

# Solid-state Counter H7CN

CSM\_H7CN\_DS\_E\_2\_2



## All Required Counter Functions Incorporated in a Compact DIN-sized (48 × 48) Housing

- In addition to Up and Down models, a reversible (Up-Down) counter is also available
- Maximum counting speed of 5,000 cps, never before attained by a small-size preset counter
- Power supply freely selectable within a range of 100 to 240 VAC. Also, power supply for the DC-operated models is selectable within a range of 12 to 48 V
- Models with memory backup function against power failure available



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

## Ordering Information

Classification		Preset Counter								Totalizing Counter
Input signal system (Count & reset inputs)		Contact, Transistor								Contact/Transistor
Mounting method		Flush mounting, surface mounting								
Display		7-segment LEDs (10 mm high), Up indicator								7-segment LEDs (10 mm high)
Number of digits		4 digits (0 to 9,999)								
Backup power for memory protection		No	Yes (100 to 240 VAC only)			No			Yes	
Control output		Contact (SPST-NO)		Contact (SPDT)		Contact (SPST-NO)		Transistor (open-collector)		---
Operating mode		Up counting	Down counting	Up counting	Down counting	Reversible counting, command input	Reversible counting, individual input	Up counting	Down counting	Up counting
Max. counting speed	30 cps	H7CN-XLN	H7CN-YLN	H7CN-XLNM	H7CN-YLNM	H7CN-ALN	H7CN-BLN	---	---	H7CN-TXL
	5 kcps (see note 1.)	H7CN-XHN	H7CN-YHN	H7CN-XHNM	H7CN-YHNM	H7CN-AHN	H7CN-BHN	H7CN-XHNS	H7CN-YHNS	H7CN-TXH

- Note:** 1. Only the transistor input signal is available when the maximum counting speed is 5,000 cps  
2. Specify the power supply voltage when ordering.

## Accessories (Order Separately)

Protective Cover	Hard	Y92A-48B
	Soft	Y92A-48D
Flush Mounting Adapter		Y92F-30

## Sockets

Applicable Counter	Track Mounted Socket	Back Connecting Socket
H7CN-□□	P2CF-08(-E)	P3G-08
H7CN-□□M	P2CF-11(-E)	P3GA-11

# Specifications

## ■ Ratings

Supply voltage	24, 100 to 240 VAC 50/60 Hz 12 to 48 VDC (contains 20% ripple max.) (see note 1)
Operating voltage range	85% to 110% of rated voltage
Power consumption (see note 2)	Approx. 12 VA/2.5 W (at 240 VAC, 50Hz) Approx. 2.5 W (at 48 VDC)
Count and reset input	Impedance by short-circuiting contacts: 1 kΩ max. Residual voltage: 2 V max. Impedance by opening contacts: 100 kΩ min.
Max. counting speeds of count input	30 cps (contact and transistor inputs) Minimum pulse width: 16.7 ms (ON/OFF ratio: 1:1) 5,000 cps (transistor inputs) Minimum pulse width: 0.1 ms (ON/OFF ratio: 1:1)
Reset system	Power-OFF reset Reset time: 0.5 s Reset time following power application 0.05 s External reset & manual reset Reset time: 0.02 s Reset time following signal application: 0.05 s
Control output	Contact (SPDT) output: 3 A, 250 VAC, $\cos\phi = 1$ (resistive load) Transistor (open collector) output: 30 VDC MAX. 100 mA max.
Case color	Light gray (Munsell 5Y7/1)

- Note:** 1. The memory backup function is not available for this DC supply voltage range.  
2. On power application, an inrush current of approximately 10 times the normal current flows through the Counter.

## ■ Characteristics

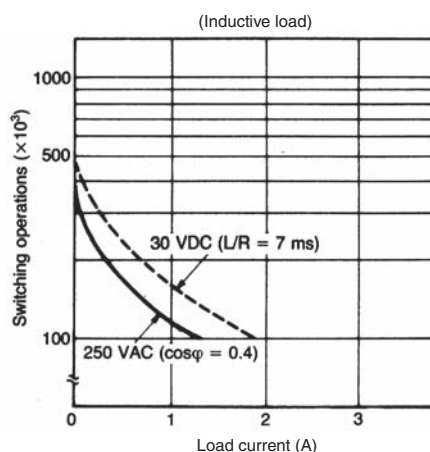
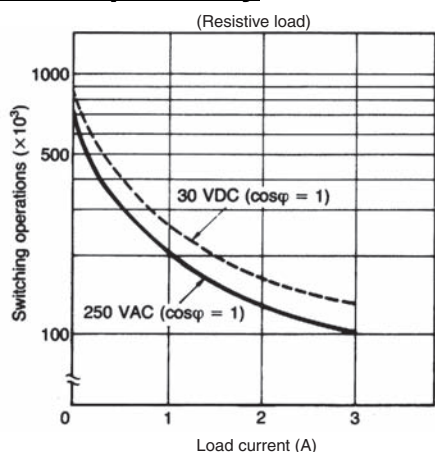
Item	Preset Counter	Totalizing Counter
Insulation resistance	100 MΩ min. (at 500 VDC) (between current-carrying terminal and exposed non-current-carrying metal parts, and between non-continuous contacts)	100 MΩ min. (at 500 VDC) (between current-carrying terminal and exposed non-current-carrying metal parts)
Dielectric strength	2,000 VAC, 50/60 Hz for 1 min (between current-carrying terminal and exposed non-current carrying metal parts and between non-continuous contacts)	2,000 VAC, 50/60 Hz for 1 min (between current-carrying terminal and exposed non-current carrying metal parts)
Impulse withstand voltage	6 kV (between power terminals) 6 kV (between current-carrying terminal and exposed non-current-carrying metal parts)	
Noise immunity	±2 kV (between power terminals), ±500 V (between input terminals), square-wave noise by noise simulator	
Static immunity	Malfunction: 8 kV	
Vibration resistance	Destruction: 10 to 55 Hz, 0.75-mm single amplitude Malfunction: 10 to 55 Hz, 0.5-mm single amplitude	
Shock resistance	Destruction: 300 m/s <sup>2</sup> (approx. 30G) Malfunction: 100 m/s <sup>2</sup> (approx. 10G)	
Ambient temperature	Operating: -10°C to 55°C (with no icing) Storage: -25°C to 65°C (with no icing)	
Ambient humidity	35% to 85%	
Life expectancy	Mechanical: 10 million operations min. Electrical: 100,000 operations min. (3 A at 250 VAC, resistive load)	---
Weight	Approx. 110 g	

## ■ Applicable Standards

Approved safety standards	UL508/CSA C22.2 No. 14 EN 61010-1 (IEC 61010-1): Pollution degree 2/overvoltage category II	
EMC	(EMI)	EN61326
	Emission Enclosure:	EN 55011 Group 1 class A
	Emission AC mains:	EN 55011 Group 1 class A
	(EMS)	EN61326
	Immunity ESD:	EN 61000-4-2
	Immunity RF-interference:	EN 61000-4-3
	Immunity Conducted Disturbance:	EN 61000-4-6
	Immunity Burst:	EN 61000-4-4
	Immunity Surge:	EN 61000-4-5
	Immunity Voltage Dip/Interruption:	EN 61000-4-11

# Engineering Data

## Electrical Life Expectancy

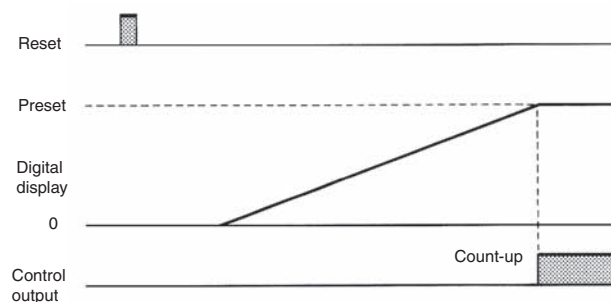


## Operation

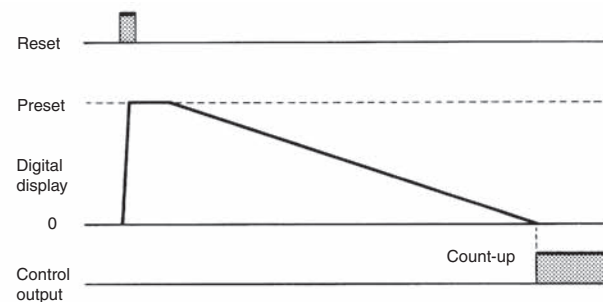
### ■ Timing Charts

#### Preset Counter

##### Up Type



##### Down Type



##### Up/Down A, B Types

