



Time-Delay Relay Selection Guide

Description of Time Delay Operation	Operation	Timing Periods	Function Code
ON DELAY: When power is APPLIED to the coil, the ON DELAY timing period begins. The contacts do not transfer at this time. At the end of the ON DELAY time period the contacts transfer, either connecting (normally open contacts) or disconnecting (normally closed contacts) the load. The contacts stay in the transferred state until power is REMOVED from the coil. They then return to their original state and the unit is ready for a new cycle.	Power Load	On On On On Off Off On On On Off	1
OFF DELAY I: Power is applied to the coil at all times. Upon CLOSURE of the start switch (a "dry" external contact), the contacts transfer, either connecting (normally open contacts) or disconnecting (normally closed contacts) the load. When the start switch is OPENED, the OFF DELAY timing period begins. The contacts stay in the transferred position until the OFF DELAY timing period ends. They then return to their original position and the unit is ready for a new cycle.	Power Switch Load	On On On On On Off On On On Off	2
OFF DELAY II: Power is applied to the coil at all times. Upon the MAKE and RELEASE of the start switch (a "dry" external contact), the OFF DELAY timing period begins and the contacts transfer, either connecting (normally open contacts) or disconnecting (normally closed contacts) the load. When the timing period ends, the contacts return to their original position and the unit is ready for a new cycle.	Power Switch Load	On On On On On Off On Off Off Off	3
INTERVAL DELAY: When power is APPLIED to the coil (the start switch must be jumped in multifunction timers), the INTERVAL timing period begins and the contacts transfer, either connecting (normally open contacts) or disconnecting (normally closed contacts) the load. When the INTERVAL timing period ends, the contacts return to their original position. The unit resets when power is removed from the coil, making the unit ready for a new cycle.	Power Load	On On On On Off On On Off Off Off	4
CYCLE 1 SHOT (EQUAL TIME OFF/ON): Upon application of power to the timer, timing starts. The output relay is OFF for the set time and then ON for the set time for 1 cycle only. The timer is reset when power is removed or a reset input is applied.	Power Switch Load	On On On On On Off On Off Off On	5
REPEAT CYCLE (EQUAL ON AND OFF DELAY TIME PERIODS): When power is APPLIED to the coil, the OFF time period is initiated; the contacts do not transfer. At the end of the OFF time period, the ON time period begins. The contacts transfer, either connecting (normally open contacts) or disconnecting (normally closed contacts) the load. At the end of the ON period, the contacts transfer and the cycle continues until power is removed from the coil.	Power Load	On On On On On Off On Off On Off	6
REPEAT CYCLE (INDEPENDENT ON AND OFF DELAY TIME PERIODS): When power is APPLIED to the coil, the ON period is initiated by contact transfer (normally open contacts close, normally closed contacts open). At the end of the OFF period, contacts release and the ON period begins. The cycle continues until power is removed from the coil.	Power Load	On On On On On On Off On Off On	7
SIGNAL INTERVAL/OFF DELAY: Power is applied to the coil at all times. Upon CLOSURE of the start switch (a "dry" external contact), the INTERVAL cycle begins; the contacts transfer, either connecting (normally open contacts) or disconnecting (normally closed contacts) the load. At the end of the INTERVAL cycle, the OFF DELAY cycle begins and the contacts stay transferred until the OFF DELAY cycle ends. The contacts then return to their original positions and the unit is ready for a new cycle.	Power Switch Load	On On On On On On On On Off Off	8
SIGNAL ON DELAY/OFF DELAY: Power is applied to the coil at all times. Upon CLOSURE of the start switch (a "dry" external contact), the ON DELAY cycle begins; the contacts do not transfer. At the end of the ON DELAY cycle the contacts transfer, either connecting (normally open contacts) or disconnecting (normally closed contacts) the load. Upon RELEASE of the start switch, the OFF DELAY cycle begins; the contacts remain transferred. At the end of the OFF DELAY cycle, the contacts return to their original positions and the unit is ready for a new cycle.	Power Switch Load	On On On On On Off On On Off Off	9
POWER OFF DELAY: When power is APPLIED to the coil, the contacts transfer, either connecting (normally open contacts) or disconnecting (normally closed contacts) the load. When power is removed from the coil, the OFF DELAY timing period begins; contacts remain transferred. At the end of the OFF DELAY cycle, the contacts return to their original positions and the unit is ready for a new cycle.	Power Load	On On On Off Off On On On On Off	10
WATCHDOG (RETRIGGERABLE SINGLE SHOT): Upon application of input voltage, the time delay relay is ready to accept trigger signals. Upon application of the trigger signal, the relay is energized and the preset time begins. At the end of the preset time, the relay is de-energized unless the trigger signal is closed and opened prior to time out (before preset time elapses). Continuous cycling of the trigger signal at a rate faster than the preset time will cause the relay to remain energized.	Power Switch Load	On On On On On Off On On Off On	11



6A857



21EW83



21EP67



Encapsulated Time-Delay Relays

Solid-state technology provides a long service life, reducing maintenance costs and production loss due to downtime. 1/4" quick-connect.

Function	Pins	Contact Form	Amps	Input Voltage	Timer Range	Item No.	
Solid-State Output, Dayton							
Off Delay	5	SPST-NO	1A	24-240VAC	0.50 sec.-10.00 sec.	6A857	
	5	SPST-NO	1A	24-240VAC	3.00 sec.-60.00 sec.	6A858	
	5	SPST-NO	1A	24-240VAC	15.00 sec.-300.00 sec.	6A859	
	5	SPST-NO	1A	24VAC	0.05 sec.-1.00 sec.	5WML4	
	5	SPST-NO	1A	12-125VDC	0.05 sec.-1.00 sec.	5WML7	
	5	SPST-NO	1A	12-125VDC	0.50 sec.-100.00 sec.	5WML8	
	5	SPST-NO	1A	12-125VDC	3.00 sec.-60.00 sec.	5WML9	
	On Delay	2	SPST-NO	1A	24-240VAC/12-48VDC	0.05 sec.-1.00 sec.	2A559
		2	SPST-NO	1A	24-240VAC/12-48VDC	0.25 sec.-5.00 sec.	2A560
2		SPST-NO	1A	24-240VAC/12-48VDC	0.50 sec.-10.00 sec.	2A561	
2		SPST-NO	1A	24-240VAC/12-48VDC	3.00 sec.-60.00 sec.	2A562	
Relay Output, Airotronics							
Interval/Watchdog	6	SPDT	10A	120VAC	1.00 sec.-100.00 sec.	21EW97	
	6	SPDT	10A	24VAC	1.00 sec.-100.00 sec.	21EW98	
	6	SPDT	10A	24-28VDC	1.00 sec.-100.00 sec.	21EW99	
	6	SPDT	10A	12VDC	1.00 sec.-100.00 sec.	21EX01	
	On Delay	2	SPST-NO	1A	19-265VAC/10-120VDC	0.01 sec.-102.30 sec.	21EW87
		2	SPST-NO	1A	19-265VAC/10-120VDC	1.00 sec.-1023.00 sec.	21EW88
2		SPST-NO	1A	19-265VAC/10-120VDC	10.00 sec.-10,230.00 sec.	21EW89	
On Delay, Off Delay, 1-Shot, Interval, Reset 1-Shot/Watchdog	6	SPDT	10A	120VAC	0.10 sec.-1023 min.	21EW77	
	6	SPDT	10A	230VAC	0.10 sec.-1023 min.	21EW78	
	6	SPDT	10A	24VAC	0.10 sec.-1023 min.	21EW79	
	6	SPDT	10A	12VDC	0.10 sec.-1023 min.	21EW80	
	6	SPDT	10A	24VDC	0.10 sec.-1023 min.	21EW81	
	6	SPDT	10A	120VAC	1.00 sec.-100 min.	21EW82	
	6	SPDT	10A	230VAC	1.00 sec.-100 min.	21EW83	
	6	SPDT	10A	24VAC	1.00 sec.-100 min.	21EW84	
	6	SPDT	10A	12VDC	1.00 sec.-100 min.	21EW85	
	6	SPDT	10A	24VDC	1.00 sec.-100 min.	21EW86	
Repeat Cycle	5	SPDT	10A	120VAC	0.10 sec.-102.30 sec.	21EW91	
	5	SPDT	10A	120VAC	1.00 sec.-1023.00 sec.	21EW92	
	5	SPDT	10A	24VAC	0.10 sec.-102.30 sec.	21EW93	
	5	SPDT	10A	24VAC	1.00 sec.-1023.00 sec.	21EW94	
	5	SPDT	10A	12VDC	0.10 sec.-102.30 sec.	21EW95	
	5	SPDT	10A	12VDC	1.00 sec.-1023.00 sec.	21EW96	
Repeat Cycle Equal Time	2	SPST-NO	1A	24-240VAC/12-48VDC	Fixed 0.80 sec.	21EW90	
Relay Output, Macromatic							
On Delay, Off Delay, Interval, 1-Shot	9	SPDT	10A	24-240VAC/12-125VDC	0.10 sec.-100 min.	21EP67	
Repeat Cycle Equal Time, Watchdog, 1-Shot Falling Edge	9	SPDT	10A	24-240VAC/12-125VDC	0.10 sec.-100 min.	21EP68	
Repeat Cycle Independent On and Off Delay Time Periods, Delayed Interval, Triggered Delayed Interval	7	SPDT	10A	24-240VAC/12-125VDC	0.10 sec.-1000 min.	21EP69	

* See this page for operating function information.



7H851

Extended Time-Delay Relays



Pins	Base Type	Contact Form	Contact Amp Rating (Resistive)	Operating Functions	Socket Code†	►CHOOSE: Coil Volts	Min. Time Setting	Max. Time Setting	DAYTON Item No.	SCHNEIDER ELECTRIC Item No.
On Delay										
8	Square	DPDT	5A	1	Q	12V DC; 24V AC; 24V	0.10 sec.	100 hr.	H7851	H7849
14	Square	4PDT	3A	1	G	DC; 120V AC; 240V AC	0.10 sec.	100 hr.	H7850	H7848

† See page 216 for sockets.