



Medical Power Isolation Units w/ Series-Mode Surge Suppression

Features

- International Approvals, 60601-1
- Low leakage current
- Surge Suppression without MOVs and without shunting to ground
- 12 models
- North American or Universal voltages
- Toroidal isolation transformer
- Hubbell medical-grade line cord and receptacles (North American units)
- IEC inlets and outlets (Universal units)
- Independently selectable input and output voltages (Universal units)
- Wall-mount or free-standing

Application

- Isolation of Electronic or Electromechanical Devices in Patient Care Areas



Medical
PIU

CSA/UL/IEC
60601-1



Description

Medical PIUs (Power Isolation Units) combine the best surge protection with PLITRON's proven high quality medical isolation toroidal transformers to provide the ultimate in protection and low-leakage current for demanding medical applications.

Medical PIUs use patented series-mode surge removal filters to absorb dangerous voltage surges and safely dissipate them without using failure-prone MOVs (metal oxide varistors). Also, unlike MOV-based protection, voltage surges are not shunted to ground.

These units also feature all the benefits of PLITRON medical isolation toroidal transformers, plus flexible mounting configurations.

Medical PIUs are available in power ranges from 300 to 2400VA in both North American (120V) or Universal (100-120-230/240V) operation.

North American units feature Hubbell plugs and receptacles. Universal units use IEC inlets and outlets and have user-selectable input and output voltages.

All units are certified to CSA/UL/IEC 60601-1 international medical standards by Canadian Standards Association.

Input	100-120-230/240V 50/60Hz Selectable IEC Inlet	120V, 60 Hz Medical grade plug		
Output	100-120-230/240V Selectable IEC Outlets	120V Medical grade receptacles		
Model	M003-ECA-E1AE	300VA	M003-AAA-A1AA	300VA
	M006-ECA-E1AE	600VA	M006-AAA-A1AA	600VA
	M009-ECA-E1AE	900VA	M009-AAA-A1AA	900VA
	M012-ECA-E1AE	1200VA	M012-AAA-A1AA	1200VA
	M018-ECA-E1AE	1800VA	M018-AAA-A1AA	1350VA
	M024-ECA-E1AE	2400VA	M024-AAA-A1AB	1880VA



1200VA North American (120V)

Surge Protection

Technology

ZeroSurge® patented series-mode with Spectrum WVR® wide voltage range.

Mode

Mode 1 applications, line to neutral, ground wire protection.

Limiters

Series leakage inductor current limiter; auto-tracking dual polarity voltage limiters; pulse inverter.

Clamping Voltage Onset

172 volts nominal, 2 volts above peak line voltage (auto tracking).

Applied Surge Pulse Voltage

6,000 volts (1.2 x 50 μs, industry standard rating).

Surge Pulse Current

>100,000 amperes applied (unlimited due to internal current limiting). 8 x 20 μs.

Surge Pulse Joule Rating

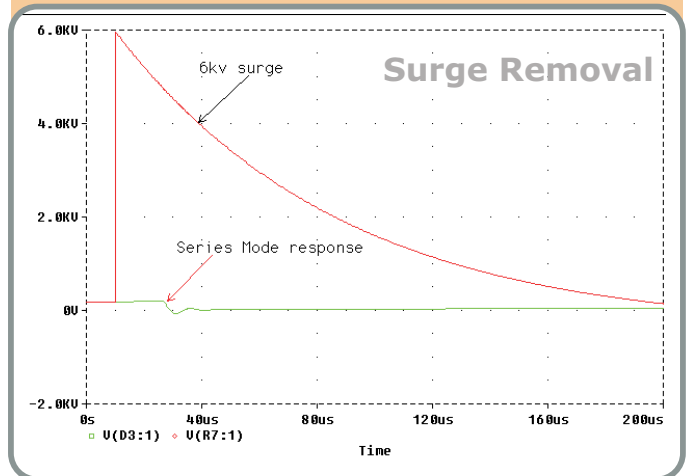
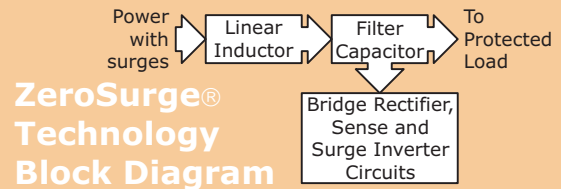
Unlimited Joule rating of applied surge due to surge current limiting. 8 x 20 μs.

Endurance

C62.41-1991, Category B3/C1 pulses (6kV, 3kA 1,000 surges), >100,000 at 2kV, >10,000 at 4kV.

Let-through Slew Rate

5,000 volts / μs disturbance reduced to 28 volts/μs within AC power wave envelope, and less than 10 volts/μs outside the power wave envelope.



<h1>Medical PIU</h1>	PIUMEDSG Rev. 4	Feb, 2007	Medical Power Isolation Units
	PLITRON Manufacturing Inc.		Selection Guide
	# 8-601 Magnetic Drive, Toronto, Ontario M3J 3J2 Canada		
	www.plitron.com		800-PLITRON (754-8766)
	techinfo@plitron.com		416-667-9914 fax 416-667-8928



Electrical

Input

Universal Units

Nominal 100-120-230/240VAC
selectable, 50/60Hz.

Range +/- 10%V, 47-63Hz

North American Units

Nominal 120VAC, 60 Hz
Range 108 - 132V, 57-63Hz

Input Protection

Universal Units

Dual fuses, panel-mount

North American Units

Circuit breaker, resettable, panel-mount

Input Rating

Universal Units

Model	Input Voltage			
	100V	120V	230V	240V
M003-ECA-E1AE	3.0A	2.5A	1.3A	1.25A
M006-ECA-E1AE	6.0A	5.0A	2.6A	2.5A
M009-ECA-E1AE	9.0A	7.5A	3.9A	3.75A
M012-ECA-E1AE	10.0A	10.0A	5.2A	5.0A
M018-ECA-E1AE	12.0A	12.0A	7.8A	7.5A
M024-ECA-E1AE	16.0A	16.0A	10.4A	10.0A

North American Units

Model	Input: 120V
M003-AAA-A1AA	2.5A
M006-AAA-A1AA	5.0A
M009-AAA-A1AA	7.5A
M012-AAA-A1AA	10.0A
M018-AAA-A1AA	12.0A
M024-AAA-A1AB	16.0A

Output Rating

Universal Units

Model	Output Voltage			
	100V	120V	230V	240V
M003-ECA-E1AE	3.0A	2.5A	1.3A	1.25A
M006-ECA-E1AE	6.0A	5.0A	2.6A	2.5A
M009-ECA-E1AE	9.0A	7.5A	3.9A	3.75A
M012-ECA-E1AE	9.0A	9.0A	5.2A	5.0A
M018-ECA-E1AE	12.0A	12.0A	7.8A	7.5A
M024-ECA-E1AE	16.0A	16.0A	10.4A	10.0A

North American Units

Model	Output: 120V
M003-AAA-A1AA	2.5A
M006-AAA-A1AA	5.0A
M009-AAA-A1AA	7.5A
M012-AAA-A1AA	10.0A
M018-AAA-A1AA	12.0VA
M024-AAA-A1AB	16.0VA

Load Regulation

Universal Units

Model	Output Regulation, max.
M003-ECA-E1AE	4.2%
M006-ECA-E1AE	3.3%
M009-ECA-E1AE	3.0%
M012-ECA-E1AE	2.4%
M018-ECA-E1AE	2.0%
M024-ECA-E1AE	1.3%

North American Units

Model	Output Regulation, max.
M003-AAA-A1AA	4.5%
M006-AAA-A1AA	3.9%
M009-AAA-A1AA	3.6%
M012-AAA-A1AA	3.0%
M018-AAA-A1AA	2.2%
M024-AAA-A1AB	1.7%

Leakage Current

Measured per UL 2601 worst case.

Universal Units

Model	Leakage Current
M003-ECA-E1AE	77uA
M006-ECA-E1AE	85uA
M009-ECA-E1AE	100uA
M012-ECA-E1AE	122uA
M018-ECA-E1AE	132uA
M024-ECA-E1AE	145uA

North American Units

Model	Leakage Current
M003-AAA-A1AA	30uA
M006-AAA-A1AA	35uA
M009-AAA-A1AA	40uA
M012-AAA-A1AA	47uA
M018-AAA-A1AA	55uA
M024-AAA-A1AB	70uA

Isolation

Greater than 4,000 VAC, primary to secondary. 100% hi-pot tested, duration: 1 min.

Environmental

Operating Temperature

Range: 0 to 40 deg. C.

Thermal

Maximum case temperature 30 deg. C above ambient.
Condition: Full load, 25 deg. C ambient.

Thermal Protection

All units include internal thermal cut-out switches. These are in-series with the primary of the transformers and will trip prior to compromising the insulation integrity under thermal fault conditions.

Standards

Surge Suppression

UL 1449 2nd edition

UL 1283

US government Grade A endurance: 1000 worst case surge endurance (UL 1449 Adjunct Classification)

Medical/Safety

Certified by CSA to C22.2 No 0-M91, C22.2 No 601.1-M90, C22.2 No 601.1S1-94, UL 60601-1, IEC 60601-1:1988
CSA file 157544.



Mechanical

Chassis

Material: Plated steel sheet-metal.

Finish: Black powder-coat.

Size

Universal Units

Model	Width	Height	Length
M003-ECA-E1AE	6.7"	4.1"	9.7"
M006-ECA-E1AE	7.8"	4.2"	10.8"
M009-ECA-E1AE	8.7"	5.0"	11.8"
M012-ECA-E1AE	9.5"	5.4"	12.5"
M018-ECA-E1AE	12.2"	6.1"	15.3"
M024-ECA-E1AE	12.2"	6.1"	15.3"

North American Units

Model	Width	Height	Length
M003-AAA-A1AA	6.7"	4.1"	9.7"
M006-AAA-A1AA	7.8"	4.2"	10.8"
M009-AAA-A1AA	8.7"	5.0"	11.8"
M012-AAA-A1AA	9.5"	5.4"	12.5"
M018-AAA-A1AA	12.2"	6.1"	15.3"
M024-AAA-A1AB	12.2"	6.1"	15.3"

Mounting

Standard: Removable rubber feet.

Optional: Two steel mounting rails.

Inputs

Universal Units

IEC Inlet

North American Units

Plug and line cord:

Hubbell hospital-grade, grounded, 3-wire, 6' long.

Outputs

Universal Units

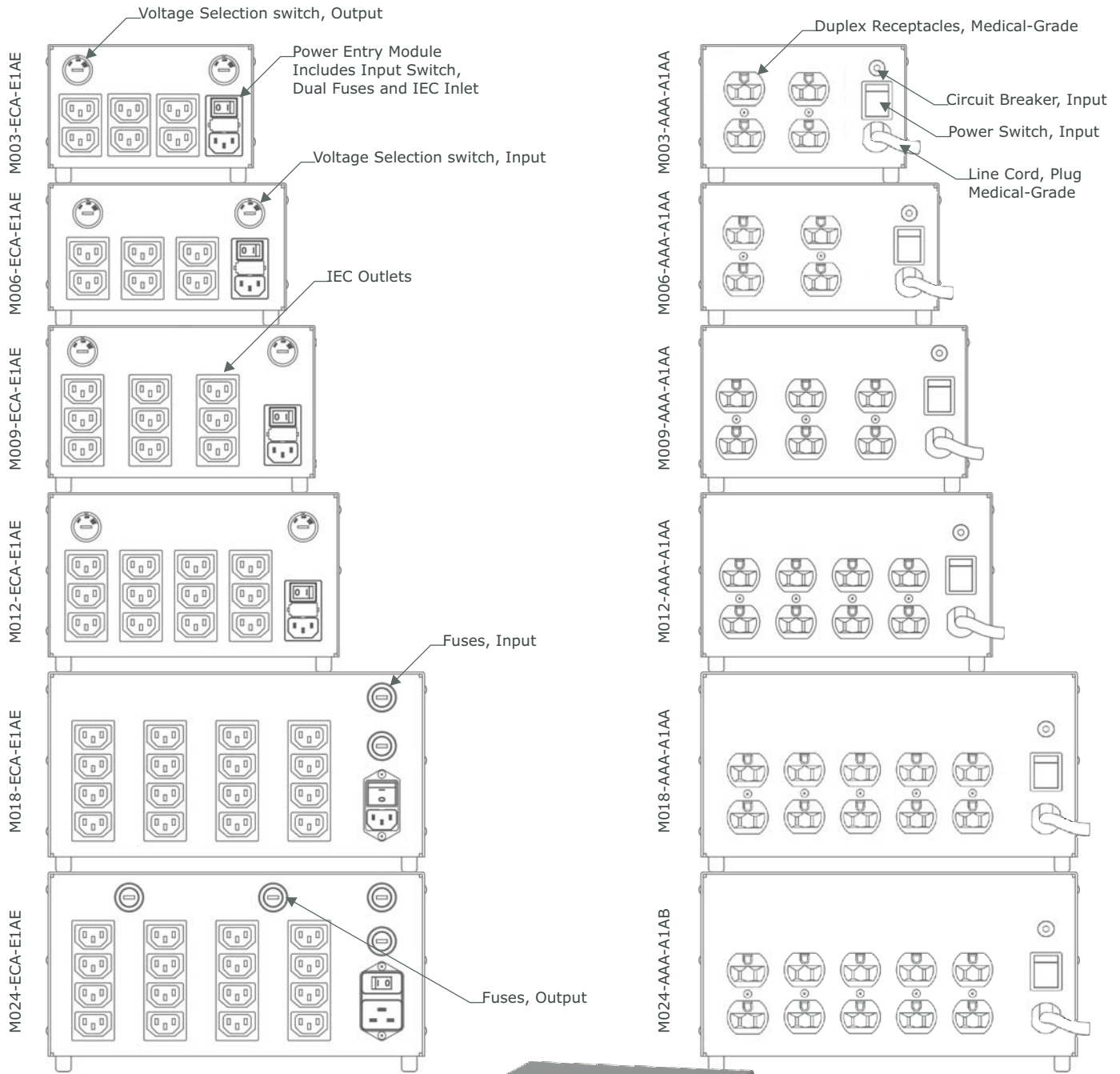
IEC outlets

North American Units

Receptacles:

Duplex Hubbell medical-grade.

Rear Panel Layout



Warranty and Suitability

PLITRON products are warranted against materials and manufacturing defects for a period of five years from date of shipment to Customer. There are no representations made or warranties given as to the application and use of the product by the Customer. It is the responsibility of the Customer to ensure the suitability of the product for the intended application. PLITRON is not responsible for any damage of any nature whatsoever to ancillary circuitry, equipment or property due to use of the product.



600VA Universal

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