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# ERDM SERIES

## Description

The ERDM Series is a combination of digital electronics and a reliable electromechanical relay. These devices offer a DPDT relay output for relay logic circuits, and isolation of input to output voltages. Cost effective for OEM applications, such as random starting, sequencing ON, switch de-bouncing, anti-short cycling, and other common delay-on-make applications.

### Operation (Delay-on-Make)

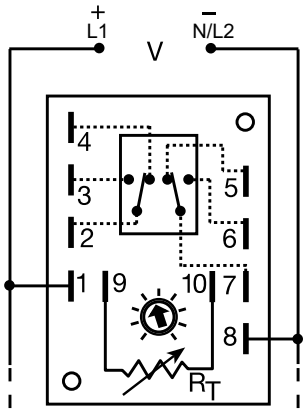
Upon application of input voltage, the time delay begins. The output is de-energized before and during the time delay. At the end of the time delay, the output energizes and remains energized until input voltage is removed.

**Reset:** Removing input voltage resets the time delay and output.

## Features & Benefits

| FEATURES | BENEFITS |
|---|---|
| **Digital integrated circuitry with electromechanical relay** | Repeat Accuracy + / - 0.5% |
| **Isolated 10A, DPDT output contacts** | Allows control of loads for AC or DC voltages |
| **Encapsulated** | Protects against shock, vibration, and humidity |

## Wiring Diagram




V = Voltage

A knob, or terminals 9 & 10 are only included on adjustable units. Relay contacts are isolated.

$R_T$ is used when external adjustment is ordered.

## Accessories

**P1004-16, P1004-16-XVersa-Pot**
Panel mountable, industrial potentiometer recommended for remote time delay adjustment.

**P1015-64** (AWG 14/16) **Female Quick Connect**
These 0.25 in. (6.35 mm) female terminals are constructed with an insulator barrel to provide strain relief.

**P1015-18 Quick Connect to Screw Adapter**
Screw adapter terminal designed for use with all modules with 0.25 in. (6.35 mm) male quick connect terminals.

## Ordering Information

| MODEL | INPUT VOLTAGE | ADJUSTMENT | TIME DELAY | MODEL | INPUT VOLTAGE | ADJUSTMENT | TIME DELAY |
|---|---|---|---|---|---|---|---|
| ERDM123 | 12VDC | Onboard knob | 0.1 - 10s | ERDM422 | 120VAC | Onboard knob | 0.1 - 5s |
| ERDM126 | 12VDC | Onboard knob | 0.6 - 60s | ERDM423 | 120VAC | Onboard knob | 0.1 - 10s |
| ERDM128 | 12VDC | Onboard knob | 0.1 - 10m | ERDM425 | 120VAC | Onboard knob | 0.3 - 30s |
| ERDM222 | 24VAC | Onboard knob | 0.1 - 5s | ERDM427 | 120VAC | Onboard knob | 0.1 - 5m |
| ERDM4130S | 120VAC | Fixed | 30s | ERDM429 | 120VAC | Onboard knob | 0.2 - 15m |
| ERDM4210 | 120VAC | Onboard knob | 1 - 100m | | | | |

If you don't find the part you need, call us for a custom product 800-843-8848

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## Specifications

### Time Delay

| | |
|---|---|
| **Type** | Digital integrated circuitry |
| **Range** | 0.1s - 500m in 11 adjustable ranges or 0.1s - 1000m fixed |
| **Adjustment** | Fixed, onboard or external adjust |
| **Repeat Accuracy** | ±0.5% |
| **Tolerance (Factory Calibration)** | ≤ ±10% |
| **Recycle Time** | ≤ 150ms |
| **Time Delay vs Temp. & Voltage** | ≤ ±2% |

### Input

| | |
|---|---|
| **Voltage** | 12, 24, or 120VDC; 24, 120, or 230VAC |
| **Tolerance** | |
| **12VDC & 24VDC/AC** | -15% - 20% |
| **120VAC/DC & 230VAC** | -20% - 10% |
| **AC Line Frequency** | 50/60 Hz |

### Output

| | |
|---|---|
| **Type** | Isolated relay contacts |
| **Form** | DPDT |
| **Rating** | 10A resistive @ 120/240VAC & 28VDC; 1/3 hp @ 120/240VAC |
| **Life** | Mechanical - 1 x $10^7$; Full Load - 1 x $10^6$ |

### Protection

| | |
|---|---|
| **Isolation Voltage** | ≥1500V RMS input to output |
| **Insulation Resistance** | ≥100 MΩ |
| **Polarity** | DC units are reverse polarity protected |

### Mechanical

| | |
|---|---|
| **Mounting** | Surface mount with two #6 (M3.5 x 0.6) screws |
| **Dimensions** | **H** 88.9 mm (3.5”); **W** 63.5 mm (2.5”); **D** 43.2 mm (1.7”) |
| **Termination** | 0.25 in. (6.35 mm) male quick connect terminals |

### Environmental

| | |
|---|---|
| **Operating/Storage Temperature** | -40° to 65°C / -40° to 85°C |
| **Weight** | ≅ 5.7 oz (162 g) |

## Selection Guides

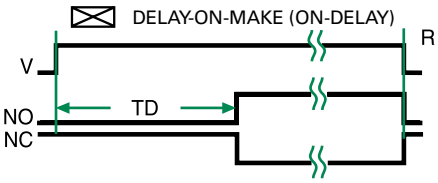
| $R_T$ Selection Chart | | | | | | |
|---|---|---|---|---|---|---|
| Desired Time Delay* Seconds | | | | | | $R_T$ |
| 1 | 2 | 3 | 4 | 5 | 6 | Megohm |
| 0.1 | 0.1 | 0.1 | 0.2 | 0.3 | 0.6 | 0.0 |
| 0.19 | 0.6 | 1 | 1.7 | 3 | 6 | 0.1 |
| 0.28 | 1.1 | 2 | 3.2 | 6 | 12 | 0.2 |
| 0.37 | 1.6 | 3 | 4.7 | 9 | 18 | 0.3 |
| 0.46 | 2.1 | 4 | 6.2 | 12 | 24 | 0.4 |
| 0.55 | 2.6 | 5 | 7.7 | 15 | 30 | 0.5 |
| 0.64 | 3.0 | 6 | 9.2 | 18 | 36 | 0.6 |
| 0.73 | 3.5 | 7 | 10.7 | 21 | 42 | 0.7 |
| 0.82 | 4.0 | 8 | 12.2 | 24 | 48 | 0.8 |
| 0.91 | 4.5 | 9 | 13.7 | 27 | 54 | 0.9 |
| 1.0 | 5.0 | 10 | 15 | 30 | 60 | 1.0 |

* When selecting an external $R_T$ add at least 20% for tolerance of unit and the $R_T$.

| $R_T$ Selection Chart | | | | | |
|---|---|---|---|---|---|
| Desired Time Delay* Minutes | | | | | $R_T$ |
| 7 | 8 | 9 | 10 | 11 | Megohm |
| 0.1 | 0.1 | 0.2 | 1 | 10 | 0.0 |
| 0.6 | 1 | 1.7 | 10 | 50 | 0.1 |
| 1.1 | 2 | 3.2 | 20 | 100 | 0.2 |
| 1.6 | 3 | 4.7 | 30 | 150 | 0.3 |
| 2.1 | 4 | 6.2 | 40 | 200 | 0.4 |
| 2.6 | 5 | 7.7 | 50 | 250 | 0.5 |
| 3.0 | 6 | 9.2 | 60 | 300 | 0.6 |
| 3.5 | 7 | 10.7 | 70 | 350 | 0.7 |
| 4.0 | 8 | 12.2 | 80 | 400 | 0.8 |
| 4.5 | 9 | 13.7 | 90 | 450 | 0.9 |
| 5.0 | 10 | 15 | 100 | 500 | 1.0 |

* When selecting an external $R_T$ add at least 20% for tolerance of unit and the $R_T$.

## Function Diagram




V = Voltage
NO = Normally Open Contact
NC = Normally Closed Contact
TD = Time Delay
R = Reset
= Undefined Time

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