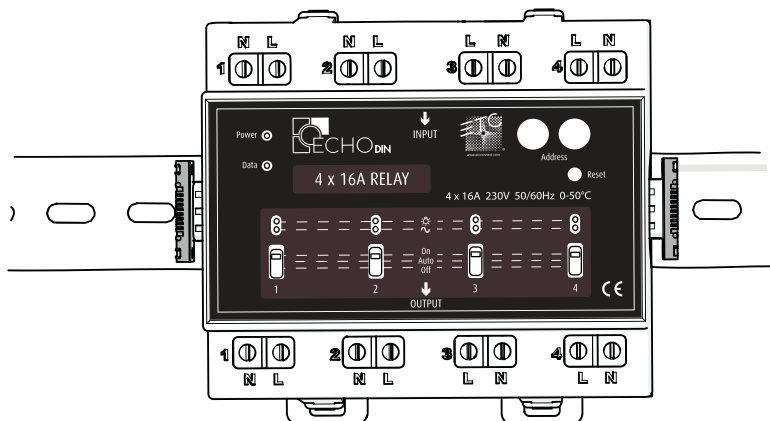


ETC Installation Guide

EchoDIN Relay Module Kit

Overview

The EchoDIN Relay Module, part of the Unison Echo™ family, is a DIN rail mountable module that includes four single pole, 16A relays. Up to 12 sets, for a total of 48 relays, can be installed for use with a single Power Control Processor. This guide details the installation and setup of a single DIN rail mountable module as part of an EchoDIN system. A DIN rail enclosure is not included.



Relay Technical Specifications

General Purpose Loads	20A @ up to 300VAC
Ballasts (HID, Electronic)	20A @ up to 300VAC
Tungsten Lighting Loads	2400W @ 120VAC 4800W @ 230VAC
Motor Loads	1/2 HP @ 120VAC 1 1/2 HP @ 220-277VAC

Relay Ratings

Isolation	5kV RMS
Life	60,000 cycles at full load

Parts and Specialty Tools Required

The following parts and specialty tools are required but not supplied, for installation:

- Small 3.35mm flat blade screwdriver.
- Insulation stripping tool.

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Cable Specification

Purpose and Type	Wire Specification	Strip length	Torque (lb/in)
Load to Relay output terminal	.50mm ² - 16mm ²	12.7mm	1.8 N-m
Circuit breaker to Relay input terminal	6mm ²	breaker side 10mm relay side 12.7mm	1.8 N-m
Load to Ground & Neutral	2.5mm ² - 25mm ²	10mm	14-10 AWG -20 lb-in 8 AWG - 25 lb-in 6-4 AWG -35 lb-in

Branch Circuit Breakers

For each relay installed, a matching branch circuit breaker must also be installed. For customer convenience, circuit breakers are available (sold separately) for field installation. To order breakers contact your ETC customer service representative and request the following part number:

- 2 pole, 16A circuit breaker - part# CB743
- 2 pole, 10A circuit breaker - part# CB900
- 2 pole, 6A circuit breaker - part# CB899

Installation



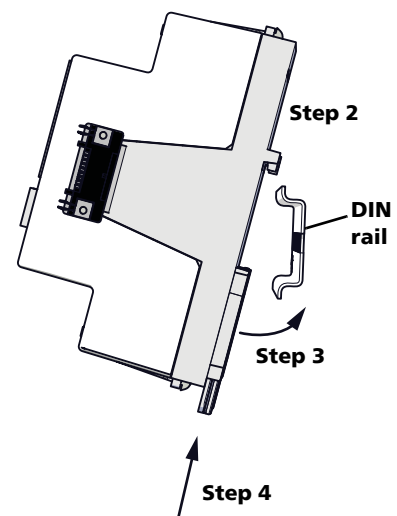
WARNING: RISK OF DEATH BY ELECTRIC SHOCK! Failure to disconnect all power to before working with the system could result in serious injury or death.

De-energize main feed system and follow appropriate Lockout/Tagout procedures as described in NFPA Standard 70E. It is important to note that electrical equipment, can present an arc flash safety hazard if improperly serviced. This is due to available large short circuit currents on the feeders of the equipment. Any work on energized equipment must comply with OSHA Electrical Safe Working Practices.

Install the relay module.

Relays are supplied in sets of four. A branch circuit breaker must be installed one-for-one to every relay installed.

- Step 1: Pull the DIN rail clip out until it is fully extended.
- Step 2: Hook top lip of the DIN rail mounting clip over the top edge of the DIN rail.
- Step 3: Rock the relay set downward so it is pressed up against the DIN rail.
- Step 4: Push both locking clips up into place securing the relay set onto the DIN rail



Connect Wiring

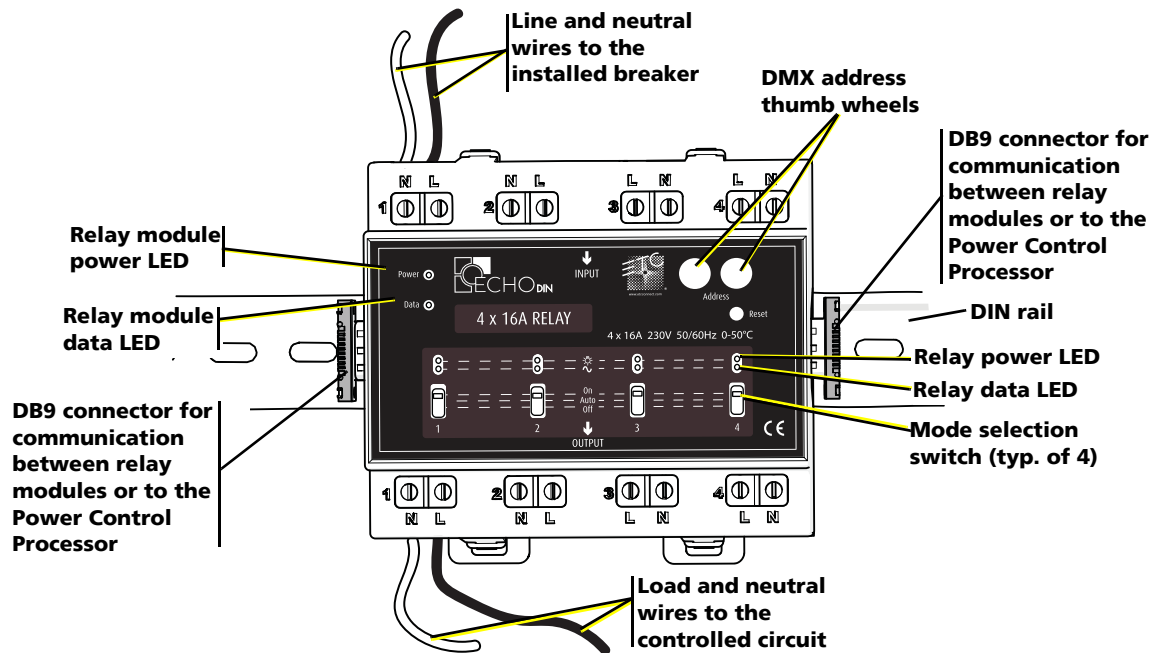
Each new relay installed into the panel requires a load connection (hot, ground, and neutral) as well as a 10 AWG wire connection between the related branch circuit breaker and the relay input terminal. Reference [Cable Specification](#) on [page 2](#).



Note: *It is good practice to label each new wire designation for future service.*

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Connect between the branch circuit breaker and the relay

- Step 1: Pull a 6mm² wire between the branch circuit breaker and the installed relay.
- Step 2: Strip 12.7mm of insulation from relay end of the wire.
- Step 3: Use a flat blade screwdriver to loosen the screw terminals for both the line (L) and neutral (N) positions on both the relay and the breaker.
- Step 4: Insert the line wire into the terminals labeled (L) and use the flat blade screwdriver to tighten the screw, securing the wire in place.
 - Follow the torque specification indicated in the [Cable Specification](#) chart on [page 2](#).
- Step 5: Pull a 6mm² neutral wire from the branch circuit breaker to the installed relay.
- Step 6: Strip 12.7mm of insulation from the relay end of the wire.
- Step 7: Insert the neutral wire into the terminal labeled (N) and use the flat blade screwdriver to tighten the screw, securing the wire in place.

Connect load hot wires to the relay.

- Step 1: Loosen the load hot screw terminal (L) using a flat blade screwdriver.
- Step 2: Strip 9-10mm of insulation from the wire.
- Step 3: Insert the wire into the terminal and secure using the flat blade screwdriver.

Connect load neutral to the neutral bar

- Step 1: Loosen a neutral screw terminal (N) using a flat blade screwdriver.
- Step 2: Strip 9-10mm of insulation from the wire.
- Step 3: Insert the wire into the terminal and secure using the flat blade screwdriver. Repeat this process for all remaining relay circuits.



CAUTION:

Dress the wire bundles neatly and remove all cuttings and debris before proceeding with the installation. Debris left in the DIN rail box may short the electronics at power up and void the factory warranty.

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EchoDIN Relay Module Kit

Connect ribbon cables

Supplied with each relay module is a ribbon cable used for communication between each relay module and the Power Control Processor.

- **If the relay module is first in line:** Noting the connector orientation, push the DB9 connector on the supplied ribbon cable onto the male DB9 connector on the Power Control Processor.
- **If the relay module is not first in line:** Noting the connector orientation, push the DB9 connector on the supplied ribbon cable onto the male DB9 connector on the previous relay module.

For additional information, reference the *EchoDIN Power Control Processor Installation Manual*, available for free download at www.etconnect.com.

Set override switches

Set the override switches to override the output of the dimmer.

- "On" forces the dimmer output on to full.
- "Off" forces the output to off.
- "Auto" allows control from the control processor.

Addressing each relay

There are two thumb wheels located on each relay module. The thumb wheels indicate the DMX start address of the relay module. For example, if the DMX address of the first relay in the module is 24, the first wheel should be set to "2" and the second wheel set to "4."

In this example, relays two through four assumes DMX address 25-27.



CAUTION: *Do not overlap DMX addresses in a single system. Overlapping addresses leads to failed system communication and control.*

LED indicators

A power status LED and a data status LED are provided for each relay as well as the complete module.

- A Power LED showing constant blue is receiving 24V.
- A Data LED showing a steady blinking green is effectively transmitting and receiving data.

Verify installation

- Remove all metal shavings and debris from the unit.
- Check wiring:
 - Are all load wires terminated to the correct relay?
 - Are all load circuits free of short circuits?
- For each relay in the panel, check the factory wiring to ensure that all terminations are secure.
- Are all circuits properly labeled for identification by service personnel?
- Lower the relay override panel back to normal operating position.

Remove the relay module

- Step 1: Using the slotted screwdriver, pry down on the locking clips until they release.
- Step 2: Once the module is free, rock it gently off of the DIN rail.

