

KCX-□T

Features

HMI

SENSOR

ENCODER

COUNTER

INFORMATION

Green Display Total Counter

- Maximum counting speed
KCX-4T: for both 10 Hz and 1 kHz
KCX-6T: for both 10 Hz and 5 kHz
KCX-8T: for both 10 Hz and 10 kHz
- An easy-to-see, bright green color is used for the numerical display.
The total counter realizes enhanced usability with a wide range of voltages and plethora of functions.



Features

Easy-to-see Green Display

The numerical display is an easy-to-see green display.
(Green LED with 8 mm high characters)

Counting Input can be Prohibited.

By applying input to the counting input inhibit terminal, counting input can be interrupted to stop counting.

Retentive Memory without Battery Backup

An EEPROM is used for memory storage and a battery that does not require maintenance is used.

A Wide Range of Supply Voltage

Since the KCX-□T has a wide input voltage range of 4.5 to 30 V DC, it can support TTL level to the input source of a 24 V DC system. Moreover, one model can cover the supply voltages of 90 to 132 V AC and 180 to 264 V AC, thus can be used for a wide range of supply voltages.

Latch Functions

By adding input to the latch input terminal, the discrete value at that time can be latched and displayed. When the latch input is removed, the current discrete value is displayed.

Manual Reset can be Prohibited.

The functions of the front manual reset button can be prohibited to prevent misoperation.

Zero Suppression Function

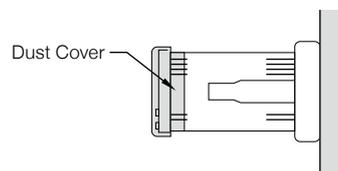
Unnecessary 0 (zeros) of high-order digits are not displayed.

Built-in Power Source for Sensors

Since the counter has a 12 V DC, 50 mA built-in power source for sensors, it can be connected to proximity sensors, photoelectric sensors, and rotary encoders.

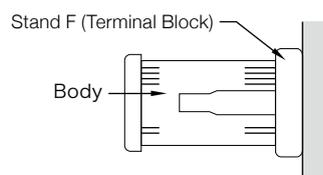
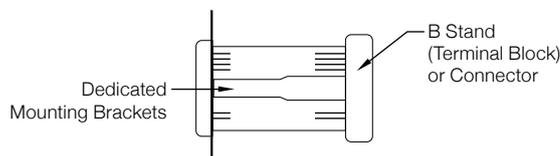
Equipped with a Dust Cover as a Standard Feature

Equipped with dustproof, waterproof cover as a standard feature. The reset button can be operated from outside the cover.



For Both Embedded and Surface-Mount Installation

In the case of embedded installation, the counter can be attached to the panel simply by tightening the dedicated mounting bracket from the back side. In the case of surface-mount installation, the counter can be mounted to and removed from the F terminal (terminal block) by one-touch operation.



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Specifications

PLC HMI SENSOR ENCODER COUNTER INFORMATION 

Electronic Counter

Tachometer

Digital Timer

Programmable Cam

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Specifications

Model Number		KCX-4T	KCX-6T	KCX-8T
Digit		4 digits	6 digits	8 digits
Count Input	Maximum counting speed	For both 10 Hz/1 kHz	For both 10 Hz/5 kHz	For both 10 Hz/10 kHz
	Minimum pulse width	10 Hz: 50 ms 1 kHz: 0.5 ms	10 Hz: 50 ms 5kHz: 0.1 ms	10 Hz: 50 ms 10 kHz: 50 μs
	Input resistance	10 Hz: 6 kΩ 1 kHz: 12 kΩ	10 Hz: 6 kΩ 5kHz: 12 kΩ	10 Hz: 6 kΩ 10 kHz: 12 kΩ
	Input voltage	"L" 0 to 2 V, "H" 4.5 to 30 V		
Disabled Count Input	Response time	On delay: 1 ms or less Off delay: 1 ms or less	On delay: 0.2 ms or less Off delay: 0.2 ms or less	On delay: 0.1 ms or less Off delay: 0.1 ms or less
	Input resistance	6 kΩ		
	Input voltage	"L" 0 to 2 V, "H" 4.5 to 30 V		
Manual Reset	With the front button (Manual reset is prohibited by short-circuiting terminals ① and ⑥.)			
External Reset	Response time	On delay: 1.0 ms or less Off delay: 1.0 ms or less	On delay: 1.0 ms or less Off delay: 1.0 ms or less	On delay: 1.0 ms or less Off delay: 1.0 ms or less
	Input resistance	6 kΩ		
	Input voltage	"L" 0 to 2 V, "H" 4.5 to 30 V		
Retentive Feature for Power Failure		EEPROM Number of overwrite cycles: 100,000 cycles or more		
	Storage time	10 years		
	Input gate response time when power failure occurs	200 ms or less		
	Input gate response time when the power returns	200 ms or less		
Latch Input	Response time	0.5 ms or less	0.1 ms or less	0.1 ms or less
	Input resistance	6 kΩ		
	Input voltage	"L" 0 to 2 V, "H" 4.5 to 30 V		
Power Source for Sensor	12 V DC ±2 V 50 mA Ripple 5% (rms) or lower			
Supply Voltage	90 to 132 V AC/180 to 264 V AC 50/60 Hz 5 VA			
Use Ambient Temperature	Power-on: 0 to +40°C Memory storage: -10 to +50°C			
Storage Temperature	-20 to +50°C (Can be stored at -20 to +70°C for about 1 week during transport)			
Use / Storage Ambient Humidity	35 to 85% RH (No condensation)			
Weight	Approx. 0.5 kg			
Withstand Voltage	2 kV AC 1 min (Between AC power supply terminal, E terminal, and relay contact terminal)			
Insulation Resistance	500 V DC 20MΩ or higher			
Vibration Resistance	Compliant with JIS C 0911. Endurance vibration: Displacement amplitude 0.5 mm 10 to 55 Hz, 3 axial directions Malfunction vibration: Displacement amplitude 0.35 mm 10 to 55 Hz, 3 axial directions			



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Operation

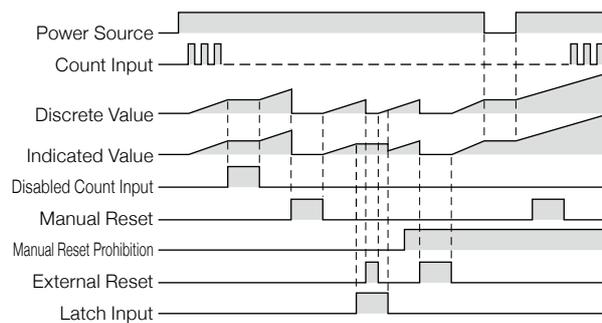
■ Operation

- Counting is enabled 0.2 sec after the power is turned on.
- When the front manual reset button is pressed or a voltage of 4.5 to 30 V is applied to external reset terminal ⑦, the previous memorized discrete value is reset to 0. At this time, the zero suppression function works and 0s from the second digit and higher are not displayed.
- When using the KCX-□T at not more than 10 Hz (10 counts per second), if a counting input signal of a width of 50 ms or more is applied, or when using the KCX-□T at not more than 1 kHz (not more than 5 kHz for KCX-6T, not more than 10 Hz for KCX-8T), if a counting input signal of a width of 0.5 ms (0.1 ms for KCX-6T, 50 μs for KCX-8T) or more is applied, the numerical display increases and the total number of input signals is displayed. Input terminal ② is used for connections of not more than 10 Hz and input terminal ③ is used for connections of not more than 1 kHz (5 kHz and 10 kHz).
- If an input of 4.5 to 30 V is applied to counting inhibit input terminal ⑤ during counting, the counting input can be interrupted to stop counting.
- During counting, if an input of 4.5 to 30 V is applied to latch input terminal ⑩, the discrete value at that time is memorized and displayed. When the latch input is removed, the current discrete value is displayed.

■ Terminal Assignment

Terminal Number	Symbol	Description
1	+12 V	Power source for sensor
2	IN (10 Hz)	Counting input for low speed
3	IN (1 kHz/5 kHz/10 kHz)	Counting input for high speed
4	E	Ground
5	INH	Disabled count input
6	RD	Manual reset prohibition terminal
7	R	External reset input
8	—	(Not connected)
9	—	(Not connected)
10	L	Latch input
11	—	(Not connected)
12	180 to 264 V AC	AC power input
13	90 to 132 V AC	
14	0 V AC	

《Operation chart》



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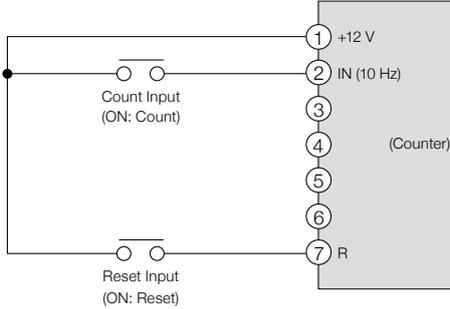
- PLC
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- INFORMATION

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Terminal Connections

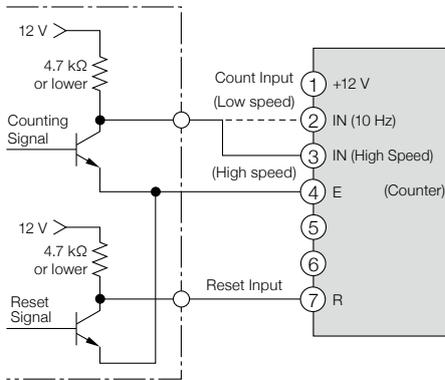
Connection of Counting Input

1. In the case of contact input signals

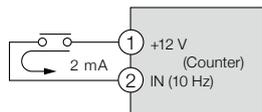


2. In the case of no-contact input signals

The counting input can be selected from low-speed input and high-speed input.

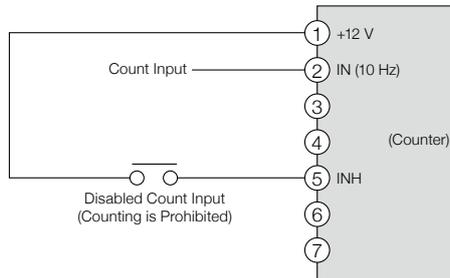


When used as shown in the figure below, the voltage and current that flow through the contact point are around 2 mA. Therefore, the use of the contact point for minute electric current improves reliability. Since the contact point of the electromagnetic switch is designed for large current and high voltage, it is not suitable for use for contact input of the counter.



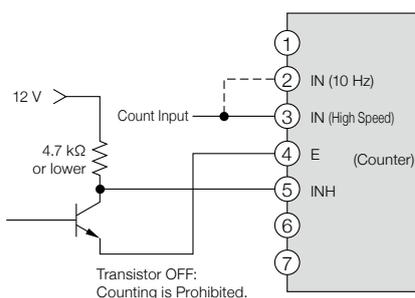
Connection of a Counting Prohibit Input

1. In the case of contact input signals



2. In the case of no-contact input signals

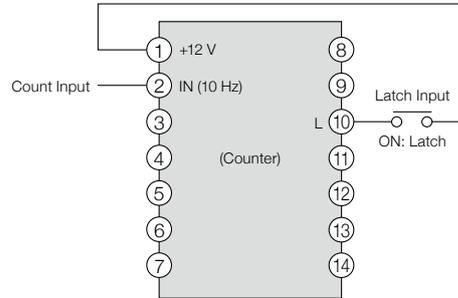
The counting input can be either low speed input or high speed input.



Connection of a Latched Input

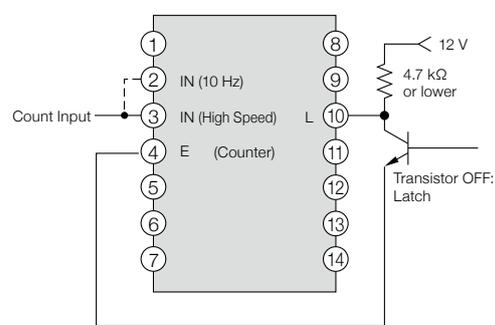
1. In the case of contact input signals

When using the latch for the contact signal, only low speed input can be used as the counting input.

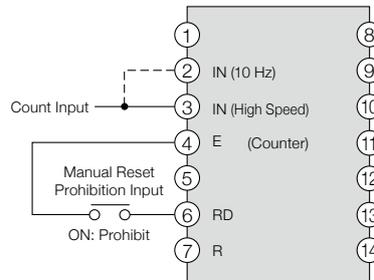


2. In the case of no-contact input signals

The counting input can be either low speed input or high speed input.



How to Prohibit Manual Reset



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