

ERDRC Installation Guide

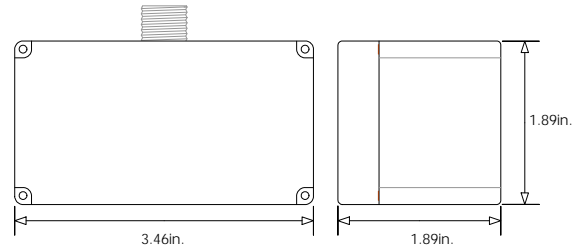
This guide cover the models number ERDRC-CC, ERDRC-C, ERDRC-PC, ERDRC-P, ERDRC-OC, and ERDRC-O. The models ERDRC-xC are equipped with EnOcean 315MHz radios and the ERDRC-X models have the EnOcean 868MHz radios.

NOTE: ELECTRICAL SHOCK HAZARD; All models of the ERDRC use High Voltage and should only be installed by a qualified installer or electrician. Follow all applicable electrical codes in the country of installation.

Mounting the ERDRC

The ERDRC is mounted to an electrical junction box or panel with a ½” threaded nipple. The antenna for the controller is embedded in the housing requiring the ERDRC to be mounted on the outside of the junction box.

The ERDRC controller products are intended to be used with switches, sensors and actuators enabled with EnOcean PTM or STM transmitters. Locating the wireless transmitters to work with the installed ERDRC controller requires planning. Careful consideration should be made for locating the controllers based on the construction materials in the space and possibility of tenant’s furniture disrupting the transmissions. Please refer to the range planning guide downloaded from www.echoflexsolutions.com/files/Reliablerangeplanning_0308.pdf



Wiring the ERDRC:

Power to the controller is connected between the White (Neutral) and the Black (120V). Optionally, based on model number, commercial voltages are applied between the White (Neutral) and the Brown(277V) or Yellow(347V). (see wiring diagram). Use only approved wire. Cap off all unused wires.

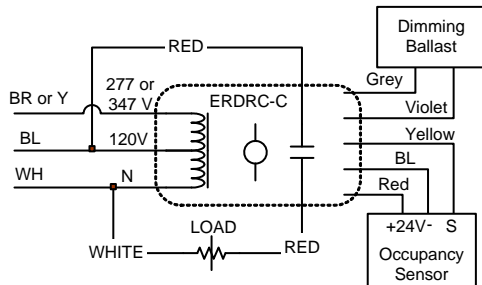


Diagram 1: 120VAC wiring ERDRC-C

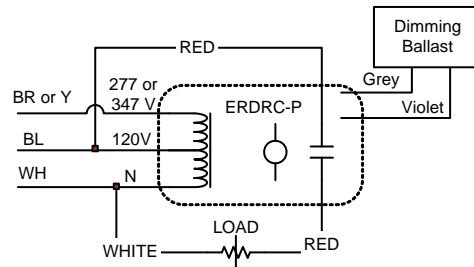


Diagram 1: 120VAC ERDRC-P

	Connection	Color	Description	Specifications
High Voltage	Electrical Load x 2	Red	Relay load connections	14AWG Stranded TEW (600V)
	Neutral – line voltage	White	Power input connection	18AWG Stranded
	120 VAC line voltage	Black	Power input connection	18AWG Stranded
	277 VAC line voltage*	Brown	Power input connection	18AWG Stranded
	347 VAC line voltage*	Yellow	Power input connection	18AWG Stranded
Low Voltage	Ballast Common	Grey	Dimming ballast common	22AWG (300V)
	0-10VDC +	Violet	Dimming ballast control signal	22AWG (300V)
	Control Signal*	Yellow	Control input from Occ. sensor	22AWG (300V)
	Common*	Black	Power output to Occ sensor	22AWG (300V)
	24 VDC +*	Red	Power output to Occ sensor	22AWG (300V)

*not used in all models

Operating Modes: There are six operating modes for the ERDRC controllers. The ERDRC will select the operating mode depending on the switches and sensors learned.

1. **Wireless Switch Only** - Once a switch has been learned to the ERDRC, it will switch the light ON or OFF. For dimming ballast lights, holding the switch in the ON or OFF position will dim the light up or down. A timeout period can be used with the switch; refer to the *Time-Out* period in the SmartClick configuration section

2. **Wireless Switch with Occupancy Sensor** – This mode has all the characteristics of mode 1 with the addition of controlling the lights ON or OFF through occupancy detection. To set the Time-Out period after last occupancy detection or to activate the lights immediately ON with motion, refer to the *Time-Out* period and *Auto-ON* sections of the SmartClick configuration section.
3. **Wireless Switch with Photocell Sensor** – This mode can only be used with dimming ballasts. Only 1 photocell sensor can be learned to a ERDRC controller. This mode has all the characteristics of mode 1 with the addition of the light activating ON or OFF according to light level setpoints and the photocell’s reading. To set the setpoints, refer to the *Photo ON*, *Photo OFF* setpoints sections of the SmartClick configuration section.
4. **Wireless Switch with Occ. and Photocell** - This mode has all the characteristics of mode 2 and 3
5. **Occupancy Sensor Only** - see mode 2
6. **Occupancy with Photocell Sensor** - see mode 2 and 3

Diagnostic LED’s and buttons

LEARN button – The LEARN button can be used to learn a switch or sensor to the ERDRC controller.

1. Insert a small flat-head screwdriver or pen into the LEARN hole depressing the button for a half second. In LEARN mode the Learn led will stay ON and the Power led will toggle every 2 seconds.
2. Using the switch or sensor that you want to LEARN to the controller, press the switch ON or press the sensor’s TEACH button. The power led will remain lit for 4 seconds while it LEARNs the new device. It will resume toggling allowing you to TEACH another device up to a total of 30 devices. Activating TEACH mode from a switch or sensor that is already learned to a controller, will remove or un-learn it from the controller.
3. To exit LEARN mode, depress the LEARN button on the ERDRC controller again for a half second. LEARN mode will time out after no activity in 30 seconds.

CLEAR button – The CLEAR button erases all switches and sensors learned to the ERDRC controller.

Insert a small flat-head screwdriver or pen into the CLEAR hole depressing the button for 5 seconds. The Learn led will flash ON for 1 second and then OFF to complete the step.

LED’s – The table below defines the LED activity and the associated mode of the controller.

Description	LEARN led	Power led	
LEARN mode	ON	Toggle 2 seconds	
Saving new device	ON	ON 4 seconds	
CLEAR mode	ON 1 second	n/a	
Normal Mode – No Switch learned	OFF	ON with relay closed	Default state
Normal Mode - Switch learned	OFF	Blink once*	
Normal Mode - Occ. sensor learned	OFF	Blink twice*	
Normal Mode - Photo sensor learned	OFF	Blink three*	

* repeated sequential cycle indicating the types of devices learned

Hardware Specifications

Power Supply	120/277 VAC or 120/347 VAC
Power Consumption	4.0 W under full load
Outputs	Relay rating 15A @ 347 VAC or 20A @ 120 or 277 VAC
Inputs	LEARN and CLEAR buttons for sensor assignment
Communications	315 MHz [TCM200] or 868 MHz [RCM120] EnOcean radio
Antenna	Integrated 15cm whip (315 MHz), 9cm (868 MHz)

Mechanical Specifications

Operating Temperature	14°F to 113°F (-10°C to 45°C)
Relative Humidity	5% to 95% RH (non-condensing)
Weight	13.5 oz (385 gms.)
Dimensions	3.5" x 1.9" x 1.9" (88 mm x 48 mm x 48 mm)
Mounting	½" nipple

Agency Listing and Compliance

UL 508 – Industrial Control Equipment, UL 5085 Part 3 – Low Voltage Transformers
 CSA CS 22.2 #0-M91, #66.3-06, #14-05
 FCC Part 15.231 - Remote Control Transmitter

SmartClick™ - Follow the directions below to configure one or more controllers.

Switch Assignment - You may use SmartClick to learn a switch to a ERDRC controller if the controller has no existing switches or sensors assigned. Click the switch rapidly ON 3 times, OFF 3 times and then ON 3 times.

STEP 1: Configuration Mode - To enter SmartClick configuration mode, you use the switch assigned to the controller(s) and then select which controller you wish to configure. With the light OFF, push the switch OFF and hold for 10 seconds until the light comes ON; you are now in configuration mode. Any controller that has the same switch assigned will also be in config. mode and will be ON. Scroll through the controllers using the switch – only one or all controllers can be selected. Make your selection by pushing the switch ON for 5 seconds or until the light blinks.

STEP 2: Selecting a Configuration Setting - You can scroll through the configuration table by clicking ON to move up and OFF to move down through the table. The light will blink the corresponding number of the selected setting. To select a configuration setting, press and hold ON for 3 seconds.

STEP 3: Editing a setting - Make the changes to the settings and exit back to the configuration table by pressing and holding ON for 3 seconds. The light will resume blinking indicating the selection.

Step 4: Saving and Exit - At any time you may save your changes and exit the configuration mode by pressing and holding OFF for 10 seconds

Parameter Definitions

Remote Learn – Use this mode to learn other switches and sensors. The light will start toggling when entering this mode, assign the new switch by clicking ON, remove by clicking OFF. Assign new sensors by pressing the TEACH button on the sensor. The light will resume toggling after 4 seconds.

Remote Clear – You may clear any switch assignment to a controller by clicking ON 5 times, click 5 more times to clear all switches. To complete the clear, hold OFF for 5 seconds will exit configuration to normal operating mode. If you unassign all switches the light will go on or full brightness.

Repeater Function Enable – Turn on or off the repeater functionality of the controller, this parameter does not effect other controller features. The light output will reflect the status of this feature.

Enable Status Broadcast – Controller transmits status to other receivers/gateways. The light output will reflect the status of this feature.

Time-Out and Occupancy Time-Out – Use this setting to select the time-out period for either occupancy mode or manual ON with Auto-off. In occupancy mode, the lights will trigger OFF after the defined period has timed out from the last detected motion. In Manual ON, Auto-OFF the lights trigger OFF after the defined period has elapsed.

Auto-ON Enable – Use with occupancy sensors to trigger light ON with motion. Use only powered occupancy sensors for this configuration. The light output will reflect the status of this feature

Dimming Ballast Configuration – To set the configuration for a dimming ballast, click ON for active or OFF to deactivate. The light output will reflect the status of this feature

Photocell OFF Setpoint – Default setting is 60%. Adjust the light level to the brightness level when the light should trigger OFF. For dimming ballasts, there are 10 steps 10% to 100% - the ballast output will dim to the step level. For non-dimming ballasts, 5 steps, 20% to 100% - the light will blink the step count.

Maximum Dimming Output - Use only with dimming ballasts, default is 100% output. Click OFF to decrease this setting in 2% increments, for 88%, click OFF 6 times. The ballast will dim to the light level setting.

Broadcast Occupancy Transmit – Configure the controller to broadcast occupancy state to other controllers in the same Switch group. The light output will reflect the status of this feature

LAMP status	Start	Step 1	Step 2	Step 3	Step 4	
	OFF	Enter Configuration Process	Select Parameter	Edit Parameter	Save + Exit	
	ON	ON	Blinking		OFF	
LEARN a switch or sensor	⇨	<p>1) Using a switch assigned to the controller and with the light OFF, hold OFF for 10 seconds until the light comes ON.</p> <p>2) If the switch is assigned to more controllers then all will be in configuration mode. Click ON to move through the list of controllers.</p> <p>3) Wait for the lamp to turn ON that you wish to edit and hold ON for 5 seconds.</p>	⇨	⇄	Assign switches and sensors as normal by pushing the TEACH button or clicking the switch	
CLEAR switches and sensors	⇨		⇨	Click ON once	⇄	Click ON 5 times to clear switch, click ON 5 more times to clear ALL (10 clicks total). Press and hold OFF for 5 seconds to complete step
Enable repeater Function	⇨		⇨	Click ON twice	⇄	Click ON to activate, OFF to deactivate
Enable status broadcast	⇨		⇨	Click ON 3 times	⇄	Click ON to activate, OFF to deactivate
Configure time-outs	⇨		⇨	Click ON 4 times	⇄	Click ON x times per table below
Enable Auto-ON/Manual-ON	⇨		⇨	Click ON 5 times	⇄	Click ON to activate, OFF to deactivate
Enable dimming ballast output	⇨		⇨	Click ON 6 times	⇄	Click ON to activate, OFF to deactivate
Photocell OFF set point	⇨		⇨	Click ON 7 times	⇄	Click ON to increase the light level when the light should turn OFF. Click OFF to lower the level
Maximum dimming output	⇨		⇨	Click ON 8 times	⇄	Default is 100%. Click OFF to decrease maximum output in 2% increments
Broadcast occupancy transmit	⇨		⇨	Click ON 9 times	⇄	Click ON to activate, OFF to deactivate

Click ON to move up through the list, OFF to move down

Press and hold ON for 3 seconds

Press and hold OFF for 5 seconds

Code	Occ.Period	Auto-Off
ON	0	never
1 blink	5	30
2 blink	10	60
3 blink	15	95
4 blink	20	120
5 blink	25	150