SERIESONE DR TIMER

SOLID STATE RELAY TIMER

Features

- 6 Amp AC and DC rated output
- Compact size (11mm wide)
- Dual SCR or MOSFET output
- AC/DC control
- Zero-crossing (resistive loads) or random-fire (inductive loads) AC output
- Timer status LED indicator
- UL listed, HP rated
- 8 Industry standard fuctions (A/At, B, C, D/Di, H/Ht, L/Li, Ac and Bw)

PRODUCT SELECTION

Control Voltage	AC Output	DC Output
12-24 VAC/DC	DRTx24D06x	DRTx06D06
90-140 VAC/DC	DRTx24B06x	
180-240 VAC/DC	DRTx24A06x	

SPECIFICATIONS

Output [(1)]

Description	DRTx24	DRTx06
Operating Voltage	24-280 VAC (47-440Hz)	1-48 VDC
Transient Overvoltage [Vpk]	600	60 VDC
Rated Load Current [(2)]	6 Arms	6 A
Rated Load Current {UL508 Motor Controller} [(2)] [Arms]	3.6 Arms	-
Minimum Load Current	150 mArms	2.5 mA
Maximum Off-State Leakage Current @ Rated Voltage	0.1 mArms	0.25 mA
Minimum Off-State dv/dt @ Maximum Rated Voltage [V/µsec] [(3)]	500	-
Maximum Surge Current (AC output 1 cycle. DC output 10ms)	285/300 Apk (50/60Hz)	60 A
Maximum I^2t for Fusing [A^2 sec]	410/375 (50/60Hz)	-

Maximum On-State Voltage Drop @ Rated Current [Vpk]	1.3	0.3 VDC
Maximum On-State Resistance (RDS-ON) [Ohms]	-	0.034
HP rating UL 508/IEC60947[HP (KW)]: 240 VAC	1/3 (0.24)	-
IEC 62314 LC-A [FLA]	6 A	-
IEC 62314 LC-B [Kw]	0.24	-
Wire Size min/max (solid/stranded) [AWG/ IEC mm²] [4]	22/12 [0.33/3.31]	22/12 [0.33/3.31]
Output Terminal Screw Torque [in lb (Nm)]	7.0 (0.8)	7.0 (0.8)

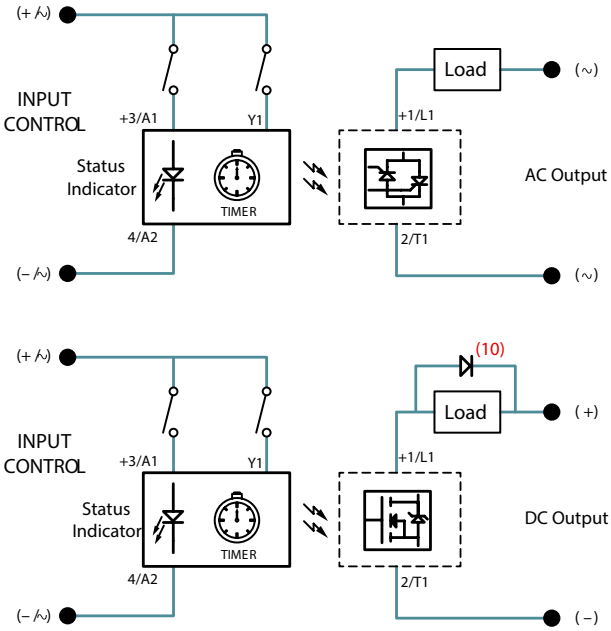
Input [1]

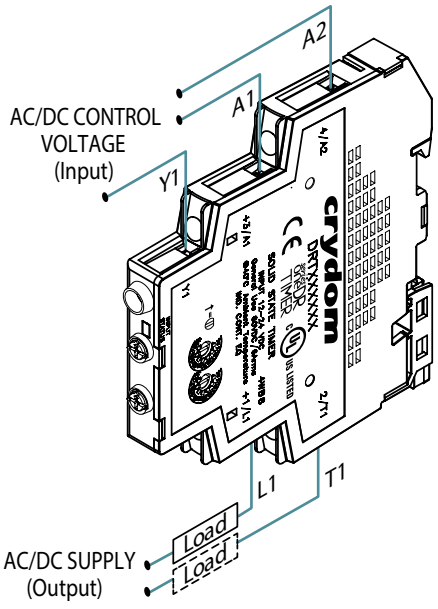
Description	DRTxxxD06	DRTx24A06	DRTx24B06
Control Voltage Range	12-24 VAC/DC	180-240 VAC/DC	90-140 VAC/DC
Must Turn-Off Voltage	1 VAC/DC	20 VAC/DC	10 VAC/DC
Min Input Current @ Min Voltage (AC/DC) (for on-state)	7.6/6.3 mA [5]	7.2/7.1 mA	7.6/7.4 mA
Maximum Input Current @ Maximum Voltage	12.1/9.1 mA [6]	9.7/9.6 mA	12.5/12.3 mA
Nominal Input Impedance	2K Ohms[7]	25K ohms	12K ohms
Wire Size min-max (solid/stranded) [AWG/ IEC mm²] [4]	22-16 / 0.33-1.31	22-16 / 0.33-1.31	22-16 / 0.33-1.31
LED Status Indicator (Color)	Yes (green)	Yes (green)	Yes (green)
Input Terminal Screw Torque [in lb (Nm)]	4.4 (0.5)	4.4 (0.5)	4.4 (0.5)
Maximum turn-on/off time	See note [9]	See note [9]	See note [9]

General [1]

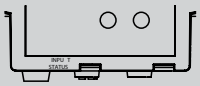
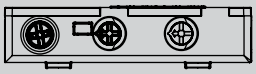
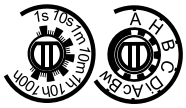
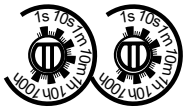
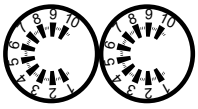
Description	Parameters
Dielectric Strength, Input/Output/Base (50/60Hz)	3750 Vrms [8]
Minimum Insulation Resistance (@ 500 VDC)	10^9 Ohm
Maximum Capacitance, Input/Output	10 pF
Ambient Operating Temperature Range	-30 to 80 °C
Ambient Storage Temperature Range	-40 to 125 °C
Weight (typical)	1.76 oz (50 g)
Housing Material	UL 94 V0 Self-extinguishing
Terminal Finish	Sulfamate Nickel
Humidity	5 - 85% Non condensing
RoHS Exemption #'s	5(a), 7(a), 7(c)-I

WIRING DIAGRAMS





TIMER SETTINGS & RANGES

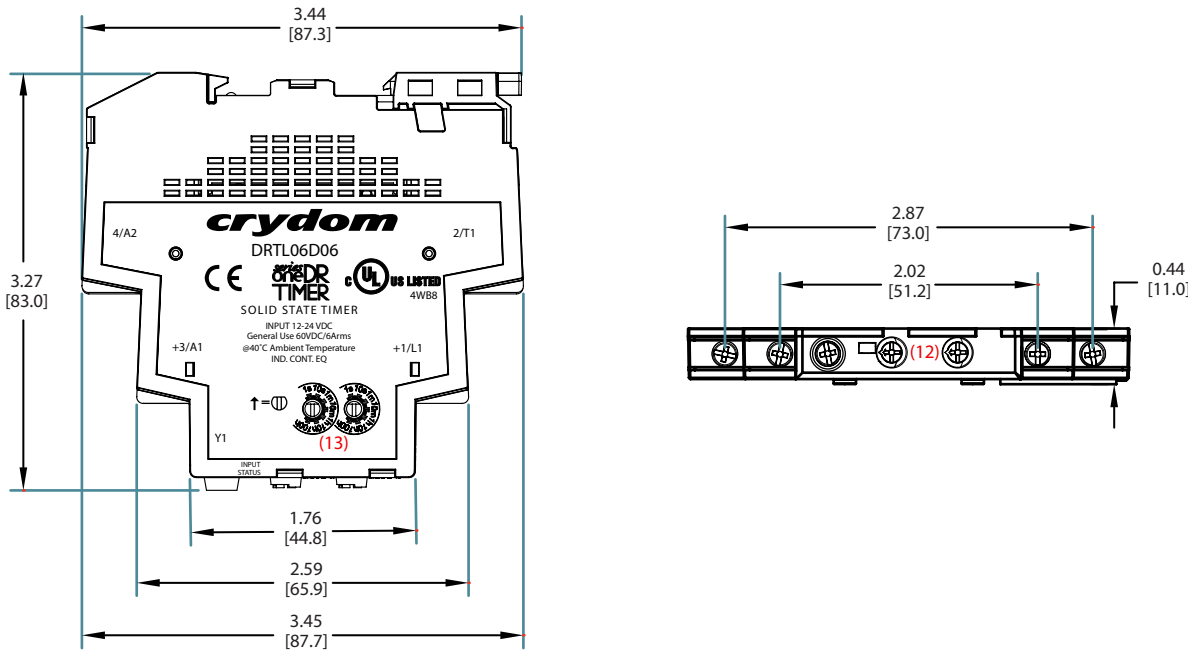
Timer Settings		
Timing Function	**Identification**	
	 **Side View**	 **Front View**
U Multifunction [A/At, H/Ht, D/Di, B, C, Ac, Bw]	 Range Function	 Fine Adjustment
L Repeat Cycle	 T on T off	 Fine Adjustment
A Delay on Make **H** Interval **B** Single Shot **C** Delay on Break	 Range	 Fine Adjustment

Timing Ranges [11]	
Identification	**Timing Range**
1s	0.1 s to 1 s
10 s	1 s to 10 s
1 min	0.1 min to 1 min
10 min	1 min to 10 min
1 h	0.1 h to 1 h
10 h	1 h to 10 h
100 h	10 h to 100 h

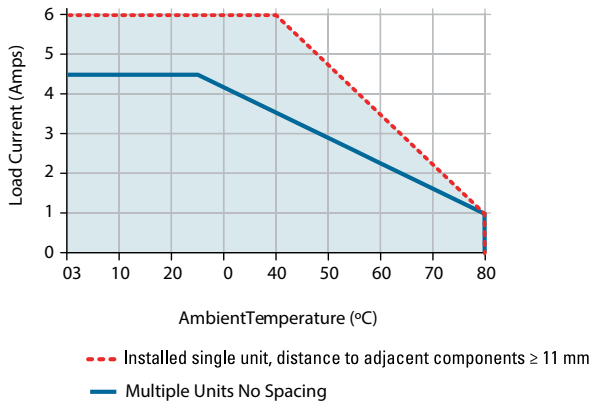
GENERAL NOTES

(1) All parameters at 25°C unless otherwise specified.
(2) See derating curves.
(3) Off-State dv/dt test method per EIA/NARM standard RD-443, paragraph 13.11.1
(4) For UL Listing, must use wire rated @ 75°C.
(5) For DC output model minimum current spec is 15.7/12.4ma (AC/DC).
(6) For DC output model maximum current spec is 27.9/20.3ma (AC/DC).
(7) For DC output mode, spec is 1K.
(8) For DC output model, spec is 2500V.
(9) Activation Time = 65ms / Deactivation Time = 100 ms.
(10) Inductive loads must be diode suppressed to prevent damage to output.
(11) Timing accuracy ± 10%. Additional functions and time ranges are also available, please contact your local authorized Crydom Distributor, Representative or Sensata Sales office and request information about our custom products.
(12) Do not apply a push force greater than 9.8N(2.2lbf) and Stop torque 4Ncm.
(13) Do not apply a push/pull force greater than 5N(1.12lbf) and torque 20Nm.

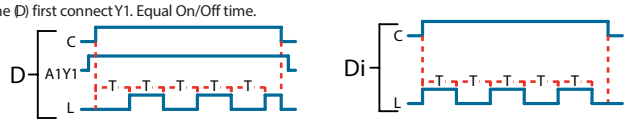
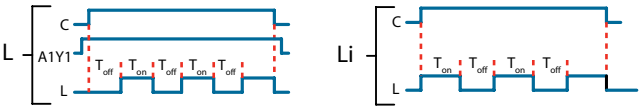
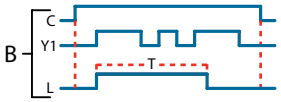
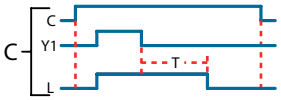
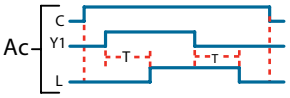
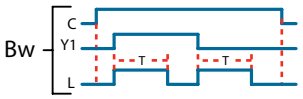
MECHANICAL SPECIFICATIONS



THERMAL DERATE INFORMATION



LED Status by Function

Function	Control Voltage	Y1	Timing	Output State	LED Status	Notes
A/At Delay On Make	Off	◆	Off	Off	Off	At function is identical to the A function except when Y1 is connected to A1 timing is paused. When Y1 is removed timing resumes until relay times out. To reset timer remove control power. 
	On	◆	On	Off	Long Flashes	
	On	◆	Timed Out	On	On	
H/Ht Interval	Off	◆	Off	Off	Off	Ht function is identical to the H function except when Y1 is connected to A1 timing is paused. When Y1 is removed timing resumes until relay times out. To reset timer remove control power. 
	On	◆	On	On	Long Flashes	
	On	◆	Timed Out	Off	Short Flashes	
D/Di Repeat Cycle	Off	◆	Off	Off	Off	To select between on time (Di) first or off time (D) first Y1 is connected. Default is On time (Di) first, for Off time (D) first connect Y1. Equal On/Off time. 
	On	◆	On	On/Off	Long Flashes/Short Flashes	
L/Li Repeat Cycle	Off	◆	Off	Off	Off	To select between on time (Li) first or off time (L) first Y1 is connected A1. Default is On time (Li) first, for Off time (L) first connect Y1 to A1. Time delay is independent of each other. 
	On	◆	On	On/Off	Long Flashes/Short Flashes	
B Single Shot	Off	Open	Off	Off	Off	Y1 switch can be momentary or maintained to A1. To reset timer after relay has timed out Y1 has to be opened. 
	On	Open	Off	Off	Short Flashes	
	On	Closed	On	On	Long Flashes	
	On	Closed	Timed Out	Off	Short Flashes	
C Delay On Break	Off	Open	Off	Off	Off	Y1 switch to A1 must be momentary for timing to begin. If during timing Y1 is closed again the time delay is reset and will begin again once Y1 is removed. Once timed out timer is reset and ready for the next cycle. 
	On	Open	Off	Off	Short Flashes	
	On	Closed	Off	On	On	
	On	Open	On	On	Long Flashes	
	On	Open	Timed Out	Off	Short Flashes	
Ac Delay On Make / Delay On Break	Off	Open	Off	Off	Off	To start Delay on Make (A) timing connect Y1 to A1 and maintain until LED is on Solid then to start Delay on Break (c) portion remove Y1 until relay times out. Removing Y1 During (A) portion or Connecting Y1 during (c) portion will reset time for that portion. 
	On	Open	Off	Off	Short Flashes	
	On	Closed	On	Off	Long Flashes	
	On	Closed	Timed Out	On	On	
	On	Open	On	On	Long Flashes	
	On	Open	Timed Out	Off	Short Flashes	
Bw	Off	Open	Off	Off	Off	Y1 to A1 switch can be momentary or maintained. If maintained until relay has timed out removing it will start timing again. If momentary and timers has timed out reapplying Y1 will start timing again. 
	On	Open	Off	Off	Short Flashes	
	On	Closed	On	On	Long Flashes	
	On	Closed	Timed Out	Off	Short Flashes	

ORDERING OPTIONS

Example : DRTA24D06R

DRT	A	24	D	06	R

Series

DRT

Timing Function

A: A/At, Delay on Make
B: Single Shot
C: Delay on Break
H: H/Ht, Interval
L: L/Li, Repeat Cycle
U: Multifunction (A/At, H/Ht, D/Di, B, C, Ac & Bw)

Operating Voltage

06: 60 VDC
24: 280 VAC

Control Voltage

D: 12-24 VAC/DC
A: 180-240 VAC/DC (AC Output Only)
B: 90-140 VAC/DC (AC Output Only)

Rated Load Current

06: 6 Amps

Switching Type

(24 suffix only)
Blank: Zero Voltage Turn-On
R: Random Turn-On

— Required for valid part number
☐ For options only and not required for valid part number

AGENCY APPROVALS & CERTIFICATIONS

Designed in accordance with the requirements of IEC 62314
IEC 60068-2-6 : Vibration 0.35mm and 0.75mm Amplitutde over 10-55 Hz
IEC 60068-2-27 : Shock 15G/11ms
IEC 61000-4-2 : Electrostatic Discharge Level 3
IEC 61000-4-4 : Electrically Fast Transients Level 3
IEC 61000-4-5 : Electrical Surges Level 3

c UL US LISTED IND. CONT. EQ. 4WB8 E116949 CE RoHS

WARNINGS

RISK OF MATERIAL DAMAGE AND HOT ENCLOSURE

- The product's side panels may be hot, allow the product to cool before touching
- Follow proper mounting instructions including torque values
- Do not allow liquids or foreign objects to enter this product

Failure to follow these instructions can result in serious injury, or equipment damage.

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Disconnect all power before installing or working with this equipment
- Verify all connections and replace all covers before turning on power

Failure to follow these instructions will result in death or serious injury.

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