



POWER-SAVE ENERGY CORP.

HID INSTRUCTION MANUAL

2 Step Model

4 Step Model



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GENERAL DESCRIPTION

The HID lighting control system is an energy conservation tool designed for HID (high intensity discharge) lighting. It is a programmable dimming system that allows absolute and complete control and flexibility at your finger tips, letting you effectively and efficiently manage how energy is used whenever possible. The system can be manually set or programmed to carry out automated tasks.

At the heart of the HID unit is an intelligent microprocessor capable of sensing the various lamp types before initiating the proper voltages. It also determines how to efficiently use each lamp type for maximum energy savings. The HID system is a single compact small unit with no moving mechanical or electronic parts which makes it all that much more efficient and easy to maintain. It consists of our newly patented magnetic transformer, controlled by a P.L.C (programmable logic controller). The P.L.C is the interface between the user and the HID, it allows for the ability to control the lighting levels while maintaining the sine wave, eliminating harmonics and maintaining the proper power factor. This is the most acceptable method of dimming HID lighting fixtures. The unit has very few parts hence, easy to install and service.

The HID unit is applicable to a wide variety of applications including streetlights, highway lights, parking areas, industrial buildings, commercial buildings, hospitals, shopping malls, schools, condominiums, buildings and sports complexes.

WARNING!

Any changes or modifications to this product not expressly approved by the manufacturer could void any assurances of safety or performance and could result in violation of any warranty.



2-STEP MODEL

PARTS LIST

1. Three (3) phase special transformer
2. One main contactor
3. One relay
4. Three (3) phase circuit breaker
5. Main disconnect
6. Two (2) single phase circuit breaker
7. Power supply 120v/ 24VDC
8. P.L.C (programmable logic controller)
9. Two (2) Fans
10. Key switch off-on
11. Alarm fault signal

GENERAL INFORMATION

Application: Street lighting and underground parking garage

The 2 step model works on 2 different voltage level settings:

1. HIGH
2. LOW

4-STEP MODEL

PARTS LIST

1. Three special phase transformers
2. 6 contactors
3. 4 contactors small
4. Relays
5. Three phase circuit breakers
6. Power supply 120V-24VDC
7. P.L.C (Programmable Logic Control)
8. Fan
9. Key switch on-off
10. Hazard Fault signal
11. Amp meters (optional)
12. Voltmeters (optional)

GENERAL INFORMATION

The 4 Step Model is suitable for commercial buildings, underground parking, streetlights, highway lighting, industrial buildings, hospitals, shopping malls, schools, sport complexes and condominiums . It has four levels of energy saving settings:

- 1) Line Voltage (hydro voltage)
- 2) High
- 3) Medium
- 4) Low

It is important to remember that changing from step to step is a gradual process. It takes approximately 180 seconds for the HID to activate the selected step.



INSTALLATION

CAUTION!

Make sure your hydro voltage amperage is balanced before installing the HID unit. The unit must also have an additional 20% line power on top of its required normal voltage requirements.

Upon receiving the HID system inspect it for any damages that may have occurred during shipping. If damage is found contact the shipping company immediately to file a claim and contact **Power-Save Energy Corp.** for possible replacement or repairs. Also inspect the panel for loose components and wiring that may have become loose during shipping.

HID ENCLOSURES

temperature should be around -10 C to +40 C and it is very important that there are no obstructions of the cooling vents. Recommended clearance of the cooling vents are 38" front and 15" on the other three sides.

SAFETY PRECAUTIONS

Use a ground wrist strap before handling the HID unit, if you do not have one, touch both of your hands to a safely grounded object or to a metal object, such as the HID cabinet. This must be done before attempting to connect the HID to live cables. The unit's door must be closed before attempting to turn it on. Before installing the HID unit, make sure all lighting fixtures are connected to one base panel otherwise only fixtures connected to the panel with the HID system will save energy.

INPUT

From the main power supply connect the power to the main disconnect.

OUTPUT

Connect the output from the HID unit to the power supply panel containing the light fixtures. After connecting all the input and output cables to the unit, double-check again to ensure that there are no loose screws or wiring.



OPERATING INSTRUCTIONS

AUTOMATIC - The unit can be preprogrammed to initiate energy savings automatically by allowing you to select the most convenient time of day and date to begin energy savings. The system will use the time and date programmed into it's memory to begin energy savings automatically and will continue to do so for up to one year or when the HID is deactivated or reprogrammed.

MANUAL - In manual mode the HID will only execute the time and date programmed into its memory only once and will need to be reprogrammed again.

At start up the system will always maintain a high voltage output (Line voltage) or whenever it regains power after a black out. Output levels will remain high for 10 minutes to allow the lighting fixtures to start up properly and to warm up. After 10 minutes the system will automatically return to it's previously set operating state.

Instantly removing voltage to the lamps arc will extinguish the lamps and will require a restart. To avoid this, the HID unit has a three minute time delay that forces changes from step to step to be made gradually rather than instantly. The gradual changes help the lighting fixtures cool slowly.

POWERING UP THE HID UNIT

1. Switch on the three circuit breakers inside the panel and then the main power switch of the HID, located outside of the panel on the door.
2. The P.L.C should now begin a count down from 10 when the count down is complete it will display "PASSWORD: 0000". At this point the unit is now ready to be programmed.

*If the unit does not energize please inspect for any loose connections and or wiring.

SELECT OPERATING MODE

Press 5 to select Automatic setup

Press 4 to Select Manual setup.

You will be prompted for a password regardless of what mode you select.

A **2-step** system will allow you 2 different energy saving modes of setup:

1. High
2. Low

A **4-step** system will allow you 4 different energy saving modes of setup:

1. Line (Hydro Voltage)
2. High
3. Medium
4. Low



Follow the instructions below to complete a setup.

SETUP

After a mode is selected you will be prompted for a password
The P.L.C should now display a "PASSWORD: 0000".

1. Enter "1234" as the password* and push accept marked by a down left reversed looking arrow. After the correct password is entered the PLC will display the previous setting it was last operating on.

***Note: THIS PASSWORD CANNOT BE CHANGED.**

If you must change the password please contact **Power-Save Energy Corp.**

2. To select a step use the plus /minus button marked by this symbol (+/-). Each time this button is pressed a new step is displayed on the P.L.C. Use it to select your desired step and press the accept button marked by a down left reversed looking arrow to save that step.

Once you have decided on a step you will need to set the time and date when the system will activate that step. The time and date you choose will only apply to this step

If you need to add another step you must apply an activation time and date to it.

And for every step you wish to add you must **re-enter the password.**

3. To set the time press (→) arrow button to advance the hour by one and (←) to decrease the hour by one. Use these buttons in combination to program a time when a step can be activated. Once you have decided on a desirable time press accept button, marked by a down left reversed looking arrow to save your settings and exit.

Note: To add another step to be activated at a different time and date, select an operating mode and repeat steps 1-3.

Note: Step 2 model will only allow **LOW** and **HIGH** steps.



FAULT TABLE

PROBLEM	Possible	SOLUTION
1. No Lighting	1. No power	1. Check main fuse 2. See green on power supply 3. Check contactor one of them must work
2. No Step Change	1. Problem P.L.C 2. Problem relay	1. Check light on P.L.C display 2. Check light display one of relay 3. Check connection control wire
3. No Control	1. Fuses control burn 2. Power supply	1. Check the fuses 2. Check green light on power supply
4. No light signal on relay	1.P.L.C fault	1. Check the P.L.C

TECHNICAL SPECIFICATIONS

Model	HID
Input voltage	120/280v-230/400v-277/480v-347/575v-600v
Output voltage	Step variable voltage 2 Step – 4 Step 8 Step 12 Step 16 Step Down
Frequency	50-60 HZ
Energy saving	20%-50%
Operating Range	2 KVA To 200 KVA
Control Voltage	24 VDC- 115 VAC-230VAC
Controller	P.L.C (Programming Logic controller)
Ambient temp.	-40°C to +40°C
Operating Mode	automatic / manual / remote when sensor (option)
Protection Rating	IP21 (IP55 option)
Cooling	Fan
Approval	CU/UL/CE/CSA

Manufacturer warranties the equipment for a period of *FIVE YEARS* from date of installation.

SHIPPING: F.O.B factory