Mechatronic Analog Timer
H3AM

Please read and understand this catalog before purchasing the products. Please consult your OMRON representative if you have any questions or comments. Refer to *Safety Precautions* on page 7.

Large Setting Dial and Moving Pointers Ideal for Easy Operation and Monitoring

- Incorporating an easy-to-see large setting dial with moving pointers.
- Wide time-setting range of 0.2 s to 60 h (available through three time-range model types)
- Wide AC power supply range (100 to 240 VAC)
- IP65 watertight and dust-tight front panel.
- Approved by UL and CSA.
- Conforms to EN61812-1 and IEC60664-1 4 kV for Low Voltage, and EMC Directives.
- Conforms to EMC standards.
- Six-language instruction manual provided.
- Programmable contact enables the building of a self-holding relay circuit as well as built-in instantaneous contact. (-NS)
- Memory retention (-NSR)
- Finger protection terminal block
- Enables easy sequence checks through instantaneous outputs for a zero set value at any time range.

Model Number Legend

H3AM - NS□ - □ - □
1 2 3

1. Resetting System
None: Self-resetting
R: Electric resetting

2. Time Range
A: 0.5 s to 30 h
B: 1 s to 60 h
C: 0.2 s to 12 h

3. Accessory
None: Without accessory
300: Waterproof Packing (Y92S-35) provided

Ordering Information

■ List of Models

Rated supply voltage	Resetting system (See note.)	Control output	Time range		
			0.5 s to 30 h (30 s, 3 min, 30 min, 3 h, 30 h)	1 s to 60 h (60 s, 6 min, 60 min, 6 h, 60 h)	0.2 s to 12 h (12 s, 120 s, 12 min, 120 min, 12 h)
100 to 240 VAC	Self-resetting	DPDT contact output (Time-limit output SPDT and switchable SPDT (time-limit ↔ instantaneous))	H3AM-NS-A	H3AM-NS-B	H3AM-NS-C
	Electric resetting	DPDT contact output (Time-limit output SPDT and instantaneous output SPDT)	H3AM-NSR-A	H3AM-NSR-B	H3AM-NSR-C

Note: The operation of the instantaneous contacts differs for the self-resetting and electric resetting systems. Refer to *Timing Charts* on page 5 for details.

■ Accessory (Order Separately)

Item	Model
Waterproof Packing	Y92S-35 (See note.)

Note: Supplied with H3AM-NS□-□-300 models.

Specifications

■ General

Operating mode	ON-delay
Screw tightening torque	0.98 N·m (10 kgf) max.
Input type	Voltage input
Output type	Relay: DPDT
Mounting method	Flush/Panel mounting, no restriction on mounting angle.
Approved standards	UL 508, CSA C22.2 No. 14 Conforms to EN61812-1, IEC60664-1 4 kV/2, VDE0106/P100 Output category according to IEC60947-5-1

■ Time Ranges

Model	Full scale on dial	Set time unit					
		s	10 s	min	10 min	h (hour)	10 h (hour)
H3AM-□□□-A	3	---	0.5 to 30 s	0.05 to 3 min	0.5 to 30 min	0.05 to 3 h	0.5 to 30 h
H3AM-□□□-B	6	---	1 to 60 s	0.1 to 6 min	1 to 60 min	0.1 to 6 h	1 to 60 h
H3AM-□□□-C	12	0.2 to12 s	2 to 120 s	0.2 to 12 min	2 to 120 min	0.2 to 12 h	---

Note: Instantaneous output is obtained by turning the time setting knob below "0" until the time setting knob stops.

■ Ratings

Rated supply voltage	100 to 240 VAC (50/60 Hz)
Operating voltage range	85% to 110% of rated supply voltage
Power reset (-NS)	Minimum power-opening time: 0.5 s
Reset input time (-NSR)	Minimum input time: 0.5 s
Reset voltage range (-NSR)	H level: 85 to 264 VAC L level: 0 to 10 VAC
Power consumption	Approx. 9 VA (Approx. 5 W)
Control output	Contact output: 5 A at 250 VAC, resistive load ($\cos\phi = 1$)
Ambient temperature	Operating: –10°C to 55°C (with no icing) Storage: –25°C to 65°C (with no icing)
Ambient humidity	Operating: 35% to 85%

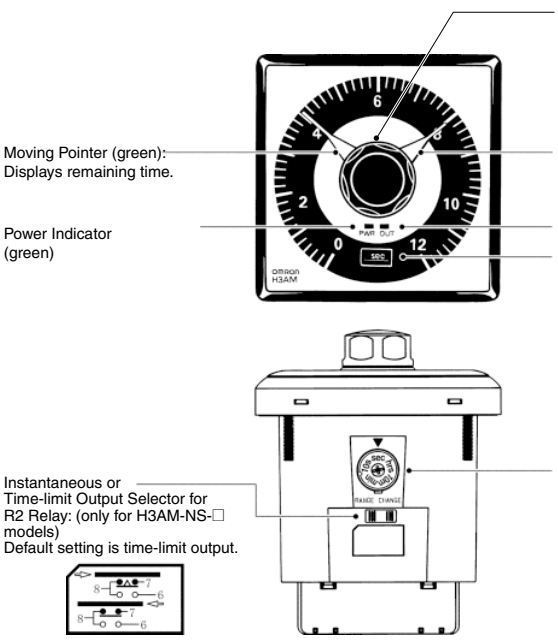
Note: The minimum applicable load:
H3AM-NS: 10 mA at 5 VDC (failure level: P, reference value)
H3AM-NSR: 100 mA at 5 VDC (failure level: P, reference value)

■ Characteristics

Accuracy of operating time	±0.7% FS max.
Setting error	±2% FS max.
Reset time	Power reset: 0.5 s max. Reset input time: 0.5 s max.
Influence of voltage	±1% FS max.
Influence of temperature	±2% FS max.
Insulation resistance	100 MΩ max. (at 500 VDC)
Dielectric strength	2,000 VAC (50/60 Hz) for 1 min between exposed non-current-carrying metal parts and current-carrying metal parts 2,000 VAC (50/60 Hz) for 1 min between the operating circuit and control output terminals 1,000 VAC (50/60 Hz) for 1 min between the operating power supply circuit and reset input circuit (H3AM-NSR only) 1,000 VAC (50/60 Hz) for 1 min between contacts not located next to each other 2,000 VAC (50/60 Hz) for 1 min between contacts of opposite poles
Impulse withstand voltage	3 kV between power terminals 4.5 kV between exposed non-current-carrying metal parts and current-carrying metal parts
Noise immunity	±1.5 kV (between power terminals) square-wave noise by a noise simulator (pulse width: 100 ns/1 μs, 1-ns rise)
Static immunity	Malfunction: 8 kV Destruction: 15 kV
Vibration resistance	Destruction: 10 to 55 Hz, 0.75-mm single amplitude for 2 cycles each in 3 directions (8 min per cycle) Malfunction: 10 to 55 Hz, 0.5-mm single amplitude for 2 cycles each in 3 directions (8 min per cycle)
Shock resistance	Destruction: 300 m/s^2 3 times each in 6 directions Malfunction: 150 m/s^2 (100 m/s^2 in the front/back direction) 3 times each in 6 directions
Life expectancy	Mechanical: 5,000,000 times min. (under no load at 1,800 times/h) Electrical: 100,000 times min. (5-A at 250 VAC, resistive load at 1,800 times/h)
Motor life expectancy	20,000 h
EMC	(EMI): EN61812-1 Emission Enclosure: EN55011 class A Emission AC Mains: EN55011 class A (EMS): EN61812-1 Immunity ESD: IEC61000-4-2: 6 kV contact discharge 8 kV air discharge Immunity RF-interference: IEC61000-4-3: 10 V/m (Amplitude-modulated, 80 MHz to 1 GHz) 10 V/m (Pulse-modulated, 900 MHz±5 MHz) Immunity Power Frequency Magnetic Fields: IEC61000-4-8: 30 A/m (50 Hz) Immunity Conducted Disturbance: IEC61000-4-6: 10 V (0.15 to 80 MHz) Immunity Burst: IEC61000-4-4: 2 kV power-line 2 kV I/O signal-line Immunity Surge: IEC61000-4-5: 1 kV line to line 2 kV line to ground
Enclosure rating	IP65 (front panel only) (See note.) IP20 (terminal section)
Weight	Approx. 350 g

Note: A separately sold waterproof packing (Y92S-35) is necessary to ensure IP65 waterproofing between the Timer and installation panel. The H3AM-NS□-□-300 model with waterproof packing is available.

Nomenclature



(Illustrated Model: H3AM-□□□-C)

Note: The scale goes up to "3" with the H3AM-□-A and up to "6" with the H3AM-□-B.

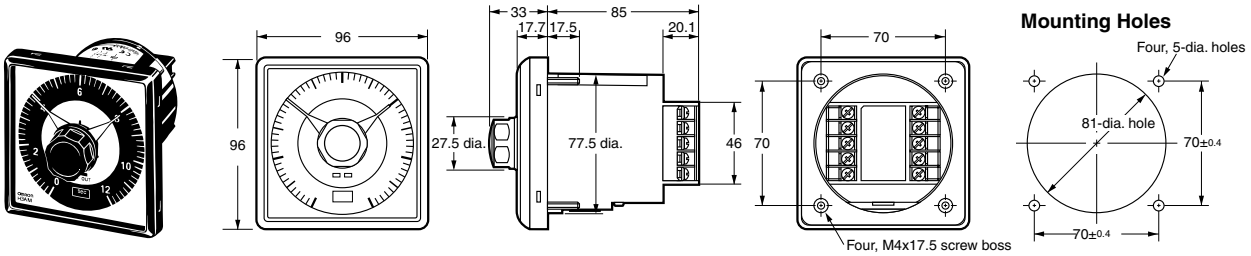
Applicable Time Unit

Model	Full scale on dial	Applicable time unit					
		s	10 s	min	10 min	h	10 h
H3AM-□□□-A	3	No	Yes	Yes	Yes	Yes	Yes
H3AM-□□□-B	6	No	Yes	Yes	Yes	Yes	Yes
H3AM-□□□-C	12	Yes	Yes	Yes	Yes	Yes	No

Dimensions

Note: All units are in millimeters unless otherwise indicated.

H3AM (Flush Mounting)

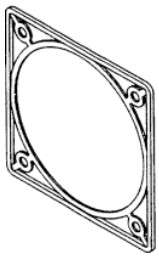


Note: Tightening torque for panel mounting is as follows:
300 m N·m ±50 m N·m

■ Accessories (Order Separately)

Waterproof Packing (Provided with H3AM-NS□-□-300 models.)

Y92S-35

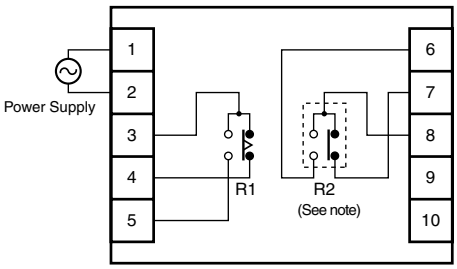


Note: Use Waterproof Packing to provide a level of water protection that complies with IP65 standards.
Depending on the operating environment, the Waterproof Packing may deteriorate, contract, or harden and so regular replacement is recommended.

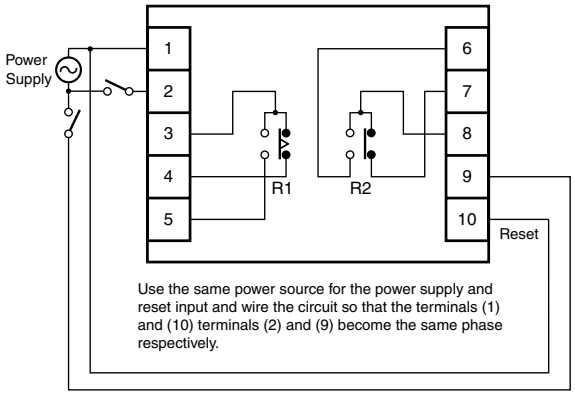
Installation

■ Internal Connections and Terminal Arrangement

H3AM-NS



H3AM-NSR



Note: The R2 relay can be switched between instantaneous and time-limit contacts and thus the contact symbol is shown as follows: