

KCN-T

Small Total Counters

Maximum counting speed: 30cps, 1kcps (4 digits) or 5kcps (6 digits)

With the small body, the total counter features an LCD display as large as possible to facilitate reading.



Merits

● Small body and easy to see display

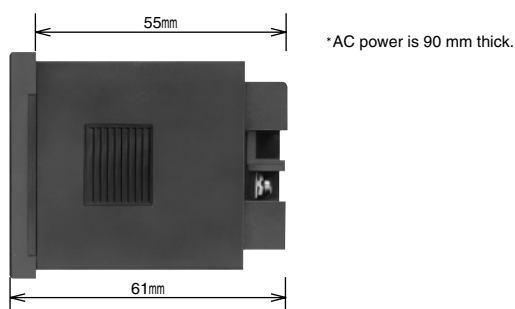
With its body of only 48 mm by 48 mm, the counter provides full screen display of either four-digit or six-digit numbers with the height of 13 mm or 10 mm.

● Backlit LCD display

Displayed values are backlit to facilitate reading in darkness.

● DC power as thin as 55 mm

With minimum space requirement, the control board can be installed anywhere.



● EEPROM to eliminate cell replacement

The counter integrates an EEPROM to eliminate the use of cells. All counts are stored in this memory.

● Water proofed front panel

The keypad on the front panel is completely coated (IP64) to insulate dust and water.

● Keypad cover to prevent erroneous operation

A keypad cover is attached to protect the Reset key from being pressed during operation.

List of Models

Accessories: Installation frame, key protective cover.

Source voltage	4-digit	6-digit
AC power	KCN-4T	KCN-6T
DC power	KCN-4T-C	KCN-6T-C

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General Specifications

Item	Specification	
	AC power	DC power
Source voltage	AC 85~115V or AC 180~240V	DC 20~28V (Max. 10% p-p ripple)
Power consumption	Approx. 5VA	Approx. 2W
Sensor power	DC 24V (20~8V) 15mA (Max. 10% p-p ripple)	None
Memory backup at power failure	EEPROM (Up to 100,000 writes)	
Ambient temperature	-10~+50°C	
Storage temperature	-25~+70°C (with no freezing)	
Ambient/Storage humidity	35~85%RH (with no dewing)	
Withstand voltage	AC 2kV for one minute between AC power and 0V	
Insulation resistance	Min. 20MΩ at DC 500V between AC power and 0V	
Vibration resistance	Durable for one hour along three axes at 10 to 55Hz with 0.5mm amplitude No error for one hour along three axes at 10 to 55Hz with 0.35mm amplitude	
Shock resistance	Durable for 11ms along three axes at 490m/s ² (50G) No error for 11ms along three axes at 98m/s ² (10G)	
Noise resistance *	±1.5kV between power terminals (square wave pulse with 1μs width and 1ns rise time)	
Coating	IP64 for the keypad on the front panel against dust and splash.	
Installation	Flush mounting	
Connection	Terminal block	
Mass (weight)	Approx. 220g	Approx. 110g

*Noise tests also include static discharge test and NEMA compliance tests.

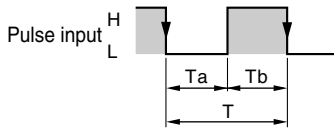
Performance Specifications

Item	Specification
Model	Total counters
Number of digits	4-digit (KCN-4T and KCN-4T-C) / 6-digit (KCN-6T and KCN-6T-C)
Count display	Backlit LCD with character height of 13mm (4-digit) or 10mm (6-digit)
Counting speed	30cps with terminals ⑤ to ⑥ disconnected 1kcps (4-digit) or 5kcps (6-digit) with terminals ⑤ to ⑥ connected
Counting direction	Addition: Count increments when input signal to 0V terminal changes from High to Low.
Input logic	Negative: ON when input voltage is 0V
External reset input	Minimum pulse width: 5ms
Manual reset	Responded within 100ms
Count disable	Response time On delay: Max. 2.5ms Off delay: Max. 2.5ms

Input Specifications

Count input	Counting speed	4-digit: 30cps or 1kcps 6-digit: 30cps or 5kcps
	Input resistance	3.3kΩ between 24V and input
	Input voltage	ON: 0~3V OFF: 7~30V
Count disable input	Response time	On delay: Max. 2.5ms Off delay: Max. 2.5ms
	Input resistance	3.3kΩ between 24V and input
	Input voltage	ON: 0~3V OFF: 7~30V
External reset input	Response time	On delay: Max. 5ms Off delay: Max. 5ms
	Input resistance	3.3kΩ between 24V and input
	Input voltage	ON: 0~3V OFF: 7~30V

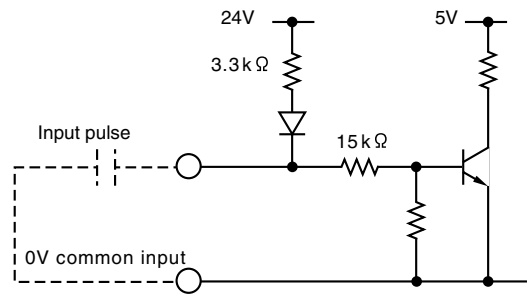
Counting timing



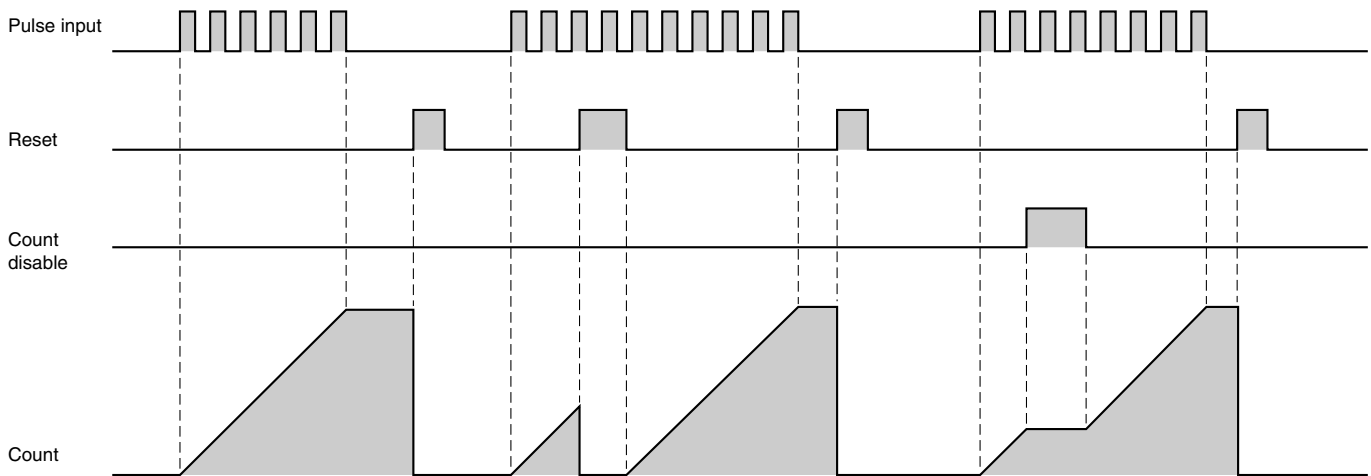
The count increments by 1 at the time indicated by the down arrow.

Counting speed (cps) = $1/T$ (s). This formula should be modified to $1/2 Tb$ or $1/2 Ta$ if Ta is larger than Tb or vice versa.

Input circuit



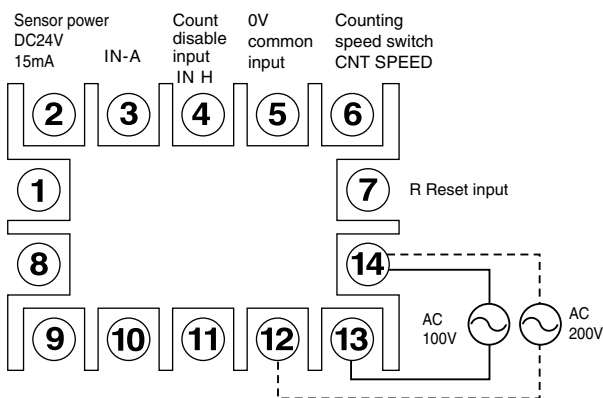
Count diagram



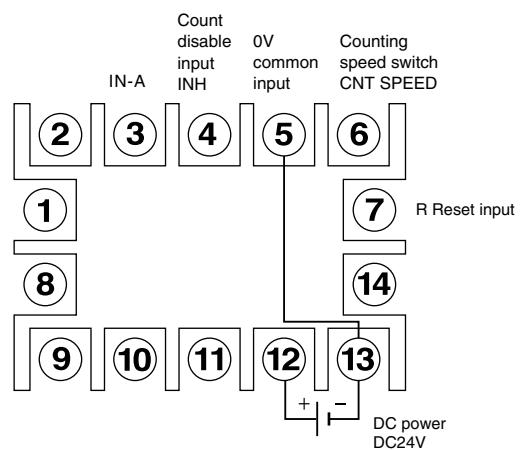
Note: Each signal is ON at Low level, and OFF at High level.

Wiring Diagrams

KCN-4T/KCN-6T



KCN-4T-C/KCN-6T-C



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List of Error Codes

Error code	Description
F F F F F F	Counter overflow

● Solving errors

For an overflow, press the (RST) key to reset the counter and clear the error code.

Note:

The counter continues counting even after an overflow has occurred. This is performed in the range of 0 to 2147483.647.

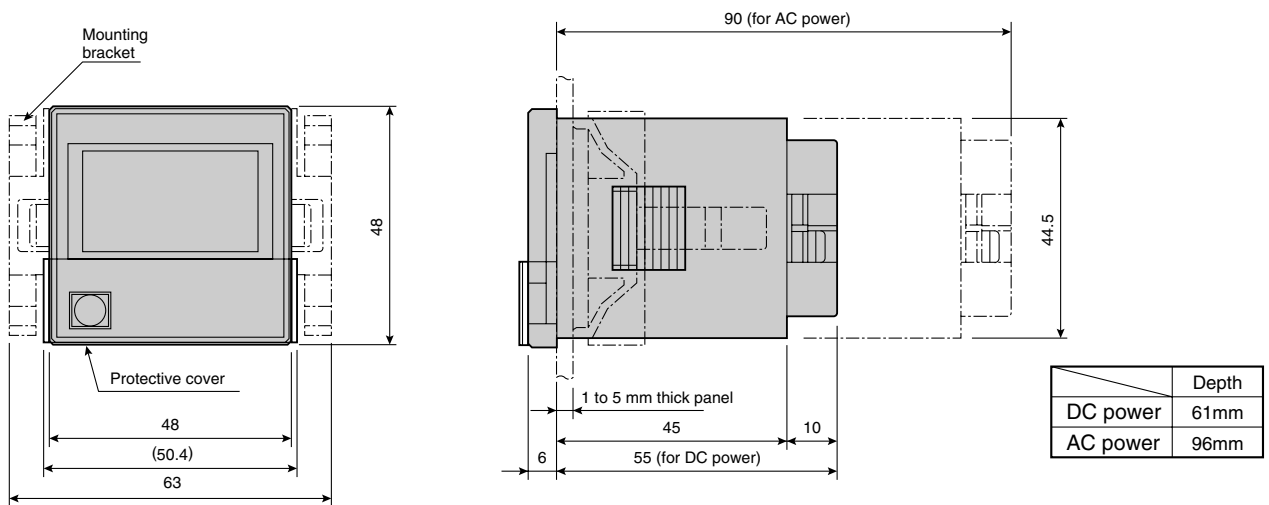
Important

- For DC power source, the 0V terminal 13 and common input (0V) terminal 5 are short circuited.
- Using a relay, bring the power voltage quickly to the rated level.
- Avoid using the counter in the environments where:
 - (1) Ambient temperature is above 50°C or below -10°C.
 - (2) Ambient humidity exceeds 85%, or abrupt temperature changes may cause dewing.

- (3) The operation may be affected by dust, metal chips, corrosive gases or other harmful objects.
- (4) The machine is exposed to direct sunlight.
- (5) You anticipate vibration or shock.
- Keep the following in mind when wiring:
 - (1) The wiring to the counter should be separated from power line.
 - (2) Keep the counter body and wiring away from noise sources.
 - (3) Never use a free terminal as a relay.
- Isolate the counter from the control circuit before testing insulation voltage and resistance.

External Dimensions

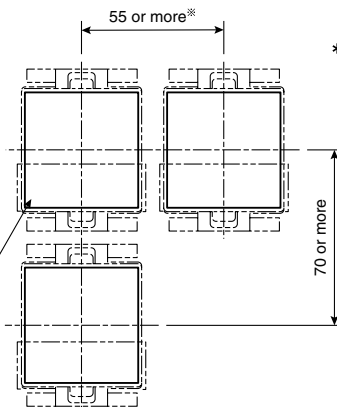
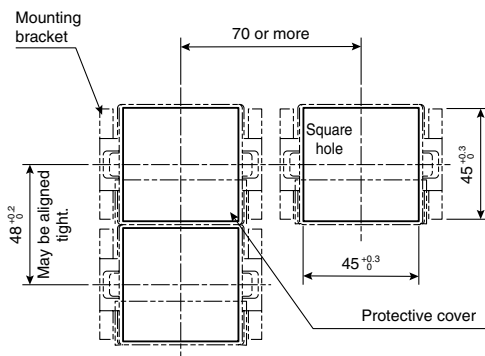
(in mm)



Boring dimensions for Installation

1. Horizontally aligned handles

2. Vertically aligned handles



* 48mm for tight alignment without the protective cover