

# ELECTRONIC BALLAST INSTALLATION INSTRUCTION

Model Number: U1-1/HOUVW

**CAUTIONARY NOTES:** Do not use this equipment for other than intended use.

1. Verify that the line voltage matches the ballast voltage.
2. Installation to be made by a qualified person in accordance with applicable codes.

## FCC Statement:

This device complies with part 18 of the FCC Rules. Operation is subject to the following two conditions. (1) This device may not cause harmful interference. (2) This device must accept any interference received, including interference that may cause undesired operation.

## FCC Warning:

This equipment has been tested and found to comply with the limits for a consumer device, pursuant to Part 18 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, used and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference in to radiate communications. However, there is no guarantee that interference will not occur in a particular installation.

If these equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This product may cause interference to radio equipment and should not be installed near maritime safety communication equipment or other critical navigation or communication equipment operating between 0.45-30 MHz.

## Features

- 120-230 V AC input.
- High power factor.
- Flexibility in different size of HO amps.
- Class P.
- Sound rating A.
- UL, cUL recognized. UL File # 177888.
- Indoor Use.

## Lamp Type and Power Consumption:

Lamp Type	RGTS24HO	RGTS20HO	RGTS16HO
Power Consumption (Watts)	42W	35W	29W

## Before Installation

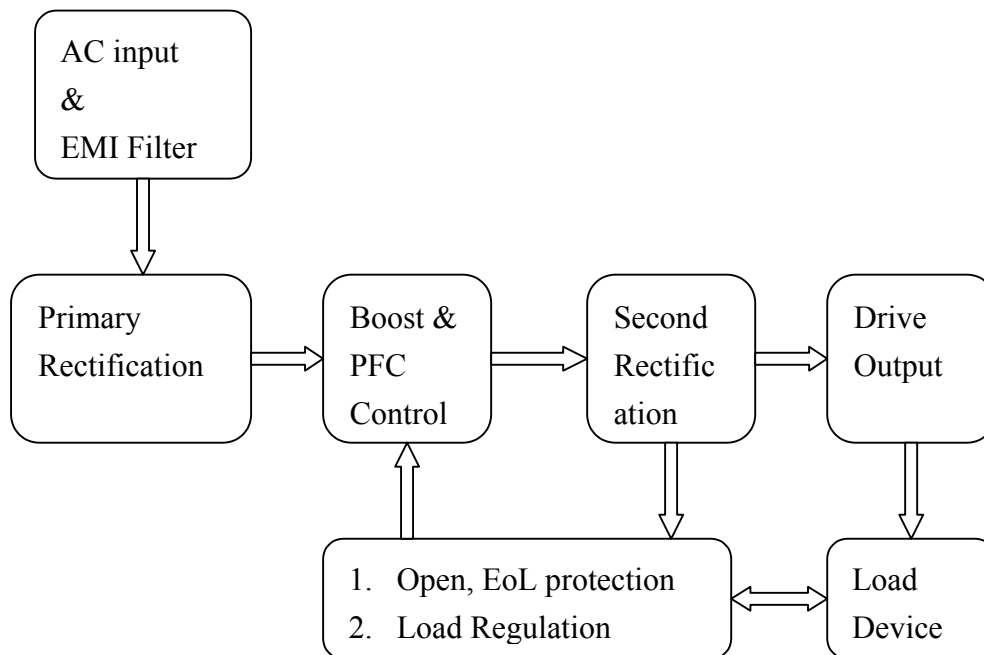
1. Disconnect line voltage before installing or replacing lamp.
2. Ballast case must be grounded.
3. Place the ballast to a stable support and fix it.

## Installation

1. Please connect the lamp with ballast according to the label on the ballast. Ballast supports only the same type lamps specified on the product label.
2. Connect the AC power line. Connect the back wire to **L** terminal and white to **N** terminal of the AC source.
3. The both connection of black and white power wire must be fully insulated.

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### U1-1/HOUVW Circuit Block Diagram



### Functional Description

#### AC input and EMI Filter:

C1, C27, L2, C3 and T1 are combined to a filter circuit for conduction suppression.

#### Primary Rectification

The C5 is connected to the positive output of the bridge rectified (D1) as a high frequency filter.

#### Boost & PFC Control:

The IC MC33262 is the main functional parts in the section, these integrated circuits feature a one quadrant multiplier for near unity power factor, and protective features consisting of an over-voltage comparator to eliminate runaway output due to load removal, input under-voltage lockout with hysteresis, and limitation for maximum peak switch current, and a totem pole output for driving a power MOSFET.

T2, Q1, D8, C11 and U1 constituted a boost type of circuit, providing the power to the next half bridge driving circuit. R31 and C31 are snubber circuit.

#### Second Rectification

The pin 7 of T2 provided the DC power to U2 via D6, R10 and C14.

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### **Drive output**

IR2153 is a self-OSC half-bridge driver, pin 7 is H output, pin 5 is L output, these two pins drives MOSFET Q4 & Q5 separately, Q6 & Q7 are using to eliminate the gate capacitance.

This block circuits provides a constant current to drive the UV lamps.

### **Load Device**

The suited lamps type for the ballast are RGTS24HO, or RGTS20HO or RGTS16HO.

### **Open & EoL protection**

Q2, D10, Q8, C22, R27, R30, D12 are included in the protection circuit, the trigger signal was initialed from the node of R28, there are two way to catch the error signal, One is the coming from the load voltage of C30, the other is C29. Once the lamps open or fading, the error signal will charge to C22, when the voltage level gets more higher enough to turn on D10, then the Q2 SCR will be trigged to shut down U1, the ballast is stopped.

Turn off AC input power and then replace new lamp, then the ballast can be restarted.