ONEAC®

PCm Series

Medical-Grade Power Conditioner

U S E R M A N U A L

A Chloride Power Protection Company

A CHLORIDE POWER PROTECTION COMPANY

PCm Series Power Conditioner
User Instruction Manual

IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS.

Please read and save these instructions. This manual contains important instructions for the PCm Series Power Conditioner. Follow these instructions during the unpacking, installation and maintenance of the PCm Series Power Conditioner. If you have a problem with the unit, please refer to this manual before calling the Technical Support Department.

Licenses and Trademarks

ONEAC and Environmental Reference Ground are registered trade marks and ONEGROUND is a trademark of ONEAC Corporation. All other trademarks, product and corporate names are the property of their respective owners.

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Introduction

Thank you for selecting this ONEAC Power Conditioner. ONEAC's PCm Series Medical-Grade Power Conditioners offer the most reliable protection available from the harmful effects of electrical line disturbances for your lab instrumentation, clinical information systems and patient monitoring equipment.

ONEAC's ISO 9001 certification represents our commitment to building world-class products. We take pride in every unit that leaves our manufacturing facility.

Technical Support

ONEAC offers 24-hour technical support. To contact ONEAC Technical Services:

North America: (847) 816-6000
or toll free (800) 327-8801, option 3.

Europe: +44 (0) 2380 610311

email: ts@oneac.com.

NOTE: *All calls received before 7 a.m. or after 7p.m. Central Standard Time are forwarded to a cell phone. An ONEAC Technical Service Representative will return your call within one half hour between 5 p.m. and 10 p.m. Central Standard Time. Except for emergencies, calls received between 10 p.m. and 7 a.m. will be returned during normal business hours.*

Please contact ONEAC Technical Services before attempting to repair or return any ONEAC product. If an ONEAC power conditioner needs repair or replacement, ONEAC Technical Services issues a Return Material Authorization (RMA) number along with instructions on how to return the power conditioner.

Safety

Class 1 equipment

This equipment not suitable for use in the presence of a Flammable Anesthetic Mixture With Air, or With Oxygen, or Nitrous Oxide.

Not designed, intended or authorized for use in systems intended to support or sustain life.

For more details on life critical applications please refer to full disclaimer in Warranty on page 10 of this manual.

CAUTION: *This unit is intended to be used in a system that has a grounded neutral conductor.*

CAUTION: *Operating this equipment without proper grounding may present a risk of electrical shock.*

Do not use AC adaptors with only two conductors to connect the input line cord to the wall socket as this will not connect the earth ground to the equipment.

WARNING: *Do not remove the cover. Voltages inside the power conditioner may be lethal! There are no user-serviceable parts inside. Any repairs or modifications by the user may result in out-of-warranty repair charges, unsafe electrical conditions, or violation of electrical code. All repairs should be done by qualified service personnel.*

Product Requirements

The assembler of the system of which this unit comprises, must ensure that the final configured system complies with the requirements of IEC60601-1-1 (2000-12) collateral Standard: Safety Requirements for Medical Electrical Systems.

I and J models are not supplied with a product power cord for equipment connection. The cable shall be H05 grade of 1.0 mm^2 minimum, with a suitable national plug and approved IEC320 coupler. This coupler MUST be secured to the equipment with the retaining clip supplied to prevent inadvertent disconnection. Failure to do so will invalidate unit safety approvals.

Features

The PCm Series Power Conditioners are listed Medical Electrical equipment for UL1012/ UL60601-1 (formerly UL2601-1) and CSA-C22.2 No. 107.1-M91 and 601.1 compliance and international models carry the CE Mark. Designs are compliant with all specification parameters for Class I equipment (such as earth leakage and enclosure leakage currents).

Units are available in 120 V 60Hz and 230 V 50/60 Hz.

Models that contain a “U” or “W” in the part number, i.e. PCM1500U or PCM1500W, provide selectable voltage conversion. “U” models are suitable for high voltage to low voltage applications. “W” models are suitable for low voltage to high voltage applications.

Unpacking and Inspection

Before shipment, this product was tested, inspected and found to be free of mechanical and electrical defects. Upon receipt of your power conditioner, carefully examine the packing containers for any sign of physical damage. Notify the carrier immediately if damage is present. After inspecting, carefully unpack the power conditioner. Retain the packaging materials for reuse or dispose of the materials properly. Once unpacked, inspect and test the unit for hidden damage that may have occurred in transit. If damage is evident, contact ONEAC Technical Services.

Installation Instructions

1. Plug power conditioner into the wall outlet.

NOTE:*The “Output power” light should be illuminated.*

2. Plug equipment into the power conditioner.
3. Operate equipment as usual.

Position the power conditioner so that the vent holes are not obstructed. For best results, do not use extension cords or power strips between the equipment and the power conditioner or between the power conditioner and the wall outlet. Data cables should be kept as far from power cords as possible. Separate the input cord to the power conditioner from the equipment power cords.

Wallmount PCm Series power conditioners can be positioned in any direction. However, positioning the power conditioner with the AC receptacles facing upward is not recommended.

Overcurrent Protection

The total current required by your equipment must not exceed the power conditioner’s maximum current rating as listed on the nameplate.

If your equipment's current draw exceeds the power conditioner's output current rating, a circuit breaker located on the input side of the power conditioner, will trip. To reset the circuit breaker, unplug your equipment from the power conditioner's output receptacles and push the circuit breaker switch. If the circuit breaker continues to trip once it is reset, disconnect equipment which causes this over current condition.

Indicator Lights

ONEAC PCm Series Power Conditioner features one (1) LED indicator to communicate the status of power.

Output power light

When the green LED is illuminated, it indicates power is available at the output distribution of the power conditioner.

For models with output circuit breakers, breakers must be in the on position for power to be available at the receptacles.

Environmental Reference Ground®

The Environmental Reference Ground  (an equipotential point) provides potential equalization and a common ground point for system components and static protection devices; network cable segments that require shield grounding; static control devices such as floor mats, table mats, static-free work benches and other devices that require a reference ground connection. For use, remove the green screw on back panel, attach the ground cord connector, and reinstall the screw.

For maximum system performance in systems that require a secondary ground, the following is suggested:

a) Use the Environmental Reference Ground (equipotential point) as the single grounding point for all externally connected grounds.

b) Connect the Environmental Reference Ground to the nearest qualified ground in the surroundings, using the shortest possible conductor.

c) Avoid ground loops.

Specifications and Characteristics

Table 1. Physical/Electrical Specifications and Performance Characteristics

Specification and Characteristics	
Normal and Common Mode Clamping Response Time	instantaneous
Surge voltage withstand capability	ANSI/IEEE C62.41 Category A&B, 6 kV/200 & 500 Amp, 100 kHz ringwave
Surge and Noise Rejection-Isolation	with unit under power, and ANSI/IEEE C62.41 Category A pulse applied either normal mode (L-N) or common mode (N-G) at the input, the noise output voltage will be less than 10V normal mode and less than 0.5V common mode in all four quadrants using a Keytek 711A/J (or equivalent) surge generator and a low-voltage, high sensitivity probe.
Load Power Factor	0:3 leading to 0.3 lagging
Load Regulation Response Time	<2 msec for a 50% change in load
Interruption Response Time	output voltage will track input voltage in less than 2 msec at power-off and power-on for a single-cycle asynchronous notch
Distortion	<1% THD added into a resistive load
Overload Protection	twin pole circuit protection
Cooling	convection
Leakage Current (µA)	<100
Operating Temperature	0º to +40ºC (32 to 104ºF)
Storage Temperature	-15 to 45ºC (+5 to 113ºF)
Relative Humidity	0 to 95%, non-condensing
Operating Elevation	0 to 3,000 m (0 to 10,000 ft)
Storage Elevation	0 to 15,000 m (0 to 50,000 ft)
United States Safety Regulations	UL1012/UL60601-1 (Medical Electrical Equipment, Part 1 General Requirements for Safety)
Canada Safety Regulations	CSA C22.2 No. 107.1 and 601.1
Europe Safety Regulations	CE marked as per IEC60601-1

Table 2. Specifications for 120 VA - 1000 VA Models

Model Number*	Load (VA)	Nominal Input (Volts)	Output (Volts)	Max. Load (Amps)	Frequency (Hz)	Connectors: Input / Output*	Dimensions (HxWxD) in (cm)	Ship Weight lbs (kg)
PCM120A	120	120	120	1.0	60	5-15P HG / (2) 5-15R HG	4.79 x 4.11 x 8.97 (12.2 x 10.4 x 22.8)	9.5 (4.3)
PCM180A	180	120	120	1.5	60	5-15P HG / (2) 5-15R HG	4.79 x 4.11 x 8.97 (12.2 x 10.4 x 22.8)	9.5 (4.3)
PCM180I	180	200 - 240	200 - 240	0.8	50/60	IEC320 / (4) IEC320	4.79 x 4.11 x 8.97 (12.2 x 10.4 x 22.8)	12 (5.4)
PCM240A	240	120	120	2.0	60	5-15P HG / (4) 5-15R HG	4.79 x 4.11 x 8.97 (12.2 x 10.4 x 22.8)	11.5 (5.2)
PCM240I	240	200 - 240	200 - 240	1.0	50/60	IEC320 / (4) IEC320	4.79 x 4.11 x 8.97 (12.2 x 10.4 x 22.8)	12 (5.4)
PCM360A	360	120	120	3.0	60	5-15P HG / (4) 5-15R HG	4.79 x 4.11 x 8.97 (12.2 x 10.4 x 22.8)	12 (5.4)
PCM360I	360	200 - 240	200 - 240	1.5	50/60	IEC320 / (4) IEC320	4.79 x 4.11 x 8.97 (12.2 x 10.4 x 22.8)	14.5 (6.6)
PCM360J	360	100 - 120	100 - 120	3.0	50/60	IEC320 / (4) IEC320	4.79 x 4.11 x 8.97 (12.2 x 10.4 x 22.8)	14.5 (6.6)
PCM550A	550	120	120	4.6	60	5-15P HG / (4) 5-15R HG	5.4 x 6.4 x 10.9 (13.7 x x16.4 x 27.7)	22 (10.0)
PCM550I	550	200 - 240	200 - 240	2.3	50/60	IEC320 / (4) IEC320	5.4 x 6.4 x 10.9 (13.7 x x16.4 x 27.7)	23.5 (10.7)

Table 2. Specifications for 120 VA - 1000 VA Models

Model Number*	Load (VA)	Nominal Input (Volts)	Output (Volts)	Max. Load (Amps)	Frequency (Hz)	Connectors: Input / Output*	Dimensions (HxWxD) in (cm)	Ship Weight lbs (kg)
PCM750A	750	120	120	6.2	60	5-15P HG / (4) 5-15R HG	5.4 x 6.4 x 10.9 (13.7 x x16.4 x 27.7)	31 (14.1)
PCM750I	750	200 - 240	200 - 240	3.1	50/60	IEC320 / (4) IEC320	5.4 x 6.4 x 10.9 (13.7 x x16.4 x 27.7)	26.5 (12.0)
PCM750J	750	100-120	100-120	6.2	50/60	IEC320 / (4) IEC320	5.4 x 6.4 x 10.9 (13.7 x x16.4 x 27.7)	32 (14.5)
PCM1000A	1000	120	120	8.4	60	5-15P HG / (4) 5-15R HG**	5.4 x 6.4 x 10.9 (13.7 x x16.4 x 27.7)	31 (14.1)
PCM1000I	1000	200-240	200 - 240	4.2	50/60	IEC320 / (4) IEC320	5.4 x 6.4 x 10.9 (13.7 x x16.4 x 27.7)	31.5 (14.3))
PCM1000J	1000	100-120	100-120	8.4	50/60	IEC320 / (4) IEC320	5.4 x 6.4 x 10.9 (13.7 x x16.4 x 27.7)	32 (14.5)
PCM1000Y	1000	200-240	100-120	8.4	50/60	IEC320 / (4) IEC320	5.4 x 6.4 x 10.9 (13.7 x x16.4 x 27.7)	32 (14.5)

* Six foot line cord is standard on 60 Hz models. Additional configurations available (call factory).
** Also available with (6) 5-15R HG.

Table 2. Specifications for 1500 VA - 3000 VA Models

Model Number	Load (VA)	Nominal Input (Volts)	Output (Volts)	Max. Load (Amps)	Frequency (Hz)	Connectors: Input* Output	Dimensions (HxWxD) in (cm)	Ship Weight lbs (kg)
PCm1500A	1500	120	120	12.5	60	5-15P HG (6) 5-15R HG	8 x 7 x 16.3 (20 x 18 x 41.4)	53 (23)
PCm1500I	1500	200 - 240	200 - 240	6.3	50/60	IEC cord set (6) IEC320	8 x 7 x 16.3 (20 x 18 x 41.4)	53 (23)
PCm1500U	1500	**100 - 120 or 200 - 240	100 - 120	12.5	50/60	hardwired hardwired	8 x 7 x 16.3 (20 x 18 x 41.4)	53 (23)
PCm1500W	1500	**100 - 120 or 200 - 240	200 - 240	6.3	50/60	hardwired hardwired	8 x 7 x 16.3 (20 x 18 x 41.4)	53 (23)
PCm2000A	1920	120	120	16	60	5-20P HG (4) 5-15R HG & (2) 5-20R HG	8 x 7 x 16.3 (20 x 18 x 41.4)	53 (23)
PCm2000I	2000	200 -240	200 - 240	8.4	50/60	IEC cord set (6) IEC320	8 x 7 x 16.3 (20 x 18 x 41.4)	53 (23)
PCm2000Y	2000	200-240	100-200	16.7	50/60	IEC cord set (6) IEC320 (10A) (1) IEC320 (16A)	8 x 7 x 16.3 (20 x 18 x 41.4)	53 (23)
PCm2000U	2000	**100 - 120 or 200 - 240	100 - 120	16.7	50/60	hardwired hardwired	8 x 7 x 16.3 (20 x 18 x 41.4)	53 (23)
PCm2000W	2000	**100 - 120 or 200 - 240	200 - 240	8.4	50/60	hardwired hardwired	8 x 7 x 16.3 (20 x 18 x 41.4)	53 (23)

Table 2. Specifications for 1500 VA - 3000 VA Models

Model Number	Load (VA)	Nominal Input (Volts)	Output (Volts)	Max. Load (Amps)	Frequency (Hz)	Connectors: Input* Output	Dimensions (HxWxD) in (cm)	Ship Weight lbs (kg)
PCm3000A	3000	120	120	25	60	L5-30P HG L5-30R & (2) 5-20R & (2) 5-15R	8 x 7 x 16.3 (20 x 18 x 41.4)	65 (29)
PCm3000I	3000	200 -240	200 - 240	12.5	50/60	IEC cord set (1) IEC320(16A) & (6) IEC320(10A))	8 x 7 x 16.3 (20 x 18 x 41.4)	65 (29)
Pcm3000U	3000	**100 - 120 or 200 - 240	100 - 120	25	50/60	hardwired hardwired	8 x 7 x 16.3 (20 x 18 x 41.4)	65 (29)
PCm3000W	3000	**100 - 120 or 200 - 240	200 - 240	12.5	50/60	hardwired hardwired	8 x 7 x 16.3 (20 x 18 x 41.4)	65 (29)

* Six foot line cord is standard on 60 Hz models. Additional configurations available (call factory).
** Input voltage range is selectable.

Troubleshooting

Table 2. Trouble Shooting

Problem	Possible Cause	Solution
Power Conditioner will not turn ON	Power Conditioner's input circuit breaker tripped.	Reduce the load on the power conditioner by unplugging the load and depress the circuit breaker on the rear panel.
	Unit not plugged in.	Plug unit into wall outlet.

Warranty

ONEAC products are warranted free from defects in materials and workmanship for five years. This warranty is limited to repairing or replacing, at ONEAC's option, any defective component, circuit board, or module contained within the product only when it is returned with an ONEAC Return Material Authorization (RMA) number to ONEAC or to an ONEAC-designated repair facility. In all cases, the customer is responsible for shipping charges to and from ONEAC or the ONEAC-designated repair facility.

Life Critical Applications

While ONEAC believes it designs and manufactures very reliable products, many of the vendors that ONEAC sources components from do not recommend or endorse the use of their products in life critical applications. By extension, ONEAC must adhere to the same business policy and does not recommend the use of our products in life critical applications.

Disclaimer

ONEAC products are not designed, intended or authorized for use in systems intended to support or sustain life, or for any other application in which the failure of the ONEAC product could create a situation where personal injury or death may occur. Should the Buyer purchase or use ONEAC product for any such unintended or unauthorized application, the Buyer shall indemnify and hold ONEAC and its officers,

employees, subsidiaries, affiliates and distributors harmless against all claims, costs, damages and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim or personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that ONEAC was negligent regarding the design or manufacture of the part.

Limitations of Warranty

This limited warranty does not cover any losses or damage resulting from shipment to or from the customer, or from improper installation, inappropriate environment, abuse, modifications, adjustments, or unauthorized repair.

For full details of the warranty, see ONEAC Warranty, Policy and Procedures (part number 955-053).

Exclusive Remedies

Except as set forth herein and except as to title, there are no warranties, express or implied, or any affirmations of fact or promises by ONEAC for the products, their merchantability, or fitness for any particular purpose. In no event shall ONEAC be liable for lost profits, goodwill, or any other special or consequential damages.

Return Procedure

To return a power conditioner, contact ONEAC Technical Services for a Return Material Authorization (RMA) number. This number must be marked on the shipping carton and packing slip of the unit returned. The customer is responsible for repair charges for damages incurred in shipment that result from inadequate or improper packing of the product.

ONEAC Corporation, a wholly owned subsidiary of Chloride Group, PLC was founded in 1979. ONEAC designs and manufactures products that provide the highest level of protection against power and data line disturbances, regardless of conditions. ONEAC's comprehensive product lines include power conditioners, uninterruptible power supplies, DC power solutions and voice & data line protection devices. With ISO9001 certified manufacturing plants in the U.S. and U.K., ONEAC is dedicated to demand-flow manufacturing and the highest quality standards.

Organizations whose productivity goals allow no possibility for system downtime use ONEAC. They include many of the world's leading companies, in a wide range of applications including telecommunication systems, information technology, retail information systems, computer-integrated manufacturing systems, semiconductor test equipment and biomedical instrumentation and information systems. Information on ONEAC products and services is available on the Internet at www.oneac.com.

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