

Notes:

---

---

---

---

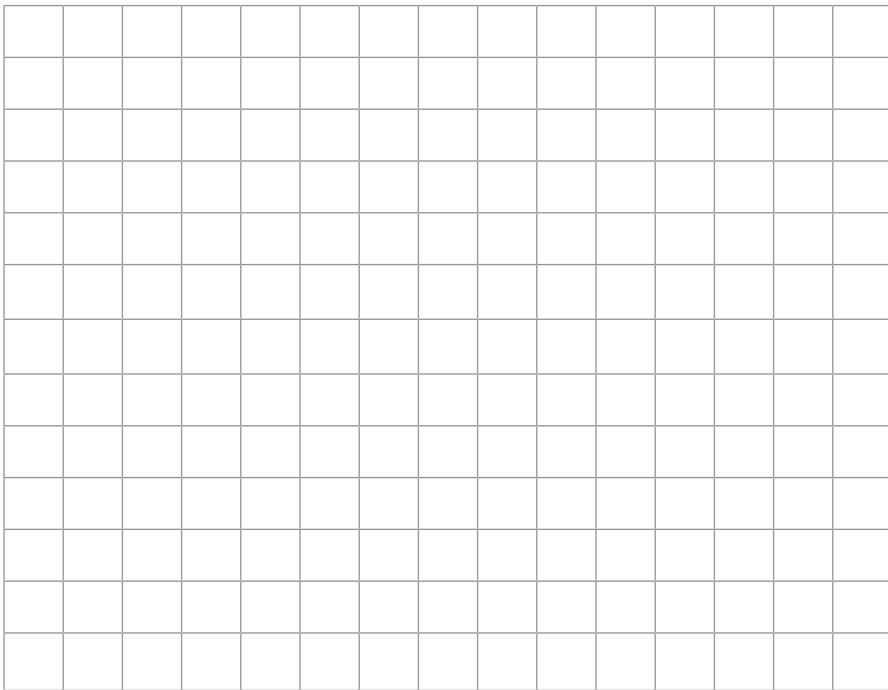
---

---

---

---

1 Square = 1 Foot



**TITAN**<sup>®</sup>  
CONTROLS

# ORION 1<sup>™</sup>

220 Volt Power Supply  
Instruction Manual



# Orion 1 – 220 Volt Power Supply

- Warnings
- Orion 1 – 220 Volt Power Supply Overview
- Troubleshooting Tips
- Controller Specifications
- Installation Example
- Warranty Information
- Service and Repair Program

## Warnings & Cautions

- Do not plug more than two 1000 Watt ballasts (220/240 Volt only!) into Orion 1- 220 Volt Power Supply
- Only use timing devices on 220 Volt power output side of circuit to control appliances
- Electrical Device. Do not use in or near water, in damp or wet areas, or when you are wet.
- Do not drop or subject to mechanical shock.
- Do not use in explosive atmospheres or near explosive materials.
- This device is not for use by children or others unaware of hazards of electricity. Misuse can cause electrical shock and lead to death.
- This product has three-pronged (grounding) plugs. Connect only to grounded, properly wired, three-pronged AC outlets. DO NOT ALTER PLUGS OR USE ADAPTORS DEFEATING GROUND CONNECTIONS.
- Use 3 wire, grounded, extension cords with ampere ratings adequate for the equipment load.
- Operate uncovered where air freely circulates and heat can dissipate. Do not enclose.
- Read and understand these instructions before using.
- To prevent tripping facility circuit breakers or fuses, connect Orion 1 “PLUG A” and “PLUG B” to AC outlets with ampere capacity for equipment connected to the Orion 1 power supply plus any other devices on the same 110/120 volt circuits. If circuit breakers or fuses disconnect, remove other equipment from the 110/120 volt circuits or connect the Orion 1 power supply to different circuits.
- DISCONNECT SYSTEM AND SEE “TROUBLESHOOTING TIPS” IF:
  1. “220 VOLTS” lamp doesn’t stay on during use.
  2. Orion 1 power supply clicks repeatedly. The Orion 1 power supply is silent during normal operation, quietly clicking twice at start up and once at shut down.
  3. Equipment loses power during operation

## WARRANTY SERVICE: Please read warranty information first

If after reviewing the troubleshooting tips the unit will still not work, you should return it to the Dealer where you purchased the controller. They will be able to further evaluate the unit and test its various components and quite possibly will be able to identify and/or fix any problems. If the Dealer is unable to fix the unit, they will return it to us for factory repair.

If there are no Dealers in your area, you may contact us directly for technical support. If we cannot help you resolve the problem over the phone, we will issue you a RMA # (return merchandise authorization) authorizing you to return the unit to us for factory reconditioning (if the unit is under warranty). Contact the number below for a RMA and shipping address. Complete the form below and include it with your unit. Also please write the RMA # on the outside of the box.

Please package the unit in its original packaging. If it is damaged in shipment we cannot be responsible.

Once we receive the unit back, we will repair the controller within 48 hours (business) and return it to you freight prepaid via FedEx or UPS ground shipment

Include the following if returning directly to Titan Controls

- Proof of purchase
- This completed form
- RMA # on the outside of the box

Return Merchandise Authorization Number (Required)

Company Name: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Phone #: \_\_\_\_\_

Email address: \_\_\_\_\_

What is the nature of the problem? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Send to your nearest location – shipping address will be given when the RMA # is issued:



[www.titancontrols.net](http://www.titancontrols.net)

For technical assistance call us at 1-888-80-Titan or 1-888-808-4826.

## Warranty Information

- Titan Controls® warrants the original purchase of this product against defects in material and workmanship under normal use for three (3) years from the date of purchase.
- During the warranty period, Titan Controls® will, at our option, and without charge, repair or replace this product if the controller or any of its components fail or malfunction.
- All returns or repairs must be accompanied by a Return Merchandise Authorization (RMA) number prior to any service of the product.
- This warranty is expressly in lieu of all other warranties, expressed or implied, including the warranties of merchantability and fitness for use and of all other obligations or liabilities on the part of the seller.
- This warranty shall not apply to this product or any part thereof which had been damaged by accident, abuse, misuse, modification, negligence, alteration or misapplication.
- Controllers with serial numbers or date tags that have been removed, altered or obliterated; broken seals or that show evidence of tampering; mismatched board serial numbers or nonconforming parts; are excluded from coverage.
- Titan Controls® makes no warranty whatsoever in respect to accessories or parts not supplied by Titan Controls®.
- Monetary refunds of the warranty will not be given.
- The Buyer assumes all responsibility regarding the use & installation of this controller.
- All warranty service is provided through the factory or an authorized service representative.
- This warranty shall apply only to the United States, including Alaska, Hawaii and territories of the United States.
- Defective controllers need to be returned with the “proof of purchase” receipt.
- For additional warranty information, contact a Titan Controls® Technical Service Representative or your Dealer.
- NOTE: Titan Controls® is a controller manufacturer. All sales offerings to the public are done through a nationwide group of Dealers. No sales offerings will be made directly to the general public.

## Service and Repair Program

- For all service and repairs please contact one of our Technical Service Representatives for a Return Merchandise Authorization (RMA) number.
- All factory service & repairs will be completed within 48 hours of receipt of controller and after authorization by customer for repairs.
- Titan Controls® will, at its discretion, repair or replace the controller.
- Factory calibration services are available for all Titan Controls®.
- Returning Units: Please contact your retail store for returns.

## Orion 1 – 220 Volt Power Supply Overview

The Orion 1 220 Volt Power Supply uses the principle that 220/240 volts AC is supplied to most facilities. The 220/240 volts is divided into 110/120 volt circuits for distribution within the building. Using 110/120 volt outlets and the Orion 1 Power Supply, the user can quickly identify and connect to the separated 110/120 volt halves of the original 220/240, restoring the 220/240 volt AC option without adding new electrical circuits or wiring to the building.

To protect people and equipment, the Orion 1 Power Supply's safety interlock blocks all output power until electrical connections are complete and correct. The Orion 1's internal circuits assure correct outlet polarity before completing electrical connections. Should power on one of the 110/120 volt supply lines be interrupted by overload or disconnect, all output power is immediately and automatically disconnected.

### Definitions of Power Circuit:

1. “110/120 VAC” means an alternating current electrical source from 108 to 125 volts AC supplied by a three pronged grounded outlet of the type commonly found in residential and commercial applications in the United States. The source can be either single phase or three phase, which is commonly found in commercial or industrial facilities.
2. “220/240 VAC” means 208 to 250 volts AC. If the power source is single phase, the voltage output of the Orion 1 will be twice the voltage of the voltage supplied, typically 220 to 240 volts. If the power source is 3 phase, the voltage output will be 1.73 times the voltage of the voltage supplied, typically 208 volts.
3. 220/240 volt power is supplied though NEMA 6-15R straight blade duplex outlet.



NEMA 6-15R  
15 Amp, 220 to 240 Volts Nominal

## Instructions for Operation

Use appropriate extension cords, as necessary, to reach 110/120 volt outlets, #16/3 or larger extension cords are recommended. The Orion 1's power supply will trip Ground Fault Interrupter (GFI) circuits or outlets. Select non-GFI outlets and circuits. If a GFI is desired, use a 220/240 volt GFI, connecting it to the 220/240 volt output of the Orion 1 power supply.

1. 110/120 Volt Connections:
  - a. Test 110/120 volt outlets using supplied Receptacle Tester.
    - Two amber “CORRECT” lights should be on. If lights give different reading, outlet is not wired correctly and Orion 1 will not operate. Have wiring corrected by a certified Electrician.
    - Press GFI test button on Receptacle Tester for 6 seconds. When released, the two amber “Correct” lights should remain on. If amber lights go off, reset GFI in circuit and move to outlet that is not GFI protected.
  - b. Connect “PLUG A” power cord to 110/120 volts AC outlet. The Orion 1 power supply will give an audible “click” as “PLUG A” is inserted into the outlet. If there is no “click,” disconnect and see Trouble Shooting, paragraph 4.
  - c. Connect “PLUG B” power cord to other 110/120 volt AC outlets until “220 Volts” lamp on front panel illuminates. (An extension cord will probably be necessary.) As “PLUG B” is inserted into the outlet, the Orion 1 power supply will give an audible “click.” If there is no “click,” disconnect and see Trouble Shooting, paragraph 4.
  - When “220 Volts” illuminates, 220 VAC is ready for use on the “220 volt power output.”
  - If “220 Volts” does not illuminate, move “Plug B” to other outlets until “220 Volts” lights.

- Only about half the outlets in any facility will complete the 220/240 VAC connection.
2. Connect equipment. SET EQUIPMENT POWER SWITCH "OFF" BEFORE CONNECTING.
    - a. Connect equipment to be powered to the "220 Volt Power Output."
    - b. Switch circuit breaker "ON." A "buzz" may be heard for a few moments when power is switched on.
    - c. Use equipment according to manufactures instructions.
  3. Care & Cleaning:
    - Before cleaning, disconnect Orion 1 Power Supply from all electrical connections. Clean case with a cloth lightly moistened with water.
    - Do not immerse.
    - Do not use organic solvents such as acetone, alcohol, or mineral spirits.

Use in well ventilated area.  
 No explosive gases, dust or other materials  
 Keep dry, away from water, oils or other liquids.  
 Avoid excessive dust.

Storage Temperature; 32°F (0°C) to 135°F (58°C)  
 Operating Temperature: 45°F ( 8°C) to 120°F (50°C)  
 Size = 3" H x 5" W x 6.5"D  
 Weight = 3 lbs

United States Patented - Specifications may change due to product and material improvements.

ETL listed for use in commercial applications.

## Troubleshooting Tips

1. "220 Volts" lamp doesn't light.
  - Make sure that power cord connectors are firmly seated.
  - Using Receptacle Tester supplied with Orion 1 power supply, check outlets for correct wiring and electrical power. If outlet is not correctly wired, have certified Electrician correct outlet wiring.
  - Continue moving "PLUG B" power cord to different outlets until "220 Volts" lamp lights. About half the outlets in any facility will complete the 220/240 volt connection.
2. "220 Volts" lamp lights, but there is no power at 220/240 volt outlet.
  - Assure that circuit breaker is switched "ON".
3. Orion 1 power supply clicks repeatedly during operation and/or equipment runs as if it is not getting enough power.
  - Power cords supplying Orion 1 power supply are too long and/or the wire too small for the amps demanded by the equipment. Use power cords with larger wire
  - For power cords over 50 feet, use #12-3 AWG three prong, grounded power cords.
4. Orion 1 trips Ground Fault Interrupters (GFI) in system and fails to operate.
  - The Orion 1 power supply does not operate on GFI protected outlets or circuits. Move power cords to non-GFI outlets or circuits. If a GFI is needed, connect a 220/240 volt GFI to the 220/240 volt outlet of the Orion 1 power supply.
5. Orion 1 fails to "click" as power cords are inserted into 110/120 volt outlets.
  - Check power at outlet with Outlet Tester. Correct if necessary.
  - If there is power at the 110/120 volt outlet, but no "click" from the Orion 1 power supply when the plug is inserted, the safety circuits are not operating. Call Titan Controls for assistance.

## Controller Specifications:

Input Voltage = 115 +/- 10% Volts AC, 60 HZ, non-GFI circuits  
 Cord set = Two power cords, 72 inches each, standard NEMA 5-15 plugs  
 15 amperes, each line  
 Output Voltage = Single Phase Input: 230 Volts AC nominal (2 times input voltage)  
 Three Phase Input: 208 Volts AC nominal (1.732 times input voltage)  
 Output Power = 2760 watts at 115volts AC, single phase, input  
 Output Current = 12A max., continuous  
 Output receptacle = NEMA 6-15R  
 Power Consumption = 8 watts at no load  
 Environment = Indoor use only.

## Installation Example

### Controlling a Fan, Air Conditioner or Ballast

