

Power OFF-delay Timer

H3DT-H

- Set two time ranges with each Timer, from 0.1 to 12 seconds for the S Series and from 1.0 to 120 seconds for the L Series.



* CSA conformance evaluation by UL.



For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

Ordering Information

List of Models

				H3DT-H	
Operating modes	Supply voltage	Control output	Model	S Series (time range: 0.1 to 12 s)	L Series (time range: 1.0 to 120 s)
Power OFF Delay	100 to 120 VAC	Contact output: SPDT		H3DT-HCS	H3DT-HCL
	200 to 240 VAC	Contact output: SPDT		H3DT-HDS	H3DT-HDL
	24 to 48 VAC/DC	Contact output: SPDT		H3DT-HBS	H3DT-HBL

Model Structure

Model	Terminal block	Operating/resetting method	Output type	Mounting method	Safety standards
H3DT-H	6 terminals	Instantaneous operation/ time-limit reset	Relay, SPDT	DIN Track mounting	cULus (UL 508 CSA C22.2 No. 14) CCC LR EN 61812-1 IEC 60664-1 4 kV/2

Specifications

Time Ranges

	S Series		L Series	
Time range setting	x0.1	x1	x1	x10
Set time range	0.1 to 1.2 s	1 to 12 s	1 to 12 s	10 to 120 s
Power ON time	0.1 s min.		0.3 s min.	
Scale numbers	12			

Ratings

Supply voltage	H3DT-HCS/-HCL	100 to 120 VAC, 50/60 Hz
	H3DT-HDS/-HDL	200 to 240 VAC, 50/60 Hz
	H3DT-HBS/-HBL	24 to 48 VAC/DC, 50/60 Hz *1
Allowable voltage fluctuation range	85% to 110% of rated voltage	
Power consumption	H3DT-HCS	At 120 VAC: 8.7 VA max.
	H3DT-HCL	At 120 VAC: 8.8 VA max.
	H3DT-HDS	At 240 VAC: 21.6 VA max.
	H3DT-HDL	At 240 VAC: 21.7 VA max.
	H3DT-HBS/-HBL	At 48 VAC: 1.0 VA max., at 24 VDC: 0.4 W max.
Timer operation starting voltage	30% or less of power supply voltage	
Rated Insulation Voltage	250 VAC	
Control output	Contact output, 5 A at 250 VAC with resistive load ($\cos\phi = 1$), 5 A at 30 VDC with resistive load Contact materials : Ag-alloy (Recommended fuse: BLN5 (Littelfuse) or 0216005MXEP)	
Ambient operating temperature	-20 to 60°C (with no icing)	
Storage temperature	-40 to 70°C (with no icing)	
Surrounding air operating humidity	25% to 85%	

* DC ripple: 20% max.

Characteristics

Accuracy of operating time		±1% of FS max. (±1% ±10 ms max. at 1.2-s range)
Setting error		±10% of FS ±0.05 s max.
Influence of voltage		±0.5% of FS max. (±0.5% ±10 ms max. at 1.2-s range)
Influence of temperature		±2% of FS max. (±2% ±10 ms max. at 1.2-s range)
Insulation resistance		100 MΩ min. at 500 VDC
Dielectric strength		Between charged metal part and operating section: 2,900 VAC 50/60 Hz for 1 min. Between control output terminals and operating circuit: 2,000 VAC 50/60 Hz for 1 min. Between contacts not located next to each other: 1,000 VAC 50/60 Hz for 1 min.
Impulse withstand test voltage		Between power supply terminals: 1 kV for 24-VAC/DC and 48-VAC/DC models, 5 kV for all other models. Between conductor terminal and operating section: 7.4 kV
Noise immunity		Square-wave noise generated by noise simulator (pulse width: 100 ns/1 μs, 1-ns rise): ±1.5 kV (between power supply terminals)
Static immunity		Malfunction: 4 kV, Destruction: 8 kV
Vibration resistance	Destruction	0.75-mm single amplitude at 10 to 55 Hz for 2 h each in 3 directions
	Malfunction	0.5-mm single amplitude at 10 to 55 Hz for 10 min each in 3 directions
Shock resistance	Destruction	1,000 m/s ² 3 times each in 6 directions
	Malfunction	100 m/s ² 3 times each in 6 directions
Life expectancy	Mechanical	10 million operations min. (under no load at 1,800 operations/h)
	Electrical	100,000 operations min. (5 A at 250 VAC, resistive load at 360 operations/h)
Degree of protection		IP30 (Terminal block: IP20)
Weight		Approx. 90 g

Applicable standards

Safety standards	cULus: UL 508/CSA C22.2 No. 14 EN 61812-1: Pollution degree 2, Overvoltage category III CCC: GB/T 14048.5 Pollution degree 2, Overvoltage category III * LR: Category ENV1.2	
EMC	(EMI)	EN 61812-1
	Radiated Emissions:	EN 55011 class B
	Emission AC Mains:	EN 55011 class B
	Harmonic Current:	EN 61000-3-2
	Voltage Fluctuations and Flicker:	EN 61000-3-3
	(EMS)	EN 61812-1
	Immunity ESD:	EN 61000-4-2
	Immunity RF-interference:	EN 61000-4-3
	Immunity Burst:	EN 61000-4-4
	Immunity Surge:	EN 61000-4-5
	Immunity Conducted Disturbance:	EN 61000-4-6
	Immunity Voltage Dip/Interruption:	EN 61000-4-11

* CCC certification requirements

Rated operating voltage Ue	AC-15: Ue: 250 VAC, Ie: 3 A
Rated operating current Ie	AC-13: Ue: 250 VAC, Ie: 5 A DC-13: Ue: 30 VDC, Ie: 0.1 A
Rated impulse withstand voltage (altitude: 2,000 m max.)	4 kV (at 240 VAC)
Conditional short-circuit current	1,000 A

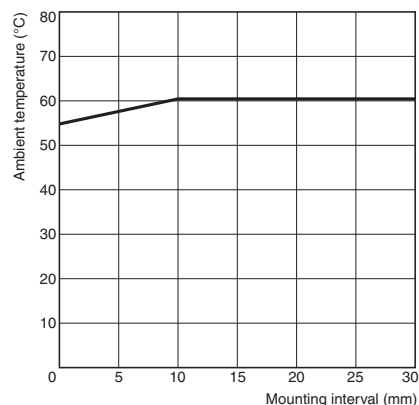
I/O

Input		None
Output	Control output	The Timer operates as soon as the Timer is turned ON. The Timer starts timing when the power is turned OFF and the output is turned OFF when the time set on the dial elapses.

Relation between H3DT Ambient Temperature and Mounting Interval (Reference Values)

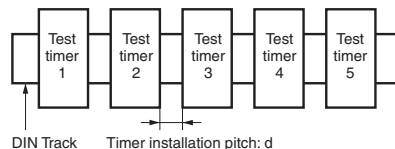
The relation between the ambient temperature and mounting interval is shown in the following graph.

If the Timer is used at 55°C or higher with a mounting interval that is smaller than that shown in the following diagram, the temperature inside the Timer will increase, reducing the life expectancy of internal parts.



Testing Method

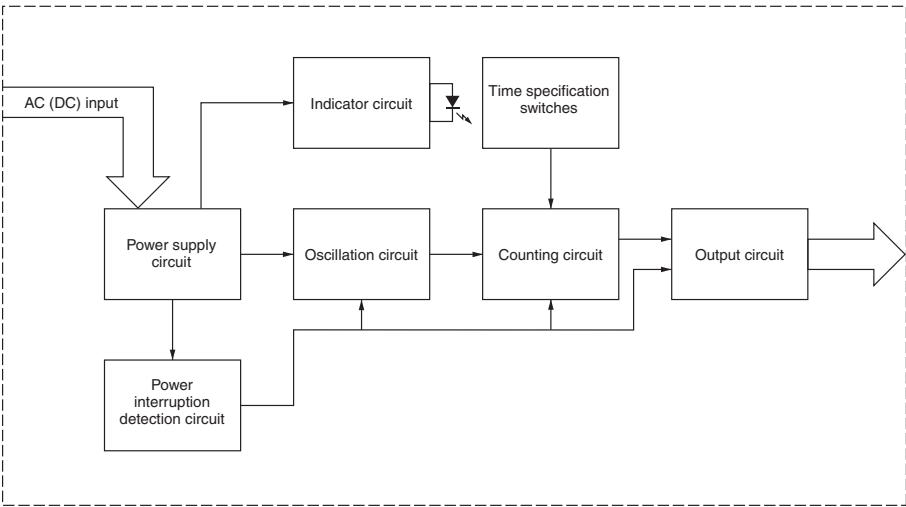
Tested Timer: H3DT-H
Applied voltage: 240 VAC
Installation pitch: 0 and 10 mm
Load current: 5 A



Connections

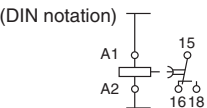
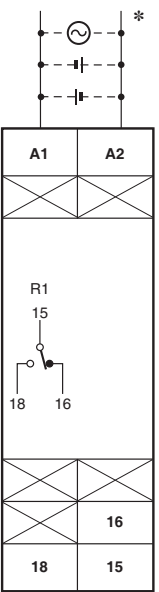
Block Diagrams

H3DT-H



Terminal Arrangement

H3DT-H



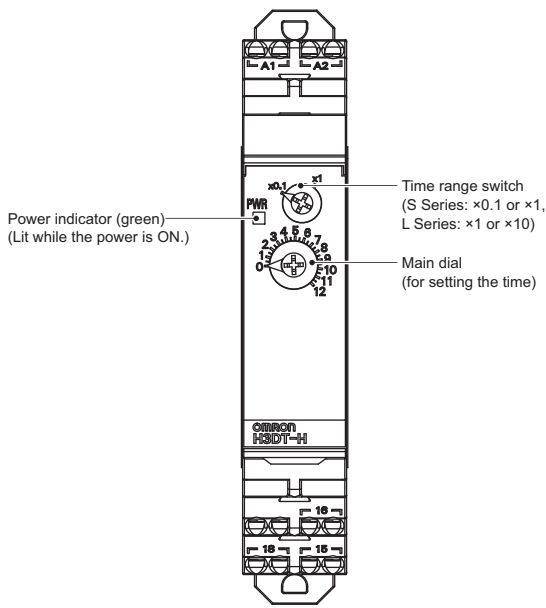
Note: The above figure shows the terminal arrangement for a 24 to 48-VAC/DC model. Models with 100 to 120-VAC or 200 to 240-VAC power input do not have a DC input.

* The power supply terminals do not have polarity.

Nomenclature

H3DT-H

Front View



Note: If the switch is left between settings, proper operation may not be possible. Make sure that the switch is set properly.

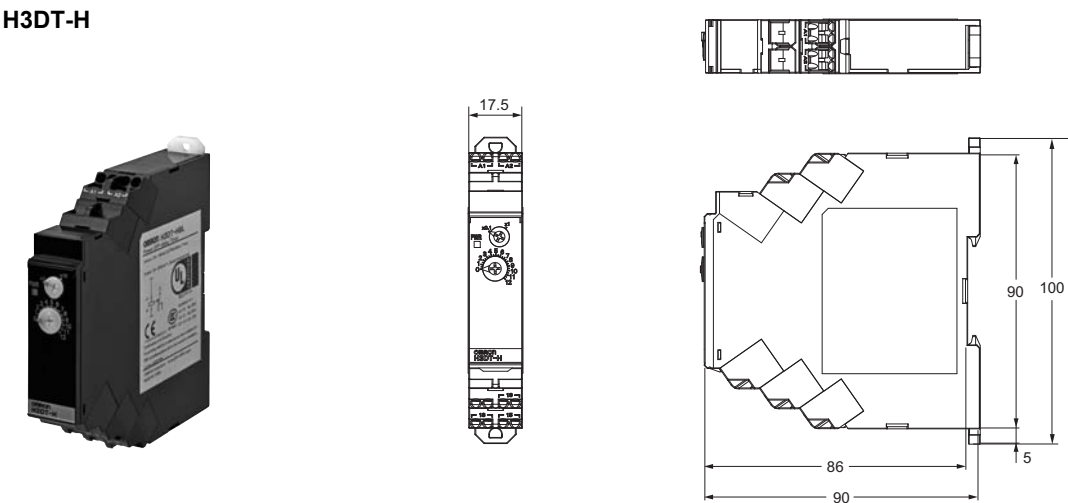
H3DT-H

Dimensions

(Unit: mm)

Timers

H3DT-H



Track Mounting Products (Sold Separately)

Refer to page 29 for details.

Options (Order Separately)

Front Cover

Refer to page 29 for details.

Operating Procedures

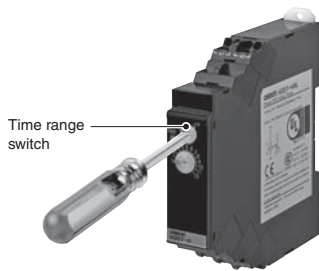
Basic Operation
Setting Switches

- Each switch has a snap mechanism that secures the switch at given positions. Set the switch to one of these positions.
Do not set it midway between two positions. Malfunction could result from an improper setting.

Setting the Time Ranges

Setting the Time Ranges

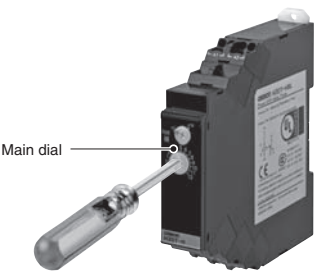
The scale multiplier can be changed with the timer range switch. It can be changed between $\times 0.1$ s and $\times 1$ s for an S-series Timer and between $\times 1$ s and $\times 10$ s for an L-series Timer.



Setting the Time

Setting the Time

The operation time is set with the main dial.



Timing Charts

