

IIS-550-I

550 WATT
EMERGENCY POWER

FOR
FLUORESCENT,
INCANDESCENT,
AND LED LOADS



DR DIMMING RELAY
OPTION AVAILABLE

The IOTA **IIS-550-I** is a UL Listed stand-alone sine wave output inverter designed to provide power to designated emergency lighting fixtures. In a power loss situation, the IOTA **IIS-550-I** will supply **550W** of power from the onboard battery supply. The IOTA **IIS-550-I** works in conjunction with incandescent, LED, and fluorescent lamp and fixture types and will automatically run switched, normally-on, or normally-off designated emergency fixtures. The **IIS-550-I** features a surface mount housing and comes with a three-year warranty and seven-year pro-rata battery warranty.

TECHNICAL SPECIFICATIONS

Input Voltage	(Dual) 120/277V, 60Hz
Input Rating (bulk)	675 Watts
Output Voltage	(Dual) 120/277V, 60Hz
Output Power	550 Watts
	at .9 leading to .9 lagging PF
Lamps Operated	LED, Fluorescent, Incandescent
Transfer Time	less than 50 milliseconds
Emergency Operation	90 minutes
Voltage Regulation (emergency)	+/- 2% @ 15% to 110% load
Frequency Regulation (emergency)	+/- .5%
Load Power Factor Range9 leading to .9 lagging
Operating Temp	20° to 30° C
Battery	Valve Regulated Lead Acid (VRLA)
Weight	145 lbs.
Approval	UL 924 Listed



OPERATES:



FLUORESCENT



LED



INCANDESCENT

FEATURES

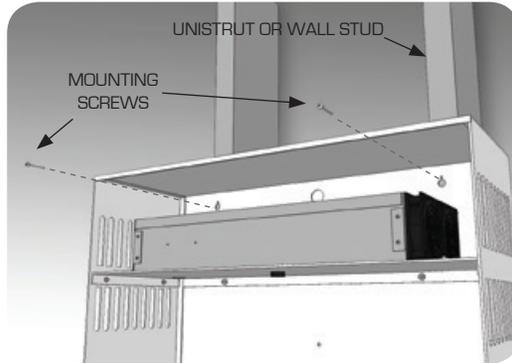
- Emergency lighting supplied from one convenient source
- Pure sine wave output
- Operates incandescent, LED, and fluorescent fixtures including fixtures with dimmable fluorescent ballasts or LED drivers
- Includes momentary contact test switch, yellow ready indicator, green inverter-on indicator, and red charging indicator
- Dual voltage 120/277 60Hz
- High efficiency pure sine wave inverter
- Variable-rate, temperature-compensated charger
- Valve Regulated Lead Acid (VRLA) battery provides long-life and is maintenance free
- Line voltage allows for remote mounting of emergency fixtures at distances up to 1000 feet
- Resettable output circuit breaker provides protection against circuit overload
- Low Battery Voltage Disconnect
- Line Latch Protection
- Allows for operation of switched fixtures
- Dimming Relay option for dimming control applications
- Meets or exceeds all National Electrical Code and Life Safety Code Emergency Lighting Requirements
- Durable 16 gauge steel housing design with white semi-gloss powder-coat paint finish
- 3/7 Pro-Rata Warranty

ORDERING GUIDE

Use the Ordering Guide below to determine the Catalog # of the model required for your application.

IIS-550-I-

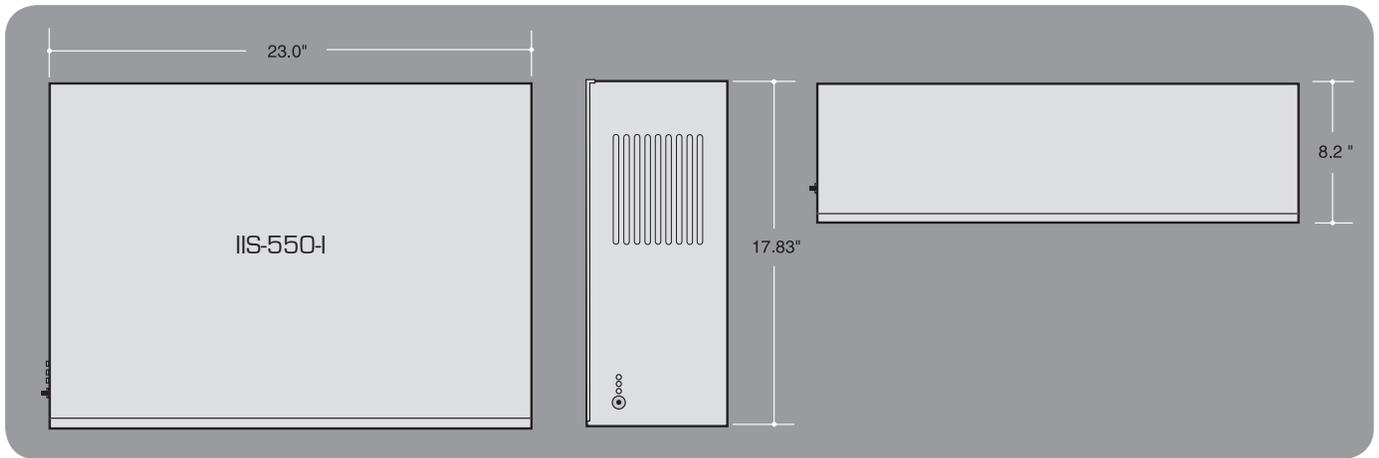
Surface Mount design for surface or shelf mounting. Keyhole slots at the back of the unit are spaced for secure mounting to the wall's unistrut or studs. After AC supply and fixture leads are routed to the wall location, the IIS-550-I is secured to the wall unistrut or studs. Dual knockouts are present on the sides of the unit for separate input and output conduits external to the wall if needed. An additional hole is provided to prevent inadvertent lifting of the unit from the keyholes. Always consult local codes for structural requirements when mounting the unit.



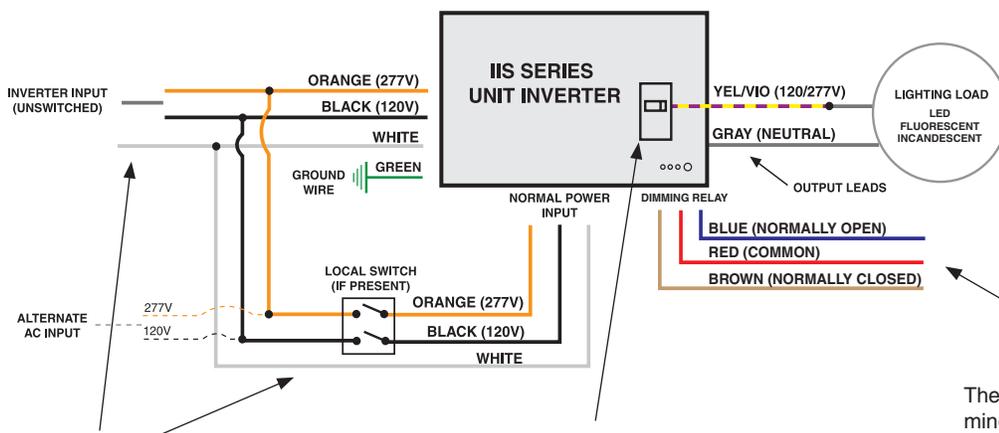
DR Dimming Relay (Optional) Refer to Page 14 for DR application details.

(Blank) No Dimming Relay option.

DIMENSIONS



WIRING



DR DIMMING RELAY OPTION AVAILABLE

INPUT LEADS

The IIS Inverter utilizes two sets of input leads: one to provide unswitched power to the inverter system and a second to serve as a normal power input to the lighting load. Any switch for the designated emergency circuit will be present on the Normal Power Input leads. For Emergency Operation Only applications, the Normal Input leads are not needed and would remain disconnected and capped.

INTERNAL CIRCUIT BREAKER

The internal circuit breaker protects the inverter from overload on the output side of the unit. Internally, the appropriate voltage lead is selected for connection to the line side of the circuit breaker and the designated emergency load connects to the single Yellow/Violet 120/277V hot lead.

The dimming relay leads allow for a dimming signal to operate the luminaires in the desired, dimmed state during normal operation. The IIS inverter will then bypass the dimming control to operate fixtures at full light output in the event of a loss of normal AC power. Additionally, if desired, the dimming leads can be wired to operate the luminaires at a reduced lumen output setting based on the dimmable driver(s) being used during emergency operation. Refer to Page 14 for details.



The “DR” Dimming Relay Option provides additional capability when used with dimming controls. The DR option can be used as either a Dimmer Bypass or to accommodate an EM Dimming Signal. Refer to the descriptions and diagrams below for application details. The Dimming Relay is available as an additional option on select IIS Inverter Models (IIS-125, IIS-375-LED, and IIS-550-I). Add the “-DR” suffix to specify the Dimming Relay feature.

IIS-125-CG

IIS-125-SM

IIS-375-LED

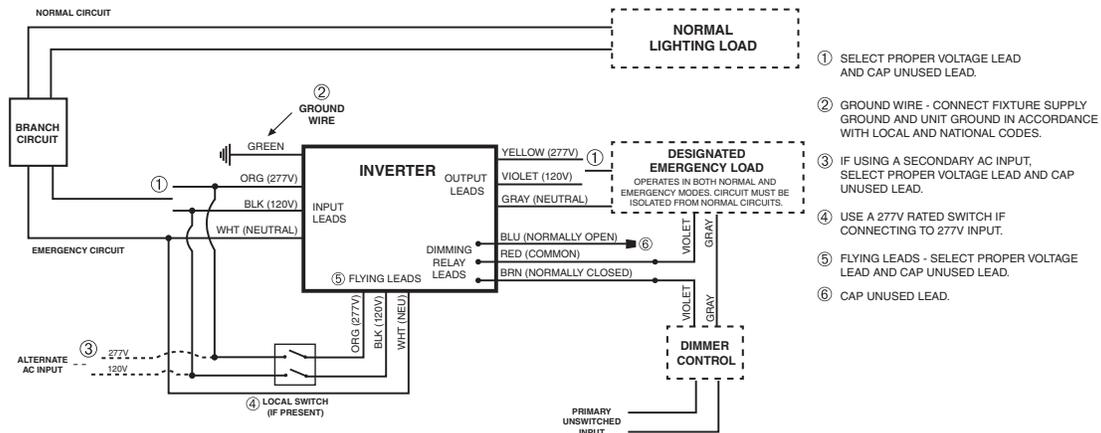
IIS-550-I

-DR

Add ‘-DR’ to Model Number when requiring the Dimming Relay feature.

Application 1 - Dimmer Bypass

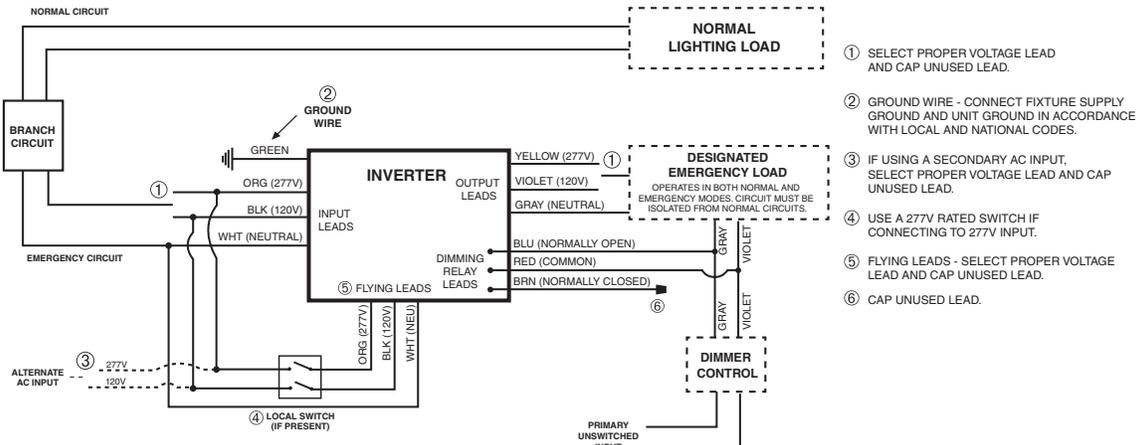
The Dimming Relay contacts provide electrical continuity during normal power conditions allowing your dimming signal to operate the luminaire in the desired, dimmed state. When the inverter transfers into the emergency mode, the dimming relay contacts electrically open the 0-10 dimming reference signal forcing the luminaire to operate at full lumen output regardless of dimmer setting (IIS-125 Diagram shown).



- ① SELECT PROPER VOLTAGE LEAD AND CAP UNUSED LEAD.
- ② GROUND WIRE - CONNECT FIXTURE SUPPLY GROUND AND UNIT GROUND IN ACCORDANCE WITH LOCAL AND NATIONAL CODES.
- ③ IF USING A SECONDARY AC INPUT, SELECT PROPER VOLTAGE LEAD AND CAP UNUSED LEAD.
- ④ USE A 277V RATED SWITCH IF CONNECTING TO 277V INPUT.
- ⑤ FLYING LEADS - SELECT PROPER VOLTAGE LEAD AND CAP UNUSED LEAD.
- ⑥ CAP UNUSED LEAD.

Application 2 - EM Dimming Signal

The Dimming Relay contacts are electrically open during normal power conditions allowing your dimming signal to operate the luminaire in the desired, dimmed state. When the inverter transfers into the emergency mode, the dimming relay contacts electrically short the 0-10 dimming reference signal forcing the luminaire to operate at a reduced lumen output setting based on the dimmable driver being used. Verify operating results of the luminaire with the 0-10 volt reference signal shorted to assure the application and mounting height produce code-compliant egress lighting (IIS-125 Diagram shown).



- ① SELECT PROPER VOLTAGE LEAD AND CAP UNUSED LEAD.
- ② GROUND WIRE - CONNECT FIXTURE SUPPLY GROUND AND UNIT GROUND IN ACCORDANCE WITH LOCAL AND NATIONAL CODES.
- ③ IF USING A SECONDARY AC INPUT, SELECT PROPER VOLTAGE LEAD AND CAP UNUSED LEAD.
- ④ USE A 277V RATED SWITCH IF CONNECTING TO 277V INPUT.
- ⑤ FLYING LEADS - SELECT PROPER VOLTAGE LEAD AND CAP UNUSED LEAD.
- ⑥ CAP UNUSED LEAD.

Double Conversion - Double-conversion systems provide current to both the inverter and battery simultaneously. The load is operated from the inverter at all times. When AC power is lost, the inverter continues to operate the load from the battery without interruption. The IIS-350-U and IIS-350-UM utilize double-conversion to provide the load with uninterrupted power, preventing arc loss in HID lamps. **Fig. A**

Inrush Current - The maximum, instantaneous input current drawn from electrical devices when first turned on. Where inverters are concerned, the design must be capable of handling the draw on the circuit without triggering overcurrent protection features.

Leading to Lagging - Leading to Lagging is a measurement of the phase difference between two sinusoidal waves. The phase difference varies depending on the load. The IIS-125, IIS-375-I, and IIS-350-U Inverters are designed for operating loads with a .9 leading to .9 lagging power factor (PF), and IIS-375-LED and IIS-550-I operate loads with .8 leading to .8 lagging PF. **Fig. B**

Low Battery Voltage Disconnect - The Low Battery Voltage Disconnect is a safeguard that disconnects the battery when battery voltage drops to an insufficient level. Disconnecting the battery prevents damage that could occur to the inverter equipment from a low voltage condition.

Line-Latch Protection - The Line-Latch protection feature prevents the battery from prematurely resuming operation after Low Battery Voltage Disconnect. To prevent deep discharge, the battery will not resume emergency operation until AC power has been restored and charged the battery to sufficient levels.

Modified Sine Wave - A modified sine wave (sometimes referred to as a 'simulated' sine wave) is an AC current that is not a pure sine wave. Modified sine waves have some load limitations in regard to electronic equipment. Lighting loads, however, are typically unaffected by modified sine wave current. **Fig. C**

Pure Sine Wave - A pure sine wave is indicative of normal AC voltage. There are no load limitations with pure sine wave output. **Fig. D**

Uninterruptible - An uninterruptible inverter switches power from the normal AC supply to the emergency supply without interruption to the load. HID fixtures require uninterrupted power supplies in order to maintain the electrical arc that lights the lamp. Should power be interrupted to the HID fixture, the lamp will extinguish and require several minutes before returning to adequate illumination levels.

VRLA (Valve Regulated Lead Acid) Battery - A VRLA battery is a sealed maintenance-free lead-acid battery. The valve design keeps the battery sealed while allowing the venting of gasses that may be generated by over-charging.

Fig. A: Double-Conversion

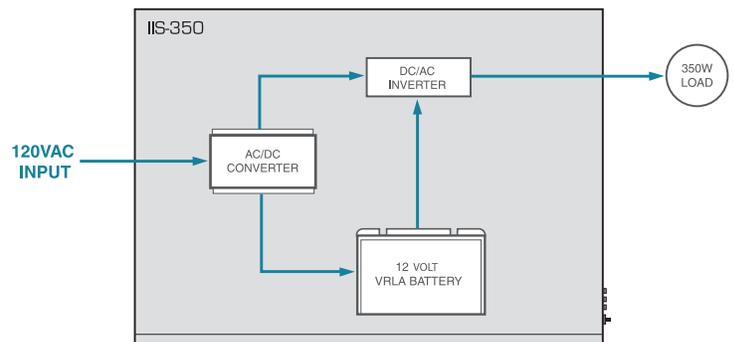


Fig. B: Leading to Lagging Power Factor

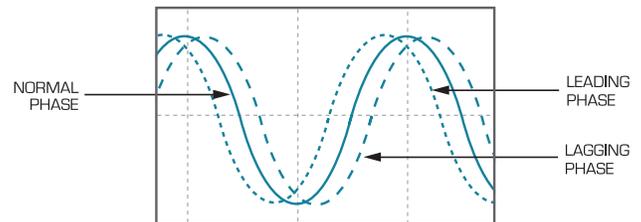


Fig. C: Modified Sine Wave

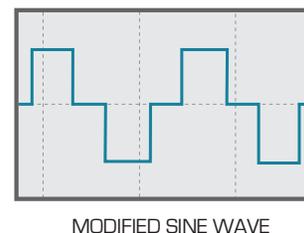


Fig. D: Pure Sine Wave

