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IOTA INVERTER SYSTEMS™

IIS-125

INSTRUCTION MANUAL

IMPORTANT SAFEGUARDS

When using electrical equipment, basic safety precautions should always be followed, including the following:

READ AND FOLLOW ALL SAFETY INSTRUCTIONS

1. **DO NOT USE OUTDOORS.**
2. Do not mount near gas or electric heaters.
3. Do not use this equipment for other than its intended use.
4. The **IIS-125** should be mounted securely and in locations and at heights where it will not readily be subjected to tampering by unauthorized personnel.
5. The use of accessory equipment and replacement parts not recommended by IOTA Engineering, LLC may cause an unsafe condition and void the warranty.
6. The AC voltage rating of this equipment is specified on the product label. Do not connect the **IIS-125** equipment to any other voltage.
7. The **IIS-125** uses sealed valve regulated lead acid batteries. Batteries can be punctured if not handled properly, therefore use caution when servicing batteries. In the event battery acid comes in contact with eyes or skin, flush with fresh water and consult a physician immediately.
8. Install in accordance with the National Electrical Code and local regulations.
9. Installation and servicing should be performed by qualified personnel.
10. Electricians and end-users need to ensure product system compatibility before final installation.

SAVE THESE INSTRUCTIONS

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THIS UNIT CONTAINS A RECHARGEABLE VALVE-REGULATED LEAD ACID BATTERY. PLEASE RECYCLE OR DISPOSE OF PROPERLY.

INSTALLATION INSTRUCTIONS

CAUTION: Before installing, make certain the A.C. power is off.

NOTE: The batteries are shipped separately. Place them in a location away from the work area to avoid damage until they are to be installed.

1. MOUNTING THE IIS-125

RECESSED TEE BAR CEILING MOUNT (IIS-125-CG)

1) Remove the side cover from the **IIS-125-CG**.

2) Remove the ceiling tile in the desired installation location.

3) Extend the unswitched, properly-rated voltage AC supply and remote fixture wires to the installation area.

4) Place the **IIS-125-CG** across the 2′ T-bars of the ceiling grid. Support the unit with wires attached to the building steel framing. Holes are provided at the top of the **IIS-125-CG** for support wire connection. **NOTE: Do not rely on the inverted T-bar structure to support the unit.**

5) Connect the conduit containing the AC supply and remote fixture leads to the **IIS-125-CG**. Use the provided knock-outs on the **IIS-125-CG** for connecting the incoming wires.

6) Remove the battery retaining bracket and install the batteries at this time, but do not connect the battery leads until other wiring is completed. Reinstall the battery bracket. **NOTE: The batteries MUST be secured in the IIS-125-CG. Do not leave the batteries loose or unsecured within the unit.**

7) Use the wiring instructions on page 3 to complete connections within the **IIS-125-CG**.

8) After installation is complete, replace properly-sized tile into the ceiling grid. The tile should rest on the flange of the **IIS-125-CG.**

SURFACE WALL MOUNT (IIS-125-SM)

1) Remove the front cover of the **IIS-125-SM** by removing the two screws at the top of the cover.

2) Extend the unswitched, properly-rated voltage AC supply and remote fixture wires to the installation area. If a recessed junction box is to be mounted in the wall behind the unit, make sure that the unswitched AC supply and any remote fixture leads have been extended to the junction box prior to mounting the **IIS-125-SM** and that there is at least 12″ of exposed leads for wiring in the unit.

3) Knock out the (2) keyhole slots at the rear of the unit and mount the **IIS-125-SM** securely to the wall. **The IIS-125 must be mounted securely.** The keyhole slots are spaced to allow mounting to the wall's unistrut or studs.

4) Connect the conduit containing the AC supply and remote fixture leads to the **IIS-125-SM**. Use the provided knock-outs on the **IIS-125-SM** for connecting the incoming wires.

5) Remove the battery retaining bracket and install the batteries at this time, but do not connect the battery leads until other wiring is completed. Reinstall the bracket **NOTE: The batteries MUST be secured in the IIS-125-SM. Do not leave the batteries loose or unsecured within the unit.**

6) Use the wiring instructions on page 3 to complete connections within the **IIS-125-SM**.

RECESSED WALL MOUNT (IIS-125-RW)

1) The **IIS-125-RW** is designed to be mounted **between** the wall studs. Cut the appropriate-sized hole (14.5″ x 22″) in the wall for mounting the **IIS-125-RW.**

2) Extend the unswitched, properly-rated voltage AC supply and remote fixture wiring to the hole.

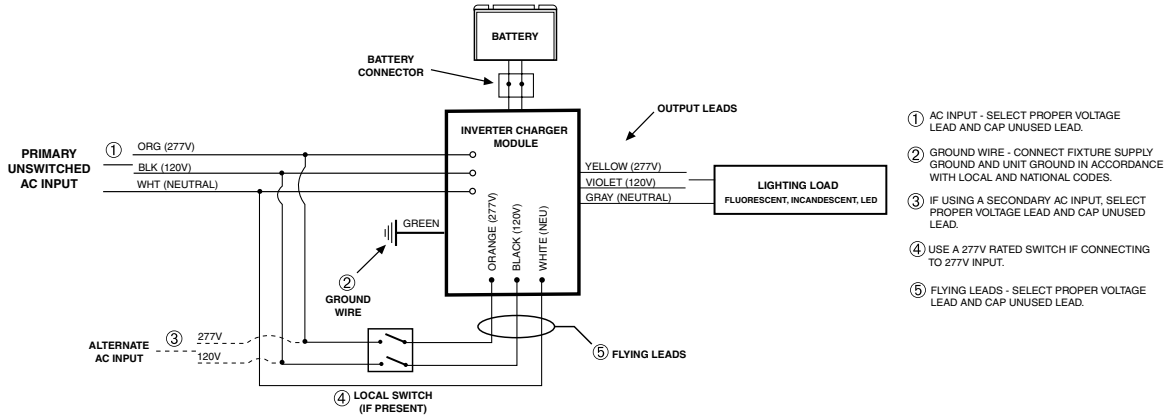
3) Remove the cover of the **IIS-125-RW**, connect the conduit containing the AC supply and remote fixture leads to the **IIS-125-RW**. Use the provided knock-outs for connecting the incoming wires. Insert the unit into the wall.

4) Mount the **IIS-125-RW** securely to the building framework using the T-slots on the sides of the unit.

5) Remove the battery retaining brackets and install the batteries at this time, but do not connect the battery leads until other wiring is completed. Replace the brackets, replacing the top bracket first.
NOTE: The batteries MUST be secured in the IIS-125-RW. Do not leave the batteries loose or unsecured within the unit.

6) Use the wiring instructions on page 3 to complete connections within the **IIS-125-RW**.

FIGURE 1 - IIS-125 WIRING CONNECTIONS



2. WIRING

1. CONNECTING THE NORMAL AC INPUT (FIGURE 1)

A. **For 120V** supply, connect the AC line wire to the BLACK lead labeled INPUT. **For 277V** supply, connect the AC line wire to the ORANGE lead labeled INPUT. **CAUTION: Cap the unused BLACK or ORANGE input wire. Failure to do so may result in equipment failure and void the warranty.**

B. Connect the Neutral wire to the WHITE lead labeled INPUT. **When making connections to the IIS-125, DO NOT connect the Input Neutral (WHITE) to the Output Neutral (GRAY).**

C. Connect the ground wire in accordance with local and national codes. A GREEN wire is provided for this purpose.

Note: If the emergency fixtures are to be NORMALLY ON or SWITCHED, you may have to connect flying lead wires to these wires as well. Refer to **Figure 1** and **STEP 2** below.

DO NOT ENERGIZE THE CIRCUIT AT THIS TIME.

2. CONNECTING REMOTE EMERGENCY FIXTURES (FIGURE 1)

A. Connect remote emergency fixtures to the correct output leads. The color code is as follows: neutral is Gray, 120V is Violet, and 277V is Yellow. All remote circuitry is to be wired in accordance with Article 700 of the National Electric Code. Do not exceed the total rating of the **IIS-125**. **When making connections to the IIS-125, DO NOT connect the Input Neutral (WHITE) to the Output Neutral (GRAY).**

B. NORMALLY-OFF FIXTURES (only come on during power failure) - Connect the AC line input wire of the fixtures to the appropriate output wires as above (120V or 277V). Connect the fixture Neutral input wire to the Neutral output wire. Refer to **Figure 1**.

C. NORMALLY-ON FIXTURES - Follow Step 2B above. Then select the proper voltage flying lead from the printed circuit board (BLACK for 120V, ORANGE for 277V) and connect to the unswitched AC input line feeding the transformer. Connect the Neutral (WHITE) flying lead coming from the printed circuit board to the unswitched AC input neutral of the supply line feeding the input wires. Refer to **Figure 1**.

D. FIXTURES ON LOCAL SWITCH (fixtures may be turned on and off locally, but will come on during power failure regardless of switch position) - Follow Step 2B above. Connect the line side of the Switch to the the unswitched AC input line connected to the transformer. Connect the load side of the Switch to the proper voltage flying lead from the printed circuit board (BLACK for 120V, ORANGE for 277V). Refer to **Figure 1**. **CAUTION: If connected to 277 volt input, use a 277V rated switch. Failure to use the proper voltage switch may result in switch failure, a shock hazard, an unsafe condition and equipment failure.**

E. ALTERNATE FEED (all fixtures are supplied on normal from an alternate circuit) - Follow Step 2B above. Then extend alternate AC input to the proper voltage flying leads from the printed circuit board (BLACK for 120V, ORANGE for 277V). If a local Switch is present, connect the alternate AC input to the Switch, then connect the proper voltage flying leads from the printed circuit board to the load side of the Switch as in Step 2D. Refer to **Fig 1**.

Consult the IIS-125 **Application Notes** for connecting the unit to specific lighting loads. Application Notes are available on the internet or through Customer Service.

F. Connect the Fixture Supply Ground to the **IIS-125** Ground.

CAUTION: Before proceeding to Wiring Step 3, make sure that all unused wires are properly capped. Failure to do so may result in an unsafe condition and equipment failure.

DO NOT ENERGIZE THE CIRCUIT AT THIS TIME.

3. CONNECTING THE BATTERIES

A. Retaining brackets are provided. **The batteries MUST be secured in the IIS-125. Do not leave the batteries loose or unsecured within the unit.**

B. Connect the batteries by plugging the connector into the receptacle on the PCB.

NOTE: Failure to connect or secure the batteries properly will result in equipment failure, an unsafe condi tion, and will void the warranty.

NOTE: The emergency indicator lights will not illuminate at this time.

4. COMPLETING INSTALLATION

A. Energize the AC supply. Only the Ready (Yellow) Indicator and the Charging (Red) Indicator will illuminate.

B. Operate the Test Switch for approximately 10 seconds. Observe that any emergency fixtures do not go out, that the Inverter On (Green) Indicator comes on, and that any normally off fixtures come on. Release the Test Switch. Normally Off fixtures and the Inverter On (Green) Indicator will extinguish. Normally On, emergency, and any switched fixtures will return to their normal operating mode.

C. Properly re-install the cover of the **IIS-125** using all the original hardware.

3. OPERATION

Normal Mode - AC power is present and operates the fixtures as intended. The **IIS-125** is in the standby charging mode. The Ready (Yellow) Indicator and Charging (Red) Indicator will be lit providing a visual indication that the unit is charging.

Emergency Mode - The AC power fails. The **IIS-125** senses the AC power failure and automatically switches to the *Emergency Mode*. All fixtures, including Normally Off or switched off fixtures, connected to the **IIS-125** will be illuminated for a minimum of 90 minutes. When the AC power is restored, the **IIS-125** switches the system back to the *Normal Mode* and resumes battery charging. See page 1 of the instruction manual.

4. TESTING

1) To test the equipment, depress the test switch. The Ready (Yellow) Indicator will go off. The designated fixtures will either illuminate if they were off or will stay on if they were normally illuminated. The Inverter On (Green) Indicator will come on.

2) Release the Test Switch. The Ready (Yellow) Indicator will come on. Normally Off emergency fixtures will extinguish.

The equipment is supplied with an automatic solid state charger designed to fully recharge the batteries within 48 hours after AC power is restored, and then maintain the batteries in a fully charged state. Allow the batteries to charge for a minimum of 48 hours after installation or power failure before conducting a 90 minute discharge test. The Life Safety Code and the Authorities Having Jurisdiction require that this test be performed on an annual basis.

“Written records of testing shall be kept by the owner for inspection by the authority having jurisdiction.”

MAINTENANCE

1) CAUTION: Always turn off the AC supply to the equipment, and disconnect the battery before servicing. Only qualified service technicians should service this equipment. The use of parts supplied by other than IOTA Engineering, LLC may result in an unsafe condition, equipment failure and will void the warranty.

2) BATTERY - The battery supplied in this equipment is a high quality maintenance-free Valve Regulated Lead Acid design. It requires no maintenance and when installed in an ambient temperature of 20°-30° C (68°-86° F) its life expectancy is 8 to 10 years. However, as stated above, the equipment must be tested for 90 minutes a minimum of once per year. When the battery will no longer operate the load for 90 minutes it must be replaced. Replace only with IOTA Engineering, LLC supplied parts. Dispose or recycle the lead-acid battery properly.

CONTACT CUSTOMER SERVICE FOR REPLACEMENT PARTS.

SERVICING SHOULD BE PERFORMED BY QUALIFIED PERSONNEL.

Consult Customer Service or visit www.iotaengineering.com for current warranty information.