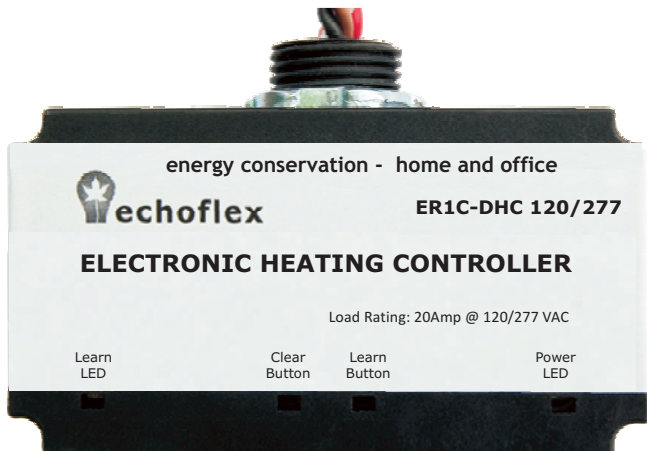


ER1C-DHC installation guide



Echoflex Solutions, Inc.

1, 38924 Queens Way | Squamish | British Columbia
Canada V8B 0K8

Toll Free: (888) 324-6359
sales@echoflexsolutions.com |
www.echoflexsolutions.com

© 2011 Echoflex Solutions, Inc.

Specifications subject to change without notice.

Part # 8DC-5214 | Revision 1.0

Product Overview

Today's facility operator needs an effective solution to integrate temperature control and lighting while maintaining an occupant's comfort level and reducing consumed energy. Installation of a network automation system is a disruptive and costly solution that does not offer attractive returns on the investment.

Echoflex answers this need with the Smart Space Heating Controller that interfaces with wireless sensors to provide control of heating equipment.

Ideal for controlling spaces with dedicated electrical heating equipment, Echoflex's temperature controller has a line voltage relay for direct connection to the electrical circuit.

Thermostats, occupancy sensors and door/window switches activate night set-back or unoccupied setpoints for equipment while also controlling room lighting providing a tight sequence of integration and control. Using wireless technology to interface with the room's environment eliminates much of the wiring normally required for this level of distributed control. This translates into quick installations with less disruption to occupants allowing facilities to accelerate retrofit schedules and start saving money sooner.

This guide covers model numbers ER1C-DHC which is equipped with an EnOcean 315 MHz radios.

The package includes the ER1C controller and installation guide.

Planning the Installation

The ER1C-DHC controller is 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 ER1C-DHC 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. Fire doors, elevator shafts or any large metal products will disrupt wireless transmissions.

One method of planning the installation is to draw 30m (100 feet) diameter circles on floor-plan

drawings to identify optimal transmitter and controller locations. Refer to the table below for range considerations with common materials.

Material	Signal Range-typical
-----------------	-----------------------------

Line of site:	100' (30m) corridors 330' (100m) open halls
Plasterboard:	100' (30m), through 5 walls
Brick, Aerated Concrete:	66' (20m), 3 walls
FerroConcrete, Ceiling:	33' (10m), 1 ceiling

An alternative method is to use a hand held EPM300C for on-site range testing and location suitability. The EPM300C provides the convenience of a hand-held device indicating signal strength from transmitters. The EPM300C will verify proper signal reception at your intended controller locations.

For more information about range planning, please refer to the range planning guide downloaded from "http://www.echoflexsolutions.com/files/downloads/Reliable Range Planning_0308.pdf"

Sequence of Operation

The ER1C-DHC connects to heating equipment and activates the relay when the temperature value falls below the set point.

- The relay will stay active until the temperature value is equal to the set point value plus 0.5°C (1°F).
- The default operational set point is 21°C (70°F).
- The set point adjustment knob modulates the operational set point $\pm 3^{\circ}\text{C}$ ($\pm 5.4^{\circ}\text{F}$) to a full range of 18°C to 24°C (64.5°F to 75°F).
- If a window/door switch is used with the ER1C-DHC and left in the open state indicating an open window/door, the operational set point will decrease or setback 3°C ($\pm 5.4^{\circ}\text{F}$). There is a 15 minute egress timer when transitioning from occupied to unoccupied. The door/window contact has a 30 second timer associated with it which must expire before the setting back the operational set point.

Preparing to Install

The ER1C-DHC is mounted to an electrical junction box or panel with a 3/4" threaded nipple. The antenna for the controller is external to the housing requiring the ER1C-DHC to be mounted on the outside of the junction box before the load in the circuit.

You will require hand tools to gain access to the

junction box and remove any cover plates or other hardware.

Use with a remote temperatures sensor and window/door switches

The ER1C-DHC will work with the Echoflex MT-17, MC-17 and MCT-17 window/door switches and support the optional temperature set point adjustment feature.

OPERATION NOTE:

- 1) At least one remote temperature sensor must be linked to the ER1C-DHC for proper operation.
- 2) Do not link more than one sensor with a set point adjustment.

Important Safety Instructions

WARNING:

ELECTRICAL SHOCK HAZARD

THE ER1C-DHC SHOULD ONLY BE INSTALLED BY A QUALIFIED INSTALLER OR ELECTRICIAN. FOLLOW ALL APPLICABLE ELECTRICAL CODES IN THE COUNTRY OF INSTALLATION. FOR INDOOR USE ONLY.

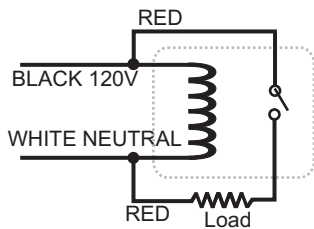


Installing the ER1C-DHC

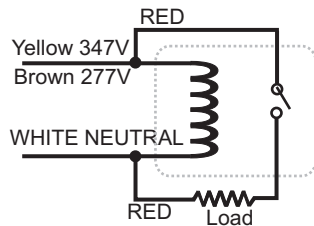
Review these instructions completely before installing the ER1C-DHC controller.

- 1) Locate the circuit breaker panel and turn off the power to the circuit.
- 2) Remove all face plates and other hardware from the junction box so you can access the high voltage wires.
- 3) The ER1C-DHC is mounted to the exterior of the junction box or panel with the 3/4" threaded nipple.
- 3) Refer to the wiring diagram to connect the ER1C-DHC to the line power, neutral and load wires. Use wire nuts on all connections and cap any bare wires.
- 4) Replace the junction box faceplate.
- 5) Restore power to the circuit.
- 6) Refer to the section in this guide titled **LEARN Button** to assign a switch to the controller.

ER1C-DHC 120V Wiring Diagram



ER1C-DHC 277V / 347V Wiring Diagram



Do not cut/ connect or cap the orange antenna wire

Connection	Color	Specification
LOAD x 2	Red	14AWG, 600V
Neutral	White	18AWG
Line 120VAC	Black	18AWG
Line 277VAC*	Brown	18AWG
Line 347VAC*	Yellow	18AWG

***not used in all models**

Learn and Clear Buttons

LEARN button – The LEARN button is used to link a switch or sensor to the ER1C-DHC controller.

1. Press the button in the LEARN hole for a half second. In link mode the POWER led will stay ON and the LEARN led will toggle every 2 seconds.
2. Press the sensors TEACH (or LINK) button. The LEARN led will remain lit for 4 seconds while it links the new device. It will resume toggling allowing you to link another device up to a total of 30 devices. Linking a switch or sensor that is already linked to a controller, will remove or un-link it from the controller.
3. To exit link mode, press the LEARN button on the ER1C-DHC controller again for a half second. Link mode will time out after no activity in 30 seconds.

CLEAR button – The CLEAR button erases all switches and sensors linked to the ER1C-DHC controller and resets the controller to factory default settings.

Press the button in the CLEAR hole for 5 seconds. The LEARN led will flash ON for 1 second and then OFF to complete the step.

Diagnostic LED's

The table below describes the LED activity and associated mode of the controller. The POWER LED is always ON when the controller is powered.

Description	LEARN
LINK mode	Toggle 2 sec.
Storing ID	ON 4 sec.
CLEAR mode	ON 1 sec.
Normal operation, see below	
In normal mode:	Learn led is OFF
nothing linked	Power led ON, relay closed (factory default)
Occupancy Sensor:	Learn led-one long blink followed by short blinks counting sensors
Temperature Sensor:	Learn led-two long blinks followed by short blinks counting sensors
Door/Window Switch:	Learn led-three long blinks followed by short blinks counting sensors

Hardware Specifications

Power Supply	120/277 VAC or 120/347 VAC, 60Hz
Power Consumption	4.0 W full load
Outputs	N.O. Relay rating 15A@347 VAC or 20A@120 or 227 VAC
Inputs	LEARN and CLEAR buttons for sensor assignment
Communications	315 MHz EnOcean radio

Mechanical Specifications

Operating Temperature	14° F .. 113° F (-10 °C .. 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 x 48 x 48 mm)
Mounting	¾" nipple
Antenna	Integrated whip

Agency Listing and Compliance

ETL Recognized Component	3188207
	Conforms to UL Standard 508
	Certified to CAN/CSA Std. C22.2 No.14
UL 2043 Plenum rated	
Radio Frequency	FCC Part 15.231-Remote Transmitter IC RSS-210

FCC and IC Licensing

Contains FCC ID: SZV-TCM2XXC

The enclosed device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

(I.) this device may not cause harmful interference and

(ii.) this device must accept any interference received, including interference that may cause undesired operation.

Contains IC: 5713A-TCM2XXC