

## ERDM SERIES



### 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.

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

### Accessories

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

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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** -15% - 20%

**12VDC & 24VDC/AC** -20% - 10%

**120VAC/DC & 230VAC** 50/60 Hz

**AC Line Frequency**

### Output

**Type** Isolated relay contacts

**Form** DPDT

**Rating** 10A resistive @ 120/240VAC & 28VDC; 1/3 hp @ 120/240VAC

**Life** Mechanical - 1 x 10<sup>7</sup>; Full Load - 1 x 10<sup>6</sup>

**Protection** ≥1500V RMS input to output

**Isolation 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")

0.25 in. (6.35 mm) male quick connect terminals

### Termination

### Environmental

**Operating/Storage Temperature** -40° to 65°C / -40° to 85°C

**Weight** ≈ 5.7 oz (162 g)

## Selection Guides

R <sub>T</sub> Selection Chart						
Desired Time Delay*						R <sub>T</sub> Megohm
Seconds						
1	2	3	4	5	6	
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<sub>T</sub> add at least 20% for tolerance of unit and the R<sub>T</sub>.

R <sub>T</sub> Selection Chart					
Desired Time Delay*					R <sub>T</sub> Megohm
Minutes					
7	8	9	10	11	
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<sub>T</sub> add at least 20% for tolerance of unit and the R<sub>T</sub>.

## Function Diagram

