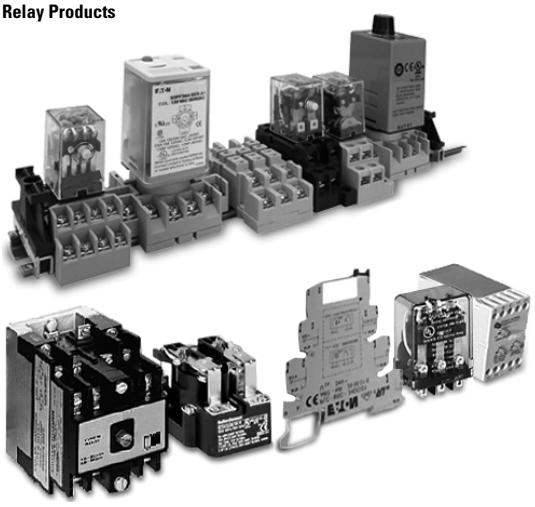
3.1 Control Relays and Timers

Relay Product Overview

Relay Products



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Control Relays and Timers Comparison

Selection Guide by Catalog Number Prefix

Relays	Type	Mounting	Contacts	Maximum Amperage (AC)	cULus	UL	CSA	CE	Page Number
9575H3	General purpose	Panel mount	Fixed	40 A	—	■	■	■	**V7-T3-119**
AR/ARD	Machine tool	Panel mount	Convertible	10 A	—	■	■	—	**V7-T3-154**
BF/BFD	Machine tool	Panel mount	Fixed	10 A	■	—	■	—	**V7-T3-148**
D2RF	Full featured plug-in	DIN rail / panel mount	Fixed	10 A	■	—	■	■	**V7-T3-59**
D2RR	Standard plug-in	DIN rail / panel mount / flange	Fixed	10 A	■	—	■	■	**V7-T3-59**
D3RF	Full featured plug-in	DIN rail / panel mount	Fixed	16 A	■	—	■	■	**V7-T3-69**
D3RR	Standard plug-in	DIN rail / panel mount	Fixed	16 A	■	—	■	■	**V7-T3-69**
D4PR	Standard plug-in	DIN rail / panel mount	Fixed	10 A	■	—	■	■	**V7-T3-77**
D5RF	Full featured plug-in	DIN rail / panel mount	Fixed	16 A	■	—	■	■	**V7-T3-82**
D5RR	Standard plug-in	DIN rail / panel mount / PC board	Fixed	16 A	■	—	■	■	**V7-T3-82**
D7PF	Full featured plug-in	DIN rail / panel mount	Fixed	20 A	■	—	■	■	**V7-T3-91**
D7PR	Standard plug-in	DIN rail / panel mount / flange	Fixed	20 A	■	—	■	■	**V7-T3-91**
D8PR	Standard plug-in	DIN rail / panel mount / flange	Fixed	30 A	■	—	■	■	**V7-T3-104**
D9PR	Standard plug-in	Panel mounting	Fixed	25 A	■	—	■	—	**V7-T3-109**
D15	Machine tool	DIN rail / panel mount	Fixed	10 A	—	■	■	■	**V7-T3-143**
D26	Machine tool	Panel or channel mount	Convertible	10 A	—	■	■	—	**V7-T3-159**
D85	Alternating relays	DIN rail / panel mount	Fixed	10 A	■	■	—	■	**V7-T3-189**
D1RF	Full featured plug-in	DIN rail / panel mount	Fixed	20 A	■	—	■	■	**V7-T3-54**
D1RR	Standard plug-in	DIN rail / panel mount	Fixed	20 A	■	—	■	■	**V7-T3-54**
easyRelay	Programmable relay	DIN rail	Fixed	8 A	—	■	■	■	**V7-T3-23**
TMR5	Timing relay (non-programmable)	DIN rail / panel mount	Fixed	10 A	■	■	—	■	**V7-T3-180**
TMR6	Timing relay (non-programmable)	DIN rail / panel mount	Fixed	10 A	■	■	—	■	**V7-T3-184**
TR	Timing relay (programmable)	DIN rail / panel mount	Fixed	10 A	—	■	■	—	**V7-T3-177**
Universal TR	Timing relay (programmable)	DIN rail	Fixed	8 A	—	■	■	■	**V7-T3-173**
XR	Terminal block relay	DIN rail	Fixed	6 A, 10 A	■	—	—	■	**V7-T3-5**

TMR6 Series

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TMR6 Series

Product Description

Most electronic time delay relays with an OFF delay function require input voltage to be applied continuously in order to operate correctly. However, there are many applications where this is not possible—keeping a relay energized for some amount of time after input voltage has been removed. Eaton's TMR6 true OFF delay product provides this function even when input voltage is removed. It duplicates the operation of the older OFF delay pneumatic time delay relays.

Features

- Provides OFF delay function without requiring input voltage during OFF time delay
- Duplicates operation of pneumatic OFF delay timers
- Each unit has eight timing ranges built in, covering 0.05 seconds to 30 minutes
- Selecting a range is easy using a rotary switch (no math is required or DIP switches to set)
- Uses industry-standard 8-pin octal socket
- 10 A DPDT output contacts

Timing Ranges

Select one of the eight timing ranges using the selector knob, and then adjust the time within that range for an accurate delay setting.

Timing Ranges

Dial Setting	Timing Range
A	0.05–5 sec.
B	0.1–10 sec.
C	0.3–30 sec.
D	0.6–60 sec.
E	1.8–180 sec.
F	3–300 sec.
G	0.1–10 min.
H	0.3–30 min

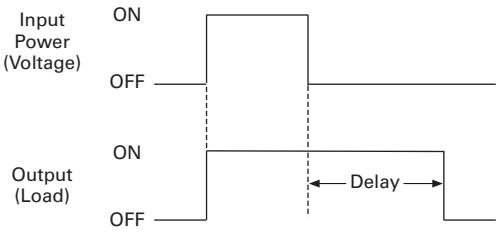
Operation

True OFF Delay

Upon application of input voltage, the relay is energized. When the input voltage is removed, the preset time begins. At the end of the preset time, the relay is de-energized.

Voltage must be applied for a minimum of 0.1 second to assure proper operation. Any application of the input voltage during the preset time will keep the relay energized and reset the time delay. No external trigger switch is required.

True OFF Delay



Standards and Certifications

- cRUus
- UL listed (with Eaton socket)
- RoHS compliant
- CE marked

with Eaton socket

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Catalog Number Selection

All configurations from Catalog Number Selection are available.

TMR6 X 00 120

Family Type
TMR6

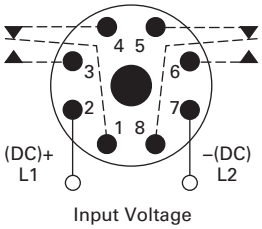
Operational Mode
X = True OFF delay

Timing Range
00 = Programmable

Input Voltage
120 = 120 Vac/Vdc
24 = 24 Vac/Vdc
240 = 240 Vac/Vdc

Wiring Diagram

Wiring for 8-Pin Units



Input Voltage

Product Selection

TMR6 True OFF Delay Relays

Input Voltage	Timing Range	Catalog Number
True OFF Delay		
120 Vac/Vdc	0.05 sec–30 min (user selectable, 8 ranges)	**TMR6X00120**
24 Vac/Vdc		**TMR6X0024**
240 Vac/Vdc		**TMR6X00240**

Accessories

Accessories for Use with TMR6 Time Delay Relays

Description	Standard Pack	Catalog Number
8-pin socket	10	**D3PA2**
Hold-down spring	10	**D65CHDS**

Technical Data and Specifications

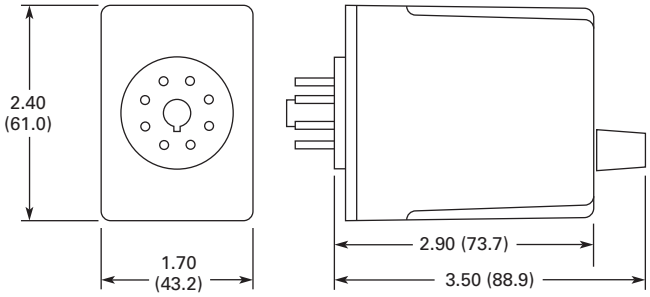
TMR6 Time Delay Relays

Description	Specification
Voltage tolerance	
AC operation	+10/–15% of nominal at 50/60 Hz
DC operation	+10/–15% of nominal
Load burden	2 VA
Setting accuracy	
Maximum setting (adjustable)	+5%, –0%
Minimum setting (adjustable)	+0%, –50%
Repeat accuracy (constant voltage and temperature)	±0.1% or 50 ms, whichever is greater
Temperature	–18 to 150 °F (–28 to 65 °C)
Insulation voltage	2,000 V
Output contacts	DPDT 10 A @ 240 Vac/30 Vdc, 1/2 hp @ 120/240 Vac (NO contacts) 1/3 hp @ 120/240 Vac (NC contacts) B300 and R300; AC-15 and DC-13
Life	
Mechanical	2,000,000 operations
Full load	100,000 operations

Dimensions

Approximate Dimensions in Inches (mm)

TMR6



D3PA2 Socket