

HEALTHCARE / MEDICAL SOLUTIONS



Healthcare/Medical Solutions

Tripp Lite manufactures power protection, power supply and regulatory compliance solutions for use in hospitals and other healthcare facilities worldwide. Medical-grade UPS systems, isolation transformers, mobile power solutions, power strips and surge protectors support a wide range of equipment and applications both inside and outside patient care areas.

- 120V and 230V Solutions
- Regulatory Compliance/Patient Safety Solutions (UL/IEC 60601-1, UL 1363A and More)
- OEM Integration



Medical-Grade UPS Systems and Isolation Transformers

**UL/IEC 60601-1 and UL 1778
or 1012 Compliant**

- Approved for Use in Patient Care Areas
- Provide Compliance for Connected Equipment
- Reduce Cumulative Shock Potential to Less than 100µA (Full Isolation)
- Protect Against Equipment Damage, Downtime and Data Loss

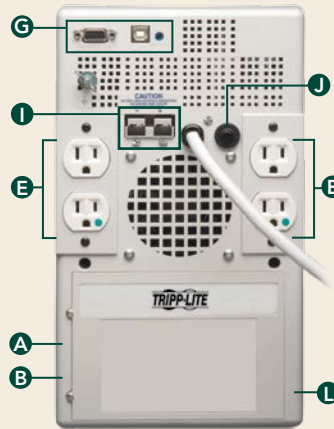
Medical-grade UPS systems and isolation transformers provide medical-grade regulatory compliance for connected equipment. All models include built-in Faraday shielding that provides full line isolation and reduces the cumulative leakage current of connected equipment to less than 100µA for optimal safety in patient care areas. Full isolation also provides continuous noise filtering and enhanced common mode surge protection.

In addition to full isolation, medical-grade UPS systems provide battery backup during blackouts, allowing connected equipment to continue operating without interruption. UPS systems also improve generator backup by supporting equipment during the lag between power outages and generator startup. UPS systems automatically switch between utility power and battery backup in 2 to 4 ms, which is well within the fault tolerances of sensitive computer equipment. Automatic voltage regulation (AVR) keeps equipment working through voltages sags (brownouts) or high voltages indefinitely, without draining battery power. All models protect connected equipment against damaging surges and disruptive EMI/RFI line noise. SMART2500XLHG also provides pure sine wave output from battery.

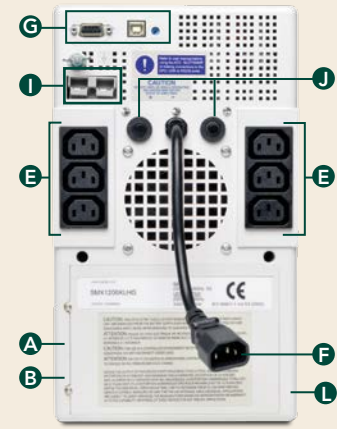
Medical-grade isolation transformers are ideal for equipment that does not require battery backup but does require reduced leakage current and medical-grade regulatory compliance. Isolation transformers also protect connected equipment against damaging surges and disruptive EMI/RFI line noise.



FEATURES



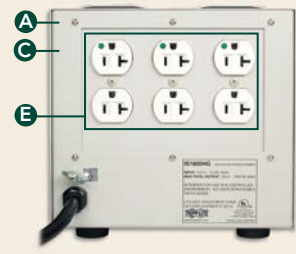
SMART1200XLHG UPS System (back)



SMX1200XLHG UPS System (back)



IS1800HG Isolation Transformer (front and back)



- A** UL/IEC 60601-1 Compliance (internal)
- B** Leakage Current Reduction, Battery Backup, Automatic Voltage Regulation (AVR), Full Isolation, Surge/Noise Protection and Electrostatic Discharge (ESD) Resistance (internal)
- C** Leakage Current Reduction, Full Isolation, Surge/Noise Protection and Electrostatic Discharge (ESD) Resistance (internal)
- D** Hospital-Grade AC Input Plug **E** Hospital-Grade AC Outlets
- F** AC Inlet **G** Communication Ports
- H** Tel/Modem Surge Protection (OMNISMART350HG and OMNIX350HG only)
- I** External Battery Connector ("XLHG" models only)
- J** Circuit Breaker **K** Metal Housing **L** Polycarbonate Housing
- M** Diagnostic LEDs (UPS models only)

Model	Output Capacity	Nominal AC Voltage	UL/IEC Compliance	Typical Backup Runtime (Half/Full Load) ⁽¹⁾	Hospital-Grade AC Outlets	Communication Ports ⁽²⁾	AC Input Cord Length	AC Input Plug or Inlet
Medical-Grade UPS Systems (For use inside and outside patient care areas.)								
SMART2500XLHG	2,200 VA/1,920 W	120 V	UL 60601-1 and 1778	13/4 min. +	4 (5-15/20R HG), 4 (C13)	Serial, USB, EPO	6 ft. ⁽³⁾	5-20P/C20 ⁽⁴⁾
SMART1200XLHG	1,000 VA/750 W	120 V	UL 60601-1 and 1778	28/10 min. +	4 (5-15R HG)	Serial and USB	6 ft.	5-15P HG
SMART700HG	700 VA/450 W	120 V	UL 60601-1 and 1778	42/18 min.	4 (5-15R HG)	Serial and USB	6 ft.	5-15P HG
OMNISMART350HG	330 VA/225 W	120 V	UL 60601-1 and 1778	46/18 min.	4 (5-15R HG)	Serial	6 ft.	5-15P HG
SMX1200XLHG	1,000 VA/750 W	230 V	IEC 60601-1	27.5/11 min. +	6 (C13)	Serial and USB	6 in.	C14 ⁽⁴⁾
SMX700HG	700 VA/450 W	230 V	IEC 60601-1	36/14.5 min.	6 (C13)	Serial and USB	6 in.	C14 ⁽⁴⁾
OMNIX350HG	350 VA/225 W	230 V	IEC 60601-1	37/15.5 min.	6 (C13)	USB	6 in.	C14 ⁽⁴⁾
Medical-Grade Isolation Transformers (For use inside and outside patient care areas.)								
IS1800HG	1,800 W	120 V	UL 60601-1 and 1012	—	6 (5-15/20R HG)	—	6 ft.	5-20P HG
IS1000HG	1,000 W	120 V	UL 60601-1 and 1012	—	4 (5-15R HG)	—	6 ft.	5-15P HG
IS500HG	500 W	120 V	UL 60601-1 and 1012	—	4 (5-15R HG)	—	6 ft.	5-15P HG
IS250HG	250 W	120 V	UL 60601-1 and 1012	—	2 (5-15R HG)	—	6 ft.	5-15P HG

Certifications vary by model. Go to www.tripp-lite.com for more information, including weights, dimensions and updates. ⁽¹⁾ Backup runtimes vary with load, battery condition and other factors. Increase runtimes for "XLHG" models by connecting optional external battery packs. SMART2500XLHG uses BP48V24-2U, BP48V27-2US or BP48V60RT-3U. SMX1200XLHG and SMART1200XLHG use BP36V15-2U, BP36V27-2US or BP36V42-3U. ⁽²⁾ Serial ports are RS-232/DB9. USB and serial ports work with PowerAlert software (free download) or compatible third-party software. SMART2500XLHG has an accessory slot that supports Tripp Lite's optional SNMPWEBCARD. SNMPWEBCARD provides a network interface for remote management via SNMP, Web, SSH or telnet. ⁽³⁾ Detachable 6 ft. AC input cord with 5-20P plug connects to C20 inlet with locking clamp. ⁽⁴⁾ Connects to a user-supplied AC input cord and plug compatible with the facility's wall outlets.

Medical-Grade Power Strips

**UL 60601-1, 60950-1
and 1363A Compliant**

- Approved for Use in Patient Care Areas
- Reduce Shock Potential of Connected Equipment
- Provide Power Distribution
- Include Hospital-Grade Plug and Outlets

Tripp Lite's PS-415-HGULTRA is the first power strip with full UL 60601-1 compliance. Anywhere outlets and space are limited, PS-415-HGULTRA provides safe, convenient AC power in a durable metal housing. Multiple hospital-grade outlets permit additional equipment to be operated in locations that do not have additional wall outlets available, including inside patient care areas.

A patented protection circuit guards against shock hazards by preventing power from reaching the unit's outlets in the presence of a fault. This protection circuit automatically resets itself and restores power once the fault threat is gone. With a switchless design that prevents accidental shutoff, built-in outlet safety covers and a 15 ft. power cord, PS-415-HGULTRA is the perfect replacement for all non-compliant power strips.

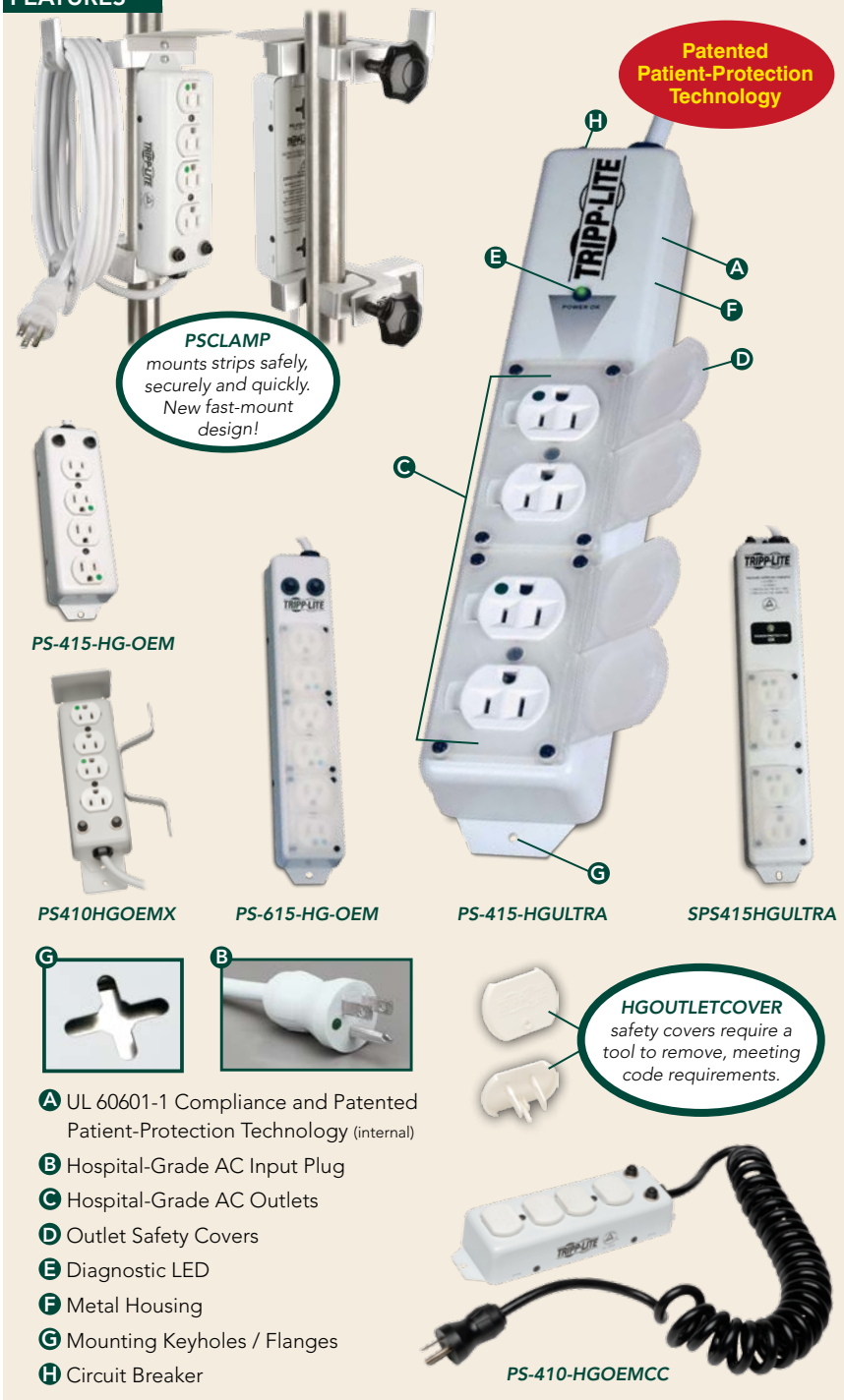
OEM-series power strips are designed to be permanently mounted to carts, IV poles, racks, tables, pedestals and similar equipment in order to supply power to the plug-connected components of movable medical equipment assemblies. Equipped with long power cords and multiple hospital-grade outlets, OEM-series power strips provide versatile power distribution inside and outside patient care areas. (OEM-series power strips must be permanently mounted to a movable device – such as a cart, pole or bed – when used inside patient care areas. They cannot be placed on the floor.)



UL 60601-1
UL 60950-1*
UL 1363A

*Regulates the use of electrical and IT equipment in medical environments.

FEATURES



Model	Nominal AC Voltage	UL Compliance	Surge Protection Rating	Hospital-Grade AC Outlets	AC Input Cord Length	AC Input Plug Type
Medical-Grade Power Strips (For use inside and outside patient care areas.)						
PS-415-HGULTRA	120V	UL 60601-1 and 60950-1	–	4 (5-15R HG) ⁽¹⁾	15 ft.	5-15P HG
SPS415HGULTRA	120V	UL 60601-1 and 60950-1	1,410 joules	4 (5-15R HG) ⁽¹⁾	15 ft.	5-15P HG
OEM-Series Medical-Grade Power Strips (For use inside and outside patient care areas. Must be permanently mounted inside patient care areas.)						
PS-615-HG-OEM	120V	UL 1363A	–	6 (5-15R HG) ⁽¹⁾	15 ft.	5-15P HG
PS-415-HG-OEM	120V	UL 1363A	–	4 (5-15R HG)	15 ft.	5-15P HG
PS-402-HG-OEM	120V	UL 1363A	–	4 (5-15R HG)	2 ft.	5-15P HG
PS-410-HGOEMCC	120V	UL 1363A	–	4 (5-15R HG) ⁽²⁾	3 to 10 ft. (Coiled Cord)	5-15P HG
PS410HGOEMX	120 V	UL 1363A	–	4 (5-15R HG)	10 ft.	5-15P HG
Mounting Accessories (For use inside and outside patient care areas.)						
HGOUTLETCOVER	Pack of 4 reusable, self-locking HG outlet safety covers. Covers block outlet access and require a tool to remove, meeting code requirements.					
PSCLAMP	Power strip mounting clamp for IV poles, beds, carts, etc. Adjusts to fit diameters from 1 to 2.25 in. Includes removable drip shield and cord manager.					

Certifications vary by model. (1) Includes integrated outlet safety covers. (2) Includes 4 reusable, self-locking HG outlet safety covers. Go to www.tripplite.com for more information, including weights, dimensions and updates.

Medical-Grade Power for Mobile Carts and Telemedicine

UL/IEC 60601-1 and UL 1778 Compliant

- Approved for Use in Patient Care Areas
- Provide Compliance for Connected Equipment
- Reduce Cumulative Shock Potential to Less than 100µA (Full Isolation)



Mobile power retrofit kits upgrade new or existing mobile medical carts for a fraction of the cost of buying new powered carts, providing medical-grade compliance for connected equipment. They can also be used as telemedicine power systems.

The user-replaceable battery provides up to 12 hours of mobile power. When the power module is plugged into a wall outlet, it quickly recharges the battery for faster cart rotation between shifts. Included PowerAlert® software prevents computer data loss if battery power runs out before recharging. The retrofit kit is compatible with most popular carts by AFC, Anthro, Datalux, Ergotron, GCX, Hergo, Infologix, Jaco, Pryor, Tremont and others.

For information about OEM solutions, contact medical@tripplite.com.

FEATURES



HCRK / HCRK-54 / HCRK-36 Power Module

- A** UL 60601-1 Compliance (internal)
- B** Hospital-Grade AC Input Plug
- C** Hospital-Grade AC Outlets
- D** Leakage Current Reduction, Battery Backup, Full Isolation, 3-Stage Battery Charger, Surge/Noise Protection and Electrostatic Discharge (ESD) Resistance (internal)
- E** User-Replaceable Battery Module
- F** Remote Control with Diagnostic LEDs
- G** USB Port
- H** Metal Housing

Certified by:  UL 60601-1 UL 1778

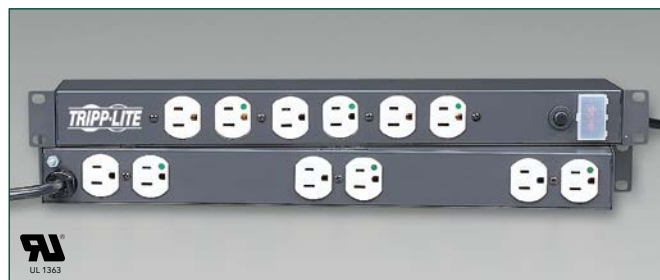
Model	Nominal AC Voltage	UL/IEC Compliance	Battery Capacity	Typical Runtime ⁽¹⁾	AC Outlets	Comm. Port	AC Input Cord Length	AC Input Plug Type
Medical-Grade Mobile Power Retrofit Kits (For use inside and outside patient care areas.)								
HCRK	120V	UL 60601-1 and 1778	90Ah	Up to 12 hours	3 (5-15R)	USB	1 to 10 ft. (Coiled Cord)	5-15P HG
HCRK-54	120V	UL 60601-1 and 1778	54Ah	Up to 6 hours	3 (5-15R)	USB	1 to 10 ft. (Coiled Cord)	5-15P HG
HCRK-36	120V	UL 60601-1 and 1778	36Ah	Up to 4 hours	3 (5-15R)	USB	1 to 10 ft. (Coiled Cord)	5-15P HG
HCRK-INT	230V	IEC 60601-1 and 62040	90Ah	Up to 12 hours	1 (C13)	USB	8 in.	C14 ⁽²⁾

Certifications vary by model. Go to www.tripplite.com for more information, including weights, dimensions and updates. (1) Typical runtime between charges for common mobile medical cart applications. Runtimes vary with equipment load, charge level, battery condition and other factors. (2) Connects to a user-supplied AC input cord and plug compatible with the facility's wall outlets.

NOT APPROVED FOR PATIENT CARE AREAS



ISOBAR6ULTRAHG Surge Protector



RS1215-HG 1U Rack Power Strip (front and back)



PS-615-HG Power Strip

Model	Nominal AC Voltage	UL Compliance	Surge Protection Rating	AC Outlets	AC Input Cord Length	AC Input Plug Type
Hospital-Grade Surge Protectors (For use outside patient care areas.)						
ISOBAR6ULTRAHG	120V	UL 1449 (3rd Edition)	3,330 joules	6 (5-15R HG)	15 ft.	5-15P HG
SPS-615-HG	120V	UL 1449 (3rd Edition)	1,050 joules	6 (5-15R HG)	15 ft.	5-15P HG
SPS610HGRA	120 V	UL 1449 (3rd Edition)	1,050 joules	6 (Right-Angle 5-15R HG)	10 ft.	5-15P HG
SPS606HGRA	120 V	UL 1449 (3rd Edition)	1,050 joules	6 (Right-Angle 5-15R HG)	6 ft.	5-15P HG
Hospital-Grade Power Strips (For use outside patient care areas.)						
RS1215-HG	120V	UL 1363	–	12 (5-15R HG)	15 ft.	5-15P HG
PS-615-HG	120V	UL 1363	–	6 (5-15R HG)	15 ft.	5-15P HG
PS-606-HG	120V	UL 1363	–	6 (5-15R HG)	6 ft.	5-15P HG
PS-602-HG	120V	UL 1363	–	6 (5-15R HG)	1.5 ft.	5-15P HG
PS-415-HG	120V	UL 1363	–	4 (5-15R HG)	15 ft.	5-15P HG

Hospital-grade solutions are suitable for use outside patient care areas. Certifications vary by model. Go to www.tripplite.com for more information, including weights, dimensions and updates.



Tripp Lite Helps You Achieve Medical-Grade Compliance (UL 60601-1 or UL 1363A)

Why is compliance with medical-grade standards so important?

Patient safety depends on it! UL 60601-1 and UL 1363A are shock-prevention measures required for all electrical devices that could potentially come into contact with patients or staff in patient care areas – an enormous category that encompasses everything from lamps and televisions to computers and diagnostic equipment. Just having a hospital-grade plug isn't enough to achieve medical-grade compliance. Medical-grade UPS systems, isolation transformers, mobile power kits and power strips combine hospital-grade plugs and outlets with special shock-prevention circuitry to achieve full medical-grade compliance. (UL 1363A solutions must be permanently mounted to movable devices like beds, carts or IV poles inside patient care areas. UL 60601-1 solutions do not require mounting.)

How can Tripp Lite help you achieve Medical-Grade compliance?

Tripp Lite's medical-grade UPS systems, isolation transformers, mobile power kits and power strips provide UL 60601-1 or UL 1363A compliance for all devices plugged into them, including medical, diagnostic-imaging, pharmaceutical, lab and EMS equipment, mobile cart and telemedical equipment, computer/information systems equipment and telecom/security equipment. Tripp Lite offers the broadest range of Medical-Grade power protection and power supply solutions available.

Regulatory Compliance Quick Reference		
Standard	Description	Application
UL 60601-1	Shock-prevention measure required for all devices that can potentially come in contact with patients and staff.	Patient care areas
UL 1363A	Basic safety standard for power strips integrated as components of a larger system where they supply power to equipment in a movable assembly that is rack, table or pedestal-mounted.	Mobile applications inside and outside patient care areas
UL 1363	Basic safety standard for power strips that stand alone and are NOT designed as components of a larger system.	Lab applications and administrative areas
UL 1449	Surge protector safety standard for units used outside of patient care areas.	Administrative areas and business offices

Tampa General Hospital

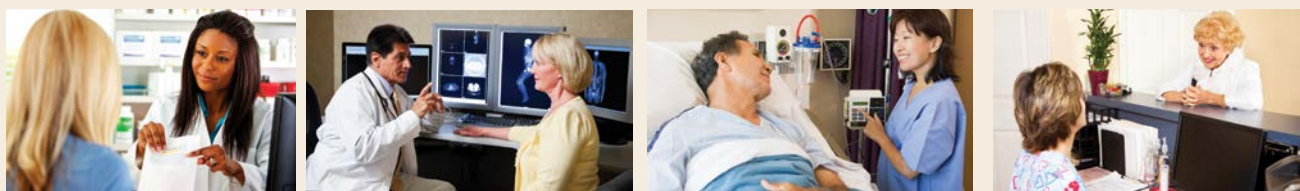
The Goal

Ken Lange, Senior Electrical Engineer for Tampa General Hospital, was managing a project to put computer stations (a computer and a monitor) next to 200 patient beds. However, the combined cumulative leakage of each computer station was too high. Lange needed to ensure that the stations were connected to highly reliable power sources that were UL 60601-1 compliant (reducing leakage current below 100 microamps). Ultimately, the stations' compliance would be verified by the authority that monitors compliance in Tampa General Hospital's area – the Florida Agency for Health Care Administration (AHCA).

The Solution

Lange turned to Tripp Lite's medical-grade isolation transformers to power his computer stations. The isolation transformers not only reduced leakage current and ensured UL 60601-1, NEC and AHCA compliance, they also satisfied several other needs. The isolation transformers protected the computers from potential damage and disruption caused by transient surges and line noise. Additionally, their compact, durable all-metal cabinet (and the use of a wall-mount bracket) allowed Lange to reduce the profile of his equipment and conserve valuable floor space within patient rooms.

Tripp Lite's medical-grade solutions ensure regulatory compliance throughout healthcare facilities – both inside and outside patient care areas!



Go to www.triplite.com, e-mail medical@triplite.com or call 773.869.1282 for more information.



POWER PROTECTION SOLUTIONS FOR HEALTHCARE IT

Tripp Lite UPS systems maximize the reliability, safety and performance of sensitive medical equipment by protecting against common power problems that cause costly downtime, equipment damage and data loss. More than 200 different models are available.

Ranging
from
150 VA



*Provide
power and
compliance
to mobile
carts.*



*Provide full
isolation to
minimize
shock
potential.*



*Provide
automatic voltage
regulation.*



*Provide
double conversion
for highly sensitive
equipment.*



*Provide
high-capacity
centralized
power.*

Up to
480 kVA

Tripp Lite provides regulated power, battery backup and regulatory code compliance to support a wide range of healthcare applications.

Clinical Lab Equipment



Mobile Power / Telemedicine



Healthcare IT Equipment



Ophthalmology Equipment



Diagnostic Imaging Systems



Medical Equipment



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