Solid-state Multi-functional Timers

H3CR-A8E AC/DC24-48

**Solid-state Timer, 8-pin, Time range: 0.05 s to 300 h, Relay output (DPDT)
Time-limit and instantaneous contact, 24 to 48 VAC/VDC**

Image

Rated power supply voltage	24 to 48 VAC 50/60 Hz 24 to 48 VDC Ripple 20% max. (If power supply incorporates a single-phase full-wave rectifier)
Control output (Type)	Time-limit: SPDT ,Instantaneous: SPDT
Operating resetting	Time-limit operation/Self-reset
Connecting method	8-pin round socket

Ratings/Specifications

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Rated power supply voltage	24 to 48 VAC 50/60 Hz 24 to 48 VDC Ripple 20% max. (If power supply incorporates a single-phase full-wave rectifier)
Allowable voltage variable range	85% to 110% of rated voltage
Power consumption	Relay ON: Approx. 0.9 W (at 24 VDC)/Relay OFF: Approx. 0.9 W (at 24 VDC)
Reset voltage	10% max. of rated supply voltage
Number of time ranges	18
Operation mode	ON delay, Flicker OFF start, Flicker ON start, Interval, One shot output
Control output (Type)	Time-limit: SPDT ,Instantaneous: SPDT
Control output (Contact output)	Resistive load: 250 VAC 5 A (cosφ=1)/5 A at 30 VDC/0.15 A at 125 VDC Inductive load (Reference value): 2 A at 250 VAC (cosφ=0.4)/3 A at 30 VDC (L/R=7 ms) Minimum applicable load: 10 mA at 5 VDC (failure level: P Reference value)
Operating resetting	Time-limit operation/Self-reset
Ambient temperature range	Operating: -10 to 55 ℃ (with no icing) Storage: -25 to 65 ℃ (with no icing)
Ambient humidity range	Operating: 35 to 85 %
Accuracy of operating time	±0.2% FS max. ±0.2% ±10 ms in a range of 1.2 s and 3 s
Setting error	±5% FS ±50 ms max.
Reset time	0.1 s max.
Influence of voltage	±0.2% FS max. ±0.2% ±10 ms in a range of 1.2 s and 3 s
Influence of temperature	±1% FS max. (±1% ±10 ms in a range of 1.2 s and 3 s)

Insulation resistance	100 MΩ min. (at 500 VDC)
Dielectric strength	Between current carrying metal parts and non-current carrying metal parts: 2,000 VAC 50/60 Hz 1 min Between control output terminals and operating circuit: 2,000 VAC 50/60 Hz 1 min Between contacts of different polarity: 2,000 VAC 50/60 Hz 1 min Between non-continuous contacts: 1,000 VAC 50/60 Hz 1 min
Impulse withstand voltage	Between power terminals: 1 kV Between current carrying terminals and exposed non-current carrying metal parts: 1.5 kV
Noise immunity	±1.5 kV (between power terminals), square-wave noise by noise simulator (pulse width: 100 ns/1 μs, 1-ns rise)
Static immunity	Mulfunction: 8 kV, Destruction: 15 kV
Vibration resistance	Destruction: 10 to 55 Hz, 0.75 mm single amplitude each in 3 directions for 2 h Malfunction: 10 to 55 Hz, 0.5 mm single amplitude each in 3 directions for 10 min
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 (relay output)	Electrical: 100,000 operations min. (5 A at 250 VAC, resistive load at 1800 operations/h) Mechanical: 20 million operations min. (under no load at 1,800 operations/h)
Degree of protection	Panel surface: IP40 Terminals: IP00
Connecting method	8-pin round socket
Case color	Munsell 5Y7/1
Weight	Approx. 90 g
Accessories	Instruction manual, Compliance information sheet
Applicable socket	P2CF-08/ P2CF-08-E/ PF085A/ P3G-08/ PL08/ PL08-Q/ PLE08-0

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Dimensions

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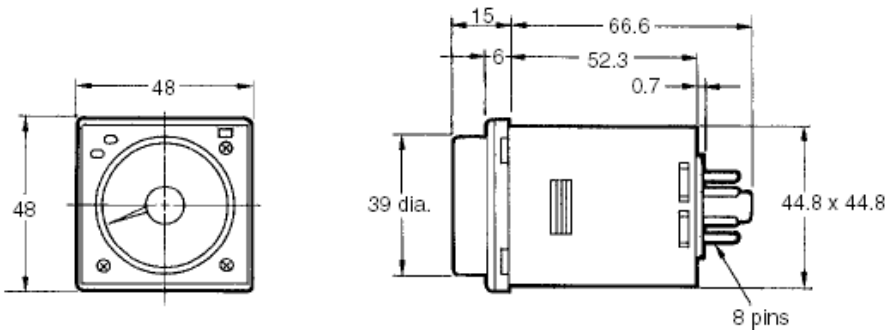
Outline drawing



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Internal connection

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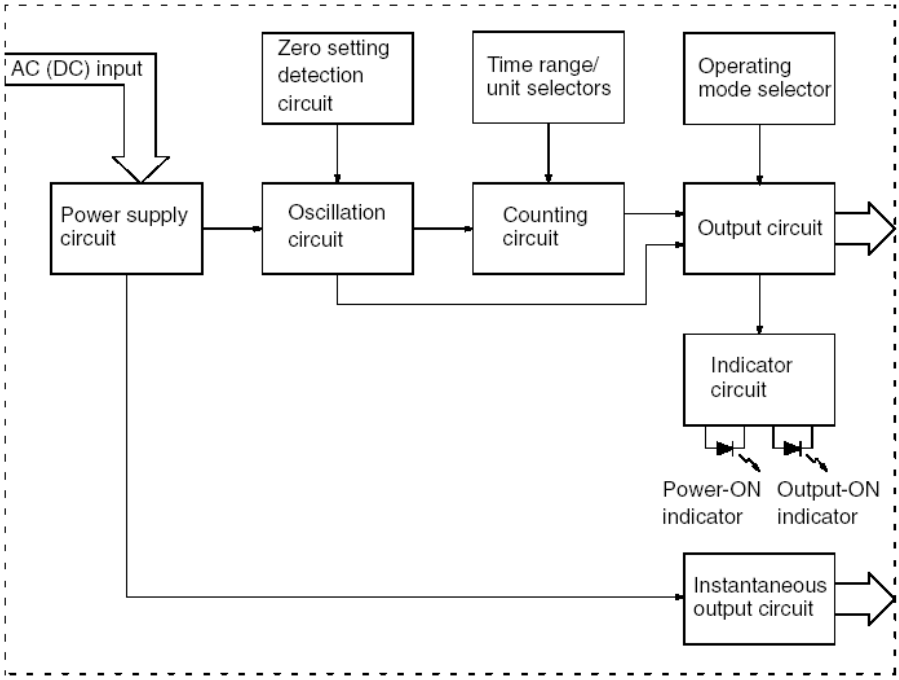
Internal connection



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Terminal arrangement

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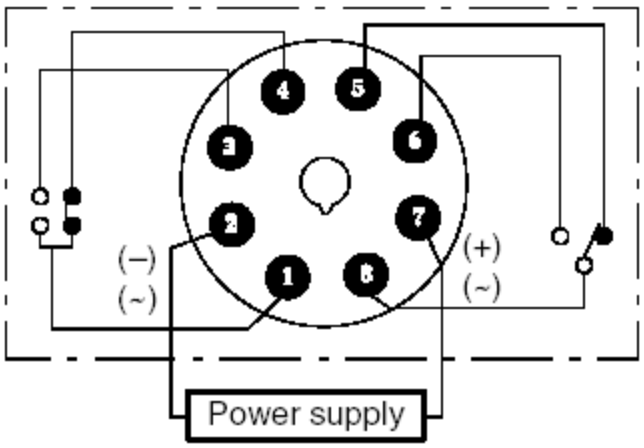
Terminal arrangement



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Time ranges

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Time ranges

Standard (0.05-s to 300-h) Models

Time unit		s (sec)	×10 s (10 sec)	min (min)	×10 min (10 min)	h (hrs)	×10 h (10 hrs)
Full scale setting	1.2	0.05 to 1.2	1.2 to 12	0.12 to 1.2	1.2 to 12	0.12 to 1.2	1.2 to 12
	3	0.3 to 3	3 to 30	0.3 to 3	3 to 30	0.3 to 3	3 to 30
	12	1.2 to 12	12 to 120	1.2 to 12	12 to 120	1.2 to 12	12 to 120
	30	3 to 30	30 to 300	3 to 30	30 to 300	3 to 30	30 to 300

Note: When the time setting knob is turned below "0" until the point where the time setting knob stops, the output will operate instantaneously at all time range settings.

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Operating chart

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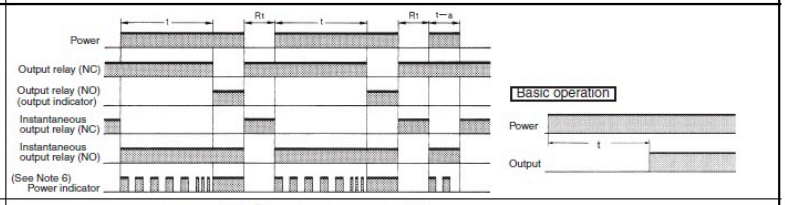
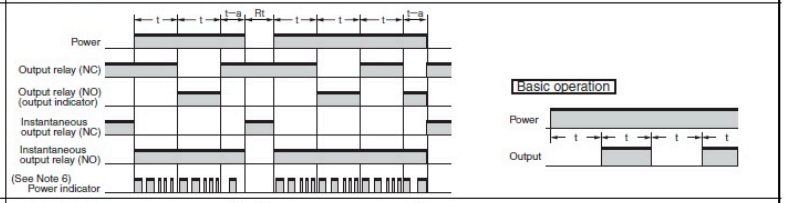
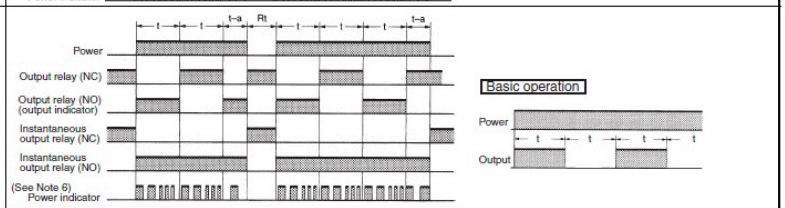
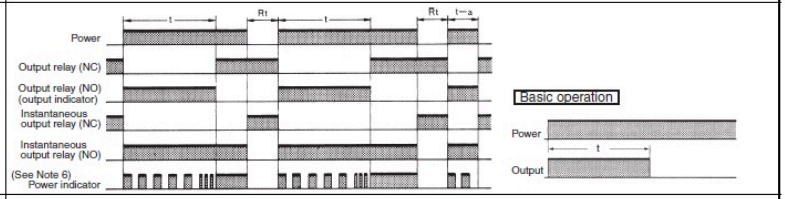
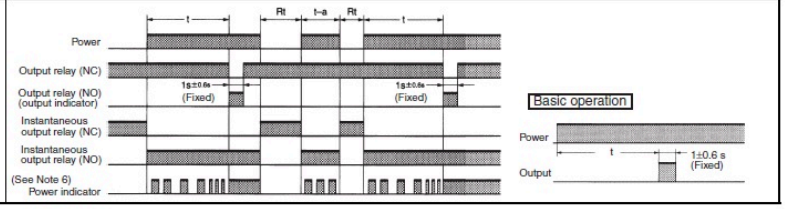
Operating chart

Operating mode	Timing chart
A: ON-delay	
B: Flicker OFF start	
B_2: Flicker ON start	
E: Interval	
J: One-shot output	

Note: 1. Allow a timer reset time (Rt) of 0.1 s or longer.
2. The letter "t" in the timing charts indicates the set time, and "t-a" means that the period is less than the set time. (t - a < 1)
3. Model H3CR-A8S only has operation equivalent to time-limit contact: NO.
4. When the setting dial is turned all the way past 0 for intantaneous output, "t" (set time) in the above time chart is 0-sec operation.
5. You can use J Mode to use the power supply as the start input.
6. During timer operation, the flash frequency changes when 90% of the set time has been reached.

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Electrical life curve

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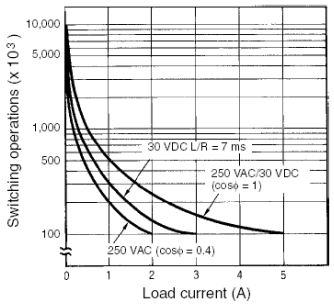
Electrical life curve



Reference: A maximum current of 0.15 A can be switched at 125 VDC (cosϕ = 1) and a maximum current of 0.1 A can be switched if L/R is 7 ms. In both cases, a life of 100,000 operations can be expected.
The minimum applicable load is 10 mA (100 mA for H3CR-A8E) at 5 VDC (failure level: P).

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