



Power Conditioners User's Manual

For use with Standard Power Conditioners, Medical Power Conditioners and
Ground Guard Power Conditioners



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DANGER

Danger- The danger symbol is used to indicate imminently hazardous situations, locations, and conditions which, if not avoided, **WILL** result in death, serious injury, and/or severe property damage.



CAUTION

Caution- The caution symbol is used to indicate potentially hazardous situations and conditions which, if not avoided, may result in injury. Equipment damage may also occur.



WARNING

Warning- The warning symbol is used to indicate potentially hazardous situations and conditions which, if not avoided, **COULD** result in serious injury or death. Severe property damage **COULD** also occur.



ATTENTION

Attention- The attention symbol is used to indicate situations and conditions that can cause operator injury and/or equipment damage.

Other warning symbols may appear along with the Danger and Caution symbol and are used to specify special hazards. These warnings describe particular areas where special care and/or procedures are required in order to prevent serious injury and possible death.



Electrical warnings- The electrical warning symbol is a lightning bolt mark enclosed in a triangle. The electrical warning symbol is used to indicate high voltage locations and conditions may cause serious injury or death.



Explosion warnings- The explosion warning symbol is an explosion mark enclosed in a triangle. The explosion warning symbol is used to indicate locations and conditions where molten, exploding parts may cause serious injury or death if the proper precautions are not observed.

1.0 INTRODUCTION

Thank You

Thank you for your purchase of this power conditioning solution. Our broad family of power quality solutions are designed to protect sensitive electronic systems from the destruction, degradation, and disruption caused by electrical power disturbances.

This product you have purchased is the most advanced solution available today. It protects and provides clean power to your system. We've prepared this document to help familiarize you with the functions and controls of this product. If, after reviewing this manual, you have any questions at all, please feel free to contact our technical support team by phone (1-800-369-7179) or email us at servicerma@powervar.com.

Registering your POWERVAR Product

Please take a few moments to register your product purchase. Registration is easy and quick via the product registration page found on our website at www.powervar.com.

2.0 SAFETY ISSUES



Inspection

Remove the power conditioner from the shipping container and inspect it for shipping damage. Do not install or operate the product if it appears to be damaged in any way. If damaged, notify the carrier and the company that sold it to you immediately.

Environmental Issues

This power conditioner has environmental requirements similar to other computer and electronic equipment. It has been designed for indoor use only, in areas where it will not be exposed to excessive dust or moisture. Make certain that there is adequate airflow around the unit. Do not place objects on top of or near the unit, which could obstruct the air vents.

Sizing Information

The data plate on the rear panel lists the power conditioner operating voltage, frequency, and current ratings. Observe that the input current.

3.0 INSTALLATION

 **WARNING**

To prevent electrical shock, never remove the power conditioner cover.

Install the power conditioner as close as possible to the load equipment. Do not use extension cords or surge or filtration devices with the power conditioner. Place all load equipment power switches in the off position. Plug the power conditioner into an appropriately sized AC power source. Plug the load equipment into the power conditioner receptacles. The load equipment must be connected to the power conditioner with a three conductor grounded power cord. If in doubt about how to properly connect this power conditioner, please consult the connection diagram shown at the end of this section.

 **Attention**

The power conditioner's ground-screw is to be used to connect items such as static discharge floor mats or telephone switch grounds that contain a single conductor ground. Any equipment that is not connected via a 3-conductor grounded power cord will be floating above ground. If the end user elects to provide additional grounds, they must be tied to the thumb screw ground-stud.

Turn the power conditioner circuit breaker ON. Observe that the front-panel green LED is illuminated. Observe that the red LED (yellow for international models) is not illuminated. (Place the power conditioner on a non-grounded surface such as carpet, wooden table or magazine for this test).

 **CAUTION**

If the red LED (yellow for international models) is continuously flashing, the wall receptacle is not connected to the system safety ground. Contact an electrician immediately to correct this wiring error.

 **Attention**

The red LED (yellow for international models) is not intended to test general wiring integrity. Hot-neutral reversal, neutral-ground reversal, and/or wiring errors will not illuminate the red LED (yellow for international models).

4.0 OPERATION

Once the power conditioner has been properly installed and tested, the power switches of the load may be turned ON. The power conditioner circuit breaker can be used as a master load switch (if the power conditioner is a model that is not equipped with an external circuit breaker, the distribution panel circuit breaker may be used to energize the load).

5.0 MAINTENANCE

For the most current maintenance procedures, visit our website www.powervar.com.

6.0 SPECIFICATIONS

Important specification details:

- Models are for use in ordinary locations.
- This power conditioner uses a basic type insulation.
- This power conditioner is Class 1 equipment.
- This power conditioner is Type B equipment.
- This power conditioner uses hazardous voltage.
- The internal parts of this power conditioner are not user accessible.

Important Medical unit specification details:

- There is a risk of explosion if used in the presence of flammable anesthetics.
- Models ABC2000-22MED and ABC2500-22MED weigh over 20 kg. and must be transported with caution.
- Medical power conditioners are designed for patient vicinity use only.
- If the input voltage is interrupted, the output voltage will also be interrupted.
- If the medical power conditioner model number is accompanied by the designation “ISO”, the output neutral is not bonded to ground. The output of “ISO” designated models floats above ground.

Information Specific to All Ground Guard Models

Follow the same instructions for unpacking, inspection, installation, and operation already described for other POWERVAR power conditioners. Ground Guard power conditioners have the same environmental requirements as POWERVAR’s standard and medical power conditioners. Ground Guard power conditioners contain a safety agency approved noise filter (impedance) in the safety ground circuit that prevents the conduction of powerline disturbances into signal, data, and I/O grounds that connect to the safety grounding subsystem. The impedance adds less than .1 ohms at 60 Hz to the impedance of the safety ground. Ground Guard power conditioners have the same electrical characteristics as their comparable standard models.

Electrical Data for North American Models

Standard Conditioners Model Number	Voltage In/Out	Freq. Hz.	Rated Amps
ABC065-11	120/120	60	65
ABC100-11	120/120	60	1.0
ABC150-11	120/120	60	1.5
ABC152-11	120/120	60	1.5
ABC201-11	120/120	60	2.0
ABC202-11	120/120	60	2.0
ABC302-11	120/120	60	3.0
ABC402-11	120/120	60	4.0
ABC400-11	120/120	60	4.0
ABC500-11	120/120	60	5.0
ABC600-11	120/120	60	6.0
ABC700-11	120/120	60	7.0
ABC830-11	120/120	60	8.3
ABC1000-11	120/120	60	10.0
ABC1200-11	120/120	60	12.0
ABC1600-11	120/120	60	16.0
ABC2000-11	120/120	60	20.0

Medical Conditioners Model Number	Voltage In/Out	Freq Hz	Rated Amps
ABC200-11MED	120/120	60	2.0
ABC300-11MED	120/120	60	3.0
ABC400-11MED	120/120	60	4.0
ABC500-11MED	120/120	60	5.0
ABC600-11MED	120/120	60	6.0
ABC700-11MED	120/120	60	7.0
ABC830-11MED	120/120	60	8.3
ABC1000-11MED	120/120	60	10.0
ABC1200-11MED	120/120	60	12.0
ABC1600-11MED	120/120	60	16.0

Ground Guard Model Number	Voltage In/Out	Freq. Hz.	Rated Amps
ABCG065-11	120/120	60	0.65
ABCG100-11	120/120	60	1.0
ABCG152-11	120/120	60	1.5
ABCG202-11	120/120	60	2.0
ABCG302-11	120/120	60	3.0
ABCG402-11	120/120	60	4.0
ABCG400-11	120/120	60	4.0
ABCG500-11	120/120	60	5.0
ABCG600-11	120/120	60	6.0
ABCG700-11	120/120	60	7.0
ABCG830-11	120/120	60	8.3
ABCG1000-11	120/120	60	10.0
ABCG1200-11	120/120	60	12.0
ABCG1600-11	120/120	60	16.0
ABCG2000-11	120/120	60	20.0

Electrical Data for International Models

Standard Conditioners Model Number	Voltage In/Out	Freq. Hz.	Rated Amps
ABC150-22INT	200-264/200-264	50/60	0.65
ABC250-22INT	200-264/200-264	50/60	1.09
ABC500-22INT	200-264/200-264	50/60	2.08
ABC750-22INT	200-264/200-264	50/60	3.12
ABC1000-22INT	200-264/200-264	50/60	4.16
ABC1250-22INT	200-264/200-264	50/60	5.21
ABC1500-22INT	200-264/200-264	50/60	6.25
ABC2000-22INT	200-264/200-264	50/60	8.33
ABC2500-22INT	200-264/200-264	50/60	10.42

Medical Conditioners Model Number	Voltage In/Out	Freq. Hz.	Rated Amps
ABC500-22MED	200-240/200-240	50/60	2.08
ABC750-22MED	200-240/200-240	50/60	3.12
ABC1000-22MED	200-240/200-240	50/60	4.16
ABC1250-22MED	200-240/200-240	50/60	5.21
ABC1500-22MED	200-240/200-240	50/60	6.25
ABC2000-22MED	200-240/200-240	50/60	8.33
ABC2500-22MED	200-240/200-240	50/60	10.42
* Available with output neutral not bonded to ground. Order with suffix "ISO"			

Ground Guard Model Number	Voltage In/Out	Freq. Hz.	Rated Amps
ABCG150-22INT	200-264/200-264	50/60	0.65
ABCG250-22INT	200-264/200-264	50/60	1.09
ABCG500-22INT	200-264/200-264	50/60	2.08
ABCG750-22INT	200-264/200-264	50/60	3.12
ABCG1000-22INT	200-264/200-264	50/60	4.16
ABCG1250-22INT	200-264/200-264	50/60	5.21
ABCG1500-22INT	200-264/200-264	50/60	6.25
ABCG2000-22INT	200-264/200-264	50/60	8.33
ABCG2500-22INT	200-264/200-264	50/60	10.42

IMPORTANT INFORMATION CONCERNING MODELS WITH SUFFIX 22MED AND -22ISO

1. Operating temperature: 0 to 25°C (32 to 77°F)
2. Shipment/Storage temperature: 20 to 60°C (-40 to 140°F)
Humidity (shipment, storage, operating): 5 to 90% non-condensing
Operating altitude: 3,000m (10,000 ft.) max.
3. Shipment altitude: 12,000m (40,000 ft.) max.
Warning: Multiple portable sockets-outlets (MPSO) shall not be placed on the floor.
4. Models with -22ISO suffix have no neutral to ground bond.
Secondary is floating.

7.0 TROUBLESHOOTING

Technical Support

In North America, POWERVAR provides technical product support during our regular business hours of 8:00 a.m. to 5:00 p.m. Central Time. Between the hours of 5:00 p.m. and 8:00 a.m., our phone system will allow you to leave a message for our technical support department. The phone mail system also provides an emergency number to call in the event you should require immediate assistance. You may also communicate with our customer service/support department via fax or email. In North America, call toll free at (800) 369-7179. Our North American fax number is (847) 596-7100. In Europe, POWERVAR provides technical support between 8:00 and 17:00 GMT. Contact our European headquarters at +44 (0) 1793-553980 or visit our website at www.powervar.com for more locations.

Customer Service

For service, obtain the model number, part number, and serial number from the rear panel data plate. Then contact POWERVAR via phone or web to obtain a Return Material Authorization (RMA) number. This number must be marked on the shipping container and packing slip of the unit being returned. The original shipping container should be used if available. Additional charges will apply for repair of damages caused by improper packing of the returned unit. Unauthorized return shipments will be refused. Units for repair must be shipped prepaid to POWERVAR.

8.0 WARRANTY

POWERVAR warrants its power conditioners (known hereafter as the “product”) to be free from defects in materials and workmanship for a period of five years from the date of shipment. The product will be repaired or (at POWERVAR’s option) replaced at no charge during this warranty period. Product must be returned prepaid. See our website www.power-var.com for ull warranty statement.

POWERVAR makes no warranties, expressed or implied, of merchantability, fitness for a particular purpose, performance, condition, capacity or otherwise. The manufacturer is not liable for incidental or consequential damages, monetary loss, loss of sales or loss of business resulting from the failure or malfunction of the product.

Warranty is void on any product that is misused, misapplied, abused, altered, repaired by unauthorized personnel, or where evidence of tampering exists. The foregoing constitutes the sole and exclusive remedy of the purchaser and is in lieu of all other warranties. No greater degree of liability is imposed on the manufacturer.



Access additional product information and support on the web at <http://www.powervar.com>

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