizes range for 3 to 10 kVA for typical equipment loads and up to 25 kVA for special loads such as portable laser devices
- Low leakage, electrostatically shielded primary and secondary windings
- 220°C Class R Insulation
- Bolted design with anti-vibration mounting bushings for quiet operation
- Designed and built in accordance with UL and CSA Standards
- 60 Hz standard (50 Hz optional)

Mark V Line Isolation Monitor (LIM):

- Continuous hazard current monitoring
- Digital processing with self-test/self-calibration feature
- Door mounted digital Mark V Line Isolation Monitor
- Large, multi-line LCD simultaneously displays all critical system parameters
- Multiple remote annunciator options available
- Optional transformer temperature and load monitoring
- Optional LIM-Connect™ Software and BMS interface



Mark V Line Isolation Monitor (LIM)

Interior Chassis:

- Built to order, fully assembled in the factory, and 100% tested.
- Primary main circuit breaker
- Up to 16 factory installed, two-pole, bolt-on branch circuit breakers with all copper bus panelboard interior
- Customer may specify standard circuit breakers from Eaton, GE, Siemens or Schneider Electric for consistent coordination or to maintain facility standard

Enclosure and Trim:

- Heavy-duty galvanized steel back box designed in 6 or 12 inch depths
- Stainless steel front trim panel with fully concealed hinged, door-in-door construction reduces damage and potential injuries during installation, testing, and maintenance

PG LifeLink Isolated Power equipment is designed, built, and tested in accordance with:

- UL 1047, UL 1022, UL 50, CSA C22.1 Part 1, and CSA C22.2 No. 204
- Seismic Certification: IBC (2012), AC156 (2010), ASCE 7-10



Enhanced Isolated Power Panel Models

Enhanced Model IPP Isolated Power Panel

The Enhanced IPP Isolated Power Panel is the standard panel with an industry leading 6" back box depth and a standard hinged front.

Uses and Installation:

- Typically installed in operating rooms or other wet procedure locations*
- Used to supply electro-medical equipment loads within the patient care vicinity of a single patient/procedure room
- Primary voltages: 480, 380, 277, 240, 230, 220, 208, 120, or 110 VAC, 1-phase
- Secondary voltage: 240, 230, 220, 208, 120, or 110 VAC, 1-phase
- Up to 16 ea. 20A, 2-pole, bolt-on factory installed branch breakers
- Flush mount or surface mounting options available
- Mark V Line Isolation Monitor mounted to hinged front door for easy access

* If panel is not installed inside the patient/procedure room, Code requires that a remote annunciator be installed so that it is "conspicuously visible" in the area served.

Standard Panel Sizing IPP/IPA Panels	
kVA Size	Back Box Size
3	45"H x 24"W x 6"D
5	
7.5	54"H x 24"W x 6"D (6" depth only available from PGLifeLink)
10	



Enhanced Model IPA Isolated Power Center

The Enhanced IPA Isolated Power Center is a standard IPP Panel with all of the new design improvements, incorporating power receptacles and/or twist lock ground jacks on the front of the panel. These units offer a compact solution for providing power connections in a limited space.

Uses and Installation:

Typically installed in ICUs, CCUs, and Trauma/ED.



Enhanced Model IPX Duplex Isolated Power Panel

The Enhanced IPX Duplex Isolated Power Panel contains two separate Isolated Power Systems within one enclosure. The Enhanced IPX simplifies installation, maximizes available space, and provides up to 32 branch circuits to a single room. Internal separation barriers make these panels suitable for distributing both normal and emergency circuits from one location.

Uses and Installation:

- Designed for operating rooms and other wet procedure locations with load requirements exceeding 10kVA, or 16 circuits
- Voltage, breaker, and mounting options same as IPP/IPA
- Secondary voltage output is typically 120V, 208V, 220V, 230V or 240V output on either side is possible
- The dual feed design allows the panel to supply both normal and emergency power within one enclosure

Enhanced Panel Sizing IPX Panels		
kVA Size <i>(Left / Right)</i>		Black Box Size
3	3	54"H x 36"W x 6"D <i>(6" depth only available from PG LifeLink)</i>
5	5	
7.5	7.5	
10	10	

Select above required kVA sizes for each side of system



*PG LifeLink Isolated Power Installation:
Parkland Hospital, Dallas, Texas*

Enhanced Isolated Power Panel Models

Enhanced Model IPD Dual Voltage Isolated Power Panel

The Enhanced IPD Dual Voltage Isolated Power Panel is a single panel allowing a primary feed to power two separate output voltages from a single transformer. This configuration provides up to sixteen 120V, 20A circuits for standard line powered equipment and up to two 208 or 240V, 30 or 50A dedicated circuits for laser equipment.

Uses and Installation:

- Typically installed in operating rooms or other procedure rooms used for dedicated laser procedures
- Provides a cost effective alternative to buying multiple IPP panels for low and high voltage application



Dual Voltage kVA Sizing Example

The kVA of the panel transformer is determined by adding together the kVA of the low volt section (120V) and the high volt section (208 - 240V).

Example: If 15kVA will be required for high volt section (208 - 240V) and 10 kVA for the low volt section (120V), the overall size is 25 kVA.



PG LifeLink Isolated Power Installation:
Salem Hospital, Salem, OR

Enhanced Panel Sizing IPD Panels		
kVA Size		Back Box Size
208 – 240V	120V	
10	5	54"H x 30"W x 12"D (12" depth only available from PG LifeLink)
10	7.5	
10	10	
15	7.5	
15	10	

Select from available kVA combinations for high and low voltages
(ex. 10kVA @ 208V high-side and 7.5kVA @ 120V low-side)

Enhanced Isolated Power Panel Models

Enhanced Model IPL Laser Isolated Power Panel

The Enhanced IPL Laser Isolated Power Panel is designed to supply remote Laser Outlet Modules located in multiple procedure rooms from a single, centrally located panel. This is a cost effective way to provide high voltage output to multiple locations from a single panel.

Up to 12 outlets can be connected to the Enhanced IPL Panel. The number of energized outlets operated simultaneously is determined by the transformer capacity and the distance of outlet locations from the panel. Standard configuration includes a Programmable Logic Controller (PLC) system. This system protects against accidental overload and allows power to be selectively provided to the location needed.

Uses and Installation:

- Used exclusively for high voltage (208-240V) circuits distributed among multiple areas
- Supplies up to 12 ea. 208V, 220V, 230V, 240V, 30-50A, 1-phase circuits
- Optional “In-Use” light control circuits are also available

Enhanced Panel Sizing IPL Laser/X-ray Panels	
kVA Size	Back Box Size
15	54"H x 30"W x 12"D <i>(12" depth or over 15kVA transformer size only available from PG LifeLink)</i>
25	



Remote Outlet Modules:

- Laser Outlet Module DLO-R includes a user specified NEMA receptacle, LIM Remote Annunciator, galvanized back box, and a stainless steel front trim with hinged door over the laser receptacle
- Model RLO-R Outlet Module includes a DRA-1 Remote Annunciator which contains basic audible and visual alarm indication along with a silence feature
- Outlet is energized by opening the receptacle cover, activating the contact switch, and signaling the panel PLC to power the circuit
- Once energized, the circuit is locked on until the device is disconnected and the cover is closed
- Multiple laser outlet configurations available
- Optional user specified outlet modules are available. Requires separate remote annunciator.

Laser Outlet Modules



DLO-R

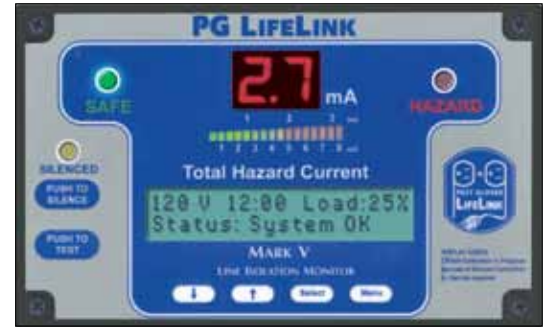


RLO-R

Isolated Power - Line Isolation Monitors

Mark V LIM – Line Isolation Monitors

The Mark V is an easy to use, digital Line Isolation Monitor (LIM) designed to continuously monitor the Total Hazard Current (THC) of an Isolated Power System. This unit provides both visual and audible alarm signals to alert medical staff of the presence of a line to ground fault on connected equipment. System status and operating parameters are prominently displayed on a large LCD screen. The intuitive user interface menu provides convenient access to view alarm and event logs as well as configuration of user settings.



Operating Specifications

- Operating voltage: 120 or 208/240 VAC (field selectable)
- Operating frequency: 50/60 Hz
- Nominal power consumption: 10 VA
- Accuracy: $\pm 5\%$ of full scale (@ 5mA THC)
- THC Alarm Level (field selectable) at 4.8 or 1.9mA (Canadian standard)
- Monitor Hazard Current (MHC):
 - 25 μ A max. @ 120 V
 - 50 μ A max. @ 208/240 V

Features:

- Continuous monitoring of system hazard current
- Self-testing/calibrating at user preferred schedule
- Onboard alarm and event logs with time and date stamp
- Optional system load monitor and transformer over-temperature alarm
- Optional LIM-Connect™ remote monitoring software interface
- Compatible with most Building Management Systems (BMS)*

*Contact PG LifeLink for details

Upgrade Outdated LIMs With the Newest Technology

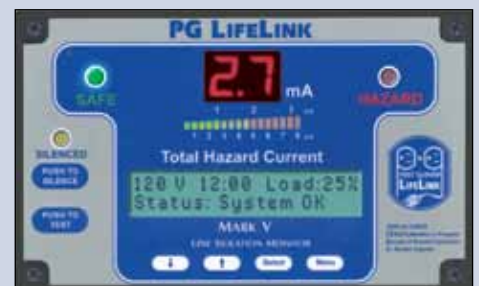
Retrofit kits available to replace older generation analog Line Isolation Monitors (LIMs)

See page 12 for more details

Before



After



Isolated Power - Line Isolation Monitors

LIM-Connect™ Software

LIM-Connect™ Software remotely monitors and controls every Line Isolation Monitor in your facility from a designated PC. LIM-Connect™ provides a solution for alarm notification, managing, and collecting historical data throughout your facility's entire Isolated Power System installation.

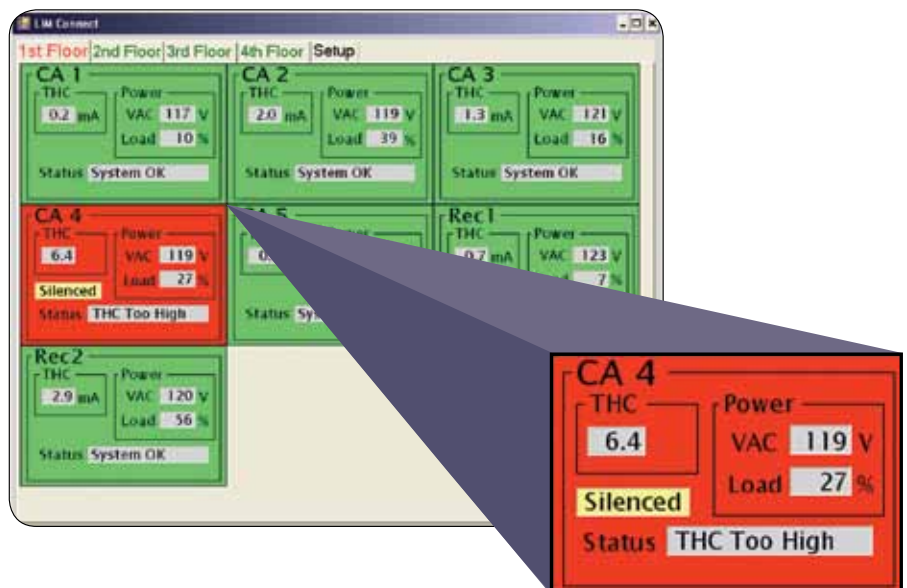
Features

- View status of multiple LIMs in summary mode
- Select individual icon to utilize all LIM functions remotely, without entering the sterile environment
- Receive immediate alarm notification via audible and on-screen cues
- Can be configured for automatic synchronization of LIM date/time and downloading of event logs to any network storage location
- Data is communicated over a facility's existing wired Ethernet network, or on its own separate "private" network segment (Optional wireless capabilities available)



Installation Requirements

- Microsoft Windows 7, running Microsoft .NET Framework
- Mark V Line Isolation Monitor with LIM-Connect™ communication interface module
- Valid email address and local network administrator rights



Isolated Power - Accessories

Remote Annunciators

PG LifeLink offers Remote Annunciators for installation anywhere remote monitoring is desired. In applications where an Isolated Power Panel is installed outside the patient/procedure room, NFPA Code requires a remote annunciator to be “conspicuously visible” inside the area served. In locations such as the ICU where attending personnel may not be immediately present, it is recommended to install a Remote Annunciator at a designated nearby nurses station.

Individual Remote Annunciators:

- **Model DRA-VS** – Provides complete functionality and interface the of Mark V LIM. Includes alarm indication as well as real-time Total Hazard Current (THC), silence feature and system status display. Also provides remote access to system logs, configuration settings, and error codes.
- **Model DRA-1V** – Provides similar indication and functionality as found on the front of the Mark V LIM. Includes alarm indication as well as THC display, silence, and self-test functions.
- **Model DRA-1** – Basic remote unit providing audible and visual alarm indication with alarm silencing capability.

Note: Consult individual product specifications for application and wiring limitations associated with remote annunciators



Model DRA-VS



Model DRA-1V



Model DRA-1

Master Remote Annunciators:

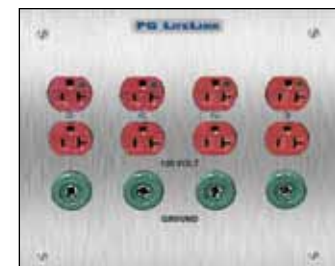
- **Model DMRA** – Master Remote Annunciator panel combines multiple remote units from up to 24 separate Line Isolation Monitors, offering the ability to monitor multiple Isolated Power Panels from a central location such as a nurses station or facilities maintenance office
- Standard DMRA panels range from 2-24ea. DRA-1 type annunciators
- Configurations incorporating the DRA-VS and DRA-1V remotes are also available



Example Model DMRA-8 with DRA-1 (back-box and trim included)

Power and Ground Modules

- **Model RRP** – Remote Receptacle Panel modules incorporate NEMA 5-20R, Hospital Grade receptacle outlets, and/or 10A Hospital Grade twist-lock ground jacks onto a stainless steel front trim plate. A galvanized steel back box with internal ground bus is also included on most units
- **Model GJB** – Ground Junction Box modules include a box mounted reference ground bus with blank stainless steel trim. Typically wall-mounted in the operating room, this module provides convenient access for testing equi-potential grounding system
- **Model GJP** – Ground Jack Panel modules include up to eight 30A Hospital Grade twist-lock ground jacks, and is designed to be installed in standard-gang electrical boxes
- **Model GC** – Ground Cord assemblies to be used in conjunction with RRP and GJP modules for proper bonding and elimination of touch-currents on portable carts and equipment



Model RRP-4D4

Standard Isolated Power Panel Models

PG LifeLink's Standard Isolated Power Panels offer the same performance as our Enhanced Panels and are an excellent choice for those needing to match an existing installation where panel depth and size are not a concern.

Standard Model IDP and Standard Model IDC Isolated Power Panels



IDP



IDC

The **Standard IDP Isolated Power Panel** is the industry standard, multi-purpose Isolated Power Panel for many requirements. The IDP is usually installed in hospital operating rooms or other wet procedure locations. The IDP Panel is typically designed to supply 120V power to the circuits within a single patient/procedure room.

The **Standard IDC Isolated Power Panel** is the Standard IDP incorporating power receptacles and/or twist lock ground jacks on the front panel. These units offer a compact solution for providing power connections in a limited space.

Standard Panel Sizing IDP/IDC Panels	
kVA Size	Back Box Size
3	54"H x 22"W x 6"D
5	54"H x 22"W x 6"D
7.5	60"H x 25"W x 8"D
10	60"H x 25"W x 8"D

Standard Model DIDP Duplex Isolated Power Panel



The Standard Duplex DIDP Isolated Power Supply System contains two independent Isolated Power Systems within one enclosure which simplifies installation, maximizes available space, and provides up to 32 branch circuits to a single room.

Standard Panel Sizing DIDP Panels		
kVA Size (Left / Right)		Back Box Size
3	3	70"H x 35"W x 8"
5	5	
7.5	7.5	
10	10	

Select from available kVA sizes for each side of system

Standard Model XTLD Dual Voltage Isolated Power



The Standard XTLD Dual Voltage Isolated Power Panel is a single panel allowing a primary feed to drive two separate output voltages from a single transformer.

Standard Panel Sizing XTLD Panels		
kVA Size		Back Box Size
208/240V	120V	
10	5	70"H x 30"W x 12"D
10	7.5	70"H x 30"W x 14"D
10	10	
15	7.5	
15	10	

Select from available kVA combinations for high and low voltages (ex. 10kVA @ 208V high-side & 7.5kVA @ 120V low-side)

Standard Model XTL Laser Isolated Power Panel



The Standard XTL Isolated Power Panel is designed to deliver power to remote Laser Outlet Modules placed in multiple procedure rooms from a single, centrally located panel.

Standard Panel Sizing XTL Laser Panels	
kVA Size	Back Box Size
15	70"H x 30"W x 12"D
25	70"H x 30"W x 14"D

Isolated Power - Field Retrofits

Line Isolation Monitor (LIM) Retrofit Kits

Upgrading your outdated Line Isolation Monitor with a new replacement from PG LifeLink can extend the life of your existing system and ensure compliance with NFPA 99 testing requirements. PG LifeLink offers complete retrofit kits to bring any system up to date. Our trained technicians can perform the installation and recertify the system during the same visit.

Benefits:

- Older generation analog LIMs are no longer serviceable due to component obsolescence
- Updating obsolete analog LIMs to the latest digital technology eliminates required monthly testing per NFPA 99 (2012) Section 6.3.4.1.4
- With the self-test/calibration feature offered on the Mark V LIM your facility will only require testing once a year
- Reduce total cost of ownership and lower maintenance expenses



Analog LIM



Digital LIM

Included in typical LIM Retrofit Kit:

- New Mark V Line Isolation Monitor (LIM)
- Replacement wiring harness
- Replacement mounting bracket(s) and trim
- Operation manual with wiring diagram
- New remote annunciator (if applicable)

Note: All retrofit applications are unique and dependent on current installed conditions. Consult PG LifeLink's experienced application specialists for assistance to determining the best solution for your facility.

Retrofit Kits	
Available for ALL manufactures and brands	
<ul style="list-style-type: none">• Amsco• Auth• Bender/Isotrol• CES• Edwards• Electromagnetic Industries (EMI)• Federal Pacific• Federal Pioneer General Electric	<ul style="list-style-type: none">• Hevi-Duty• Hospital Systems• Isolation Systems Limited• Jefferson• Russell Stoll• Sorgel• Square D / Schneider• Stackpole Limited
<i>Pre-configured Retrofit Kits are immediately available for PG LifeLink Mark III LIMs. Contact us for details.</i>	

Custom Design Replacement Interiors (for Existing Back Boxes)

PG LifeLink offers custom design services for complete interior upgrade of existing systems without demolishing the walls or ceiling, saving you time and construction costs.

**Contact our design team today for more information:
800-287-4123.**

Installation, Testing, Troubleshooting, and Repair of Isolated Power Systems

PG LifeLink's qualified field service technicians are specifically trained on all aspects of Isolated Power Systems including installation, testing, troubleshooting, and repair. They can also provide on-site training for clinical and facility maintenance staff on proper use and maintenance.

Factory Start-Up Commissioning Test and Inspection

NFPA 99 requires all newly installed Isolated Power Panels to be thoroughly tested prior to first use. Recertification testing is required upon any repair or renovation to the system.

- On-site start-up testing and inspection (FCO) by a factory trained technician is included with all new equipment orders
- A user training session is included at the time of testing
- A final test report and log book is provided

Note: Any PG LifeLink equipment not commissioned by a PG LifeLink Technician is not covered by manufacturer warranty.



Annual Field Testing and Inspection

PG LifeLink offers Annual Testing Contracts (ATC) for all facilities using Isolated Power. NFPA 99 requires documented testing of all Isolated Power Panels at least once a year.

- PG LifeLink technicians will perform a thorough set of tests and inspections including: system leakage and ground impedance measurement, receptacle ground connection integrity check, and verification of LIM alarm point using special fault simulator
- A final test report listing all annual test results is provided to owner (suitable for demonstrating compliance to CMS/Joint Commission surveyors)
- Recommended repairs or upgrades identified during testing are documented
- PG LifeLink technicians are trained and qualified to test all brands and models of Isolated Power Systems
- PG LifeLink brand panels tested under a renewable Annual Testing Contract may be eligible for a free warranty extension*

** Consult PG LifeLink Service Department for more information on eligibility and terms of extended warranty*

PG LifeLink Engineers and service experts will provide consultation and custom design services to meet any facility's needs. **Contact us to learn more: 800-287-4123.**



PG LifeLink
Experts in Power Safety

The PG LifeLink Quality Commitment

"Through continual improvement, we strive to meet the needs of our customers by delivering the right product at the right time, first time, everytime."



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