KCX-B

Features

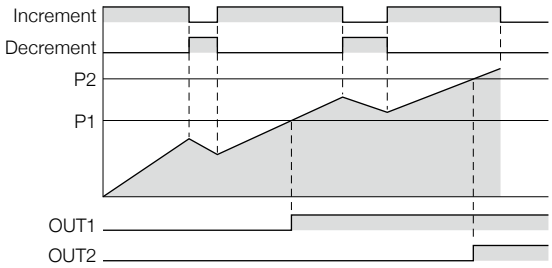
High Speed Increment-Decrement Counter, Single, Double Preset

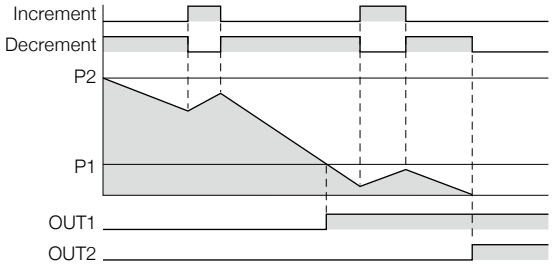
- Maximum counting speed: for both 10 Hz and 20 kHz
- The 6-digit preset electronic counter with the green display can be used for operations in both the increment mode and the decrement mode.
- In increment to the operation as a conventional preset counter, the KCX-B has a comparative operation mode and can be used for counting and identifying items. The KCX-B can switch between positive logic and negative logic for input and output, and can be connected to source and sink input/output.

Features

Switchable to Count Up and Down

The operation mode can be switched between increment and decrement. The KCX-B can be used for a wide range of applications including high-precision sizing cutters and winding machines.





Equipped with a Dust Cover as a Standard Feature

All models are equipped with a dust cover as a standard feature, and the setter can be operated from outside the dust cover.

High Speed Response of 20 kHz

The KCX-B has a miniature design of 72 x 72 mm but enables high-speed counting of 20 kHz.
Since the counting speed can be changed to 10 Hz, the KCX-B can be also used for contact input.

Supports 2-phase Phase Difference Input / Add-subtract Individual Input.

Other than rotary encoders, input devices such as proximity sensors and relay contacts can be used. In the case of add-subtract individual input, since both increment input and decrement input can be simultaneously input, the KCX-B can be used to manage the quantity of workpieces on conveyers and the numbers of cars in parking lots.

Wide-ranging Output Operation Mode Select Function

The output operation mode can be switched using a rotary switch on the back. In increment to conventional coincidence output operation, 6 kinds of output operation modes for the single setting type and 10 kinds of output operation modes for the double setting type can be selected, including comparative output operation.

KCX-B
Specifications

Specifications

Model Number	Standard	KCX-B6	KCX-B6W
	Retentive Memory Type	KCX-B6M	KCX-B6WM
Available number of Presets		Single	Double
Digit		6 digits	6 digits
Count Input	Maximum counting speed	10 Hz 20 kHz Changed by switch	
	Input resistance	Positive logic input: 2.2 kΩ Negative logic input: 4.7 kΩ	
	Input voltage	"L" 0 to 6 V, "H" 12 to 30 V	
Disabled Count Input	Response time	On delay: 25 µs or less Off delay: 25 µs or less	
	Input resistance	Positive logic input: 2.2 kΩ Negative logic input: 4.7 kΩ	
	Input voltage	"L" 0 to 6 V, "H" 12 to 30 V	
External Reset Input	Response time	On delay: 5 ms or less Off delay: 5 ms or less	
	Input resistance	Positive logic input: 2.2 kΩ Negative logic input: 4.7 kΩ	
	Input voltage	"L" 0 to 6 V, "H" 12 to 30 V	
Automatic Reset	Reset time	50 µs or less	
Non-contact Output	Number of circuits	1 circuit	2 circuit
	During output of positive logic	Voltage: 16 to 28 V (No-load voltage 28 V) Current: 15 mA or lower	
	During output of negative logic	Load voltage: 35 V or lower Load current: 30 mA or lower Residual voltage: 1.5 V or lower	
Contact Output	Number of circuits	1 transfer contact (1c)	2 N.O. contact
	Contact capacity	220 V AC 2A (Resistance load)	
	Electrical life	200,000 times or more (Resistance load)	
	Mechanical life	20 million times or more	
Input/Output Response Time	Non-contact output	10 Hz: Approx. 30 ms 20 kHz: Approx. 30 µs	
	Contact output	10 Hz: Approx. 40 ms 20 kHz: Approx. 10 ms	
Power Source Reset KCX-B6 KCX-B6W	Power supply shutdown time	500 ms or more	
	Reset time*	500 ms or more	
Power Failure Memory Function KCX-B6M KCX-B6WM		EEPROM Number of overwrite cycles: 100,000 cycles or more	
	Storage time	10 years	
	Input gate response time when power failure occurs	20 to 500 ms	
	Input gate response time when the power returns	50 to 500 ms	
Power Source for Sensor	24 V DC (20 to 28 V) 80 mA		
Withstand Voltage	2 kV AC 1 min (Between AC power supply terminal, E terminal, and relay contact terminal)		
Vibration Resistance	Compliant with JIS C 0911. Endurance vibration: Displacement amplitude 0.5 mm 10 to 55Hz, 3 axial directions Malfunction vibration: Displacement amplitude 0.35 mm 10 to 55Hz, 3 axial directions		
Noise Resistance	1 µs width, square-wave pulse, 1 kV		
Supply Voltage	90 to 132 V AC, 180 to 264 V 14 VA		
Use Ambient Temperature	-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		

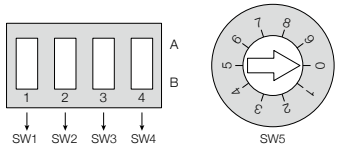
* Time until the counting is enabled after the power is turned on

KCX-B

Operation

Operation

Various operation modes can be selected using the 4 DIP switches and the 10-poistion rotary switch on the back of the case.



Input Operation Switching (SW1 to 4)

The 4 DIP switches are used for setting the input operation of the counter, enabling the switching of input speed, counting method, add-subtract mode, and logic.

Switch Number	Function	Position	Operation
1	Counting input speed	A	10 Hz
		B	20 kHz
2	Counting system	A	Individual increment and decrement input
		B	2-phase phase difference input
3	Counter operation mode	A	Decrement mode
		B	Increment mode
4	Input/Output logic	A	Negative logic
		B	Positive logic

Output Operation Switching (SW5)

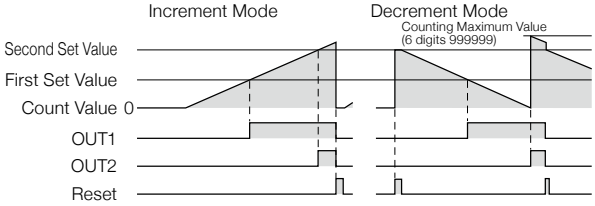
The 10-poisiton rotary switch is used for selecting the operation mode of the counter. By the operation of this switch, 6 output operations can be selected for the single preset type and 10 output operations can be selected for the double preset type.

Position	OUT1		OUT2	
	Counting	Output	Counting	Output
0	Continuous	Holding	Continuous	Holding
1				50 to 1,000 ms
2			Reset	
3		100 ms	Continuous	Holding
4				50 to 1,000 ms
5			Reset	
6	C≦P1		C≧P2	
7			P1≦C≦P2	
8	C≧P2		C<0	
9	P1≦C≦P2		C≧P2	

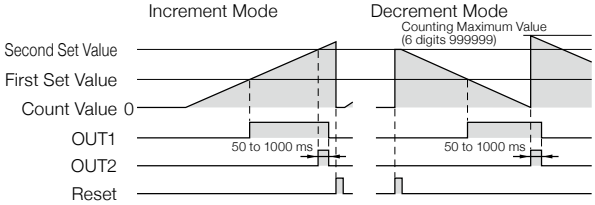
C: Discrete value P1: First set value P2: Second set value

《Operation chart》

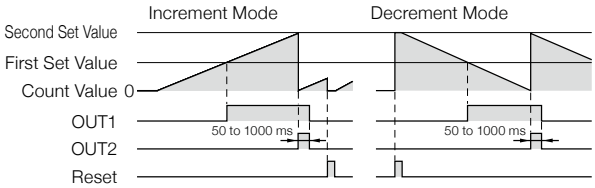
- Operation of the 0 position



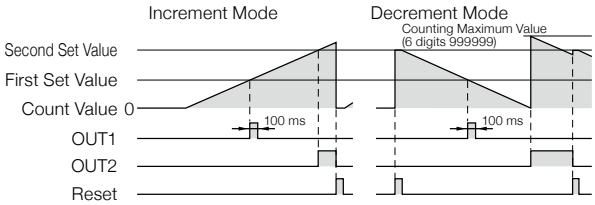
- Operation of the 1 position



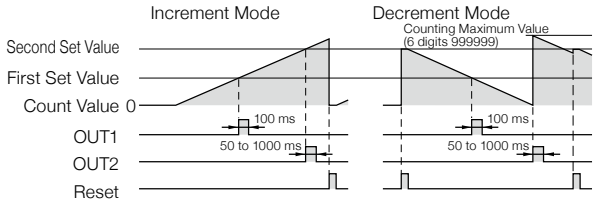
- Operation of the 2 position



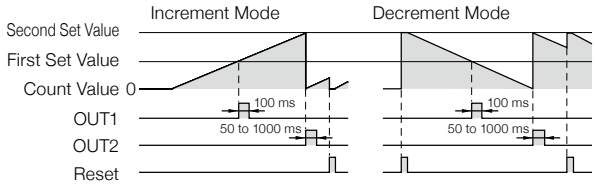
- Operation of the 3 position



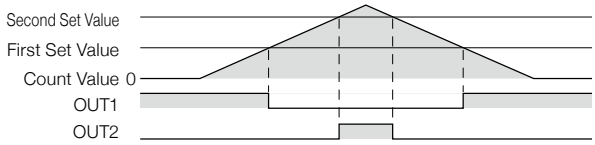
- Operation of the 4 position



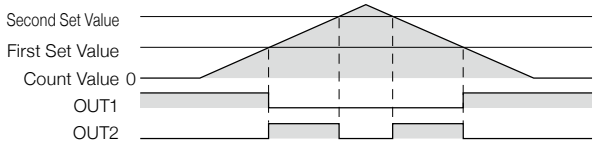
- Operation of the 5 position



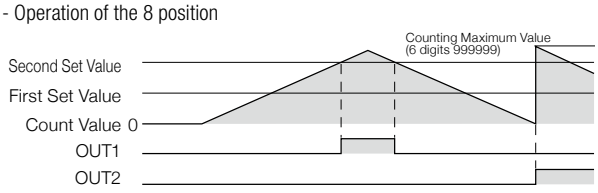
- Operation of the 6 position



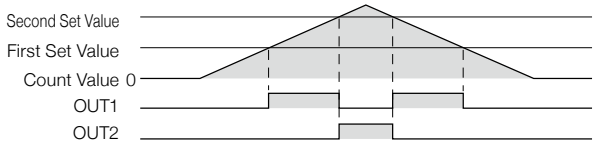
- Operation of the 7 position



- Operation of the 8 position



- Operation of the 9 position



KCX-B
Connection

Terminal Assignment

KCX-B6/B6M

Terminal Number	Symbol	Description
1	+24 V 80 mA	Power source for sensor
2	IN A	Count input A
3	IN B	Count input B
4	E	Input/Output minus common
5	IN H	Disabled count input
6	—	(Not connected)
7	R	External reset input
8	OUT	Non-contact output
9	COM	Contact output common
10	N.O.	Contact output normally open
11	N.C.	Contact output normally closed
12	180 to 264 V AC	Power source input
13	90 to 132 V AC	
14	0 V AC	

KCX-B6W/B6WM

Terminal Number	Symbol	Description
1	+24 V 80 mA	Power source for sensor
2	IN A	Count input A
3	IN B	Count input B
4	E	Input/Output minus common
5	OUT1	First set non-contact output
6	OUT2	Second set non-contact output
7	R	External reset input
8	IN H	Disabled count input
9	COM	Contact output common
10	N.O.1	First set contact output (N.O.)
11	N.O.2	Second set contact output (N.O.)
12	180 to 264 V AC	Power source input
13	90 to 132 V AC	
14	0 V AC	

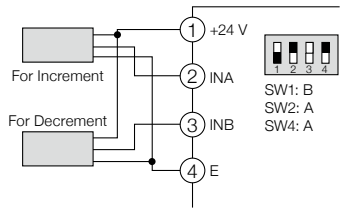
Terminal Connections

Connection of Counting Input

1. In the case of a proximity sensor / photoelectronic sensor

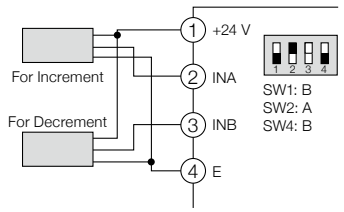
《Negative logic》

The sensor output is an NPN open collector.



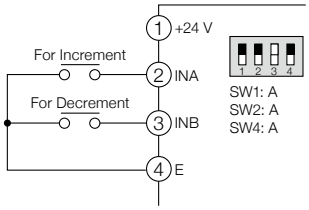
《Positive logic》

The sensor output is an PNP open collector.

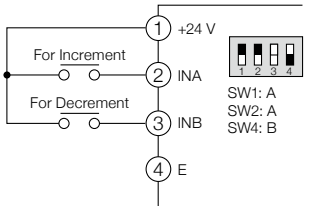


2. Switch / relay

《Negative logic》

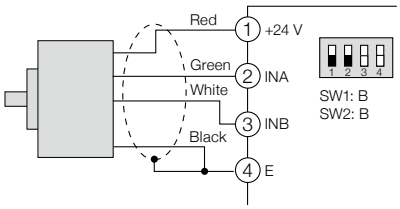


《Positive logic》



3. Rotary encoder

When the TRD-J□-RZ is used, SW4 can be in either position A or position B.



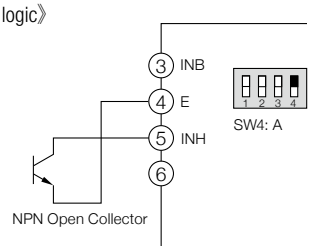
KCX-B

Connection

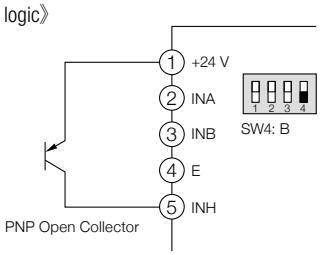
Connection of a Counting Prohibit input

1. KCX-B6/B6M

《Negative logic》

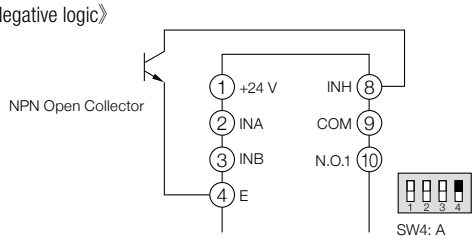


《Positive logic》

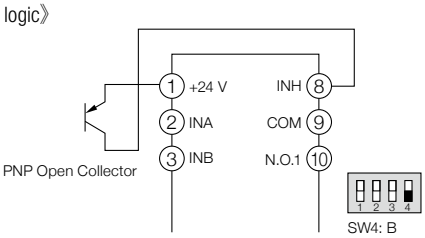


2. KCX-B6W/B6WM

《Negative logic》

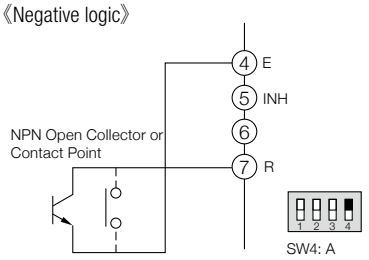


《Positive logic》

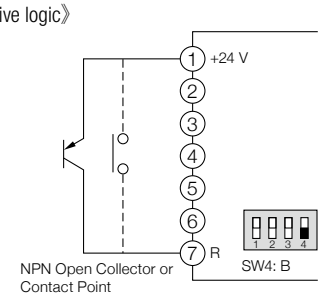


Connection of the Reset Input

《Negative logic》



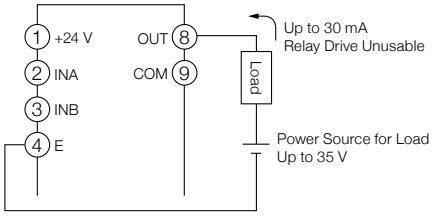
《Positive logic》



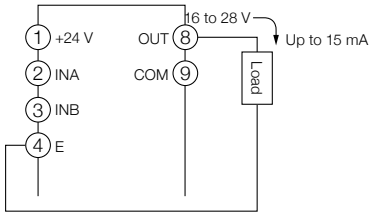
Connection of a Non-contact Output

1. KCX-B6/B6M

《Negative logic》

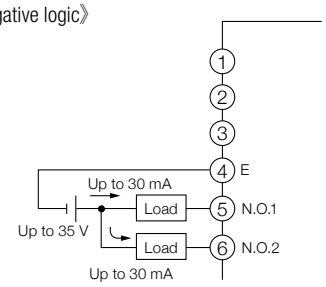


《Positive logic》

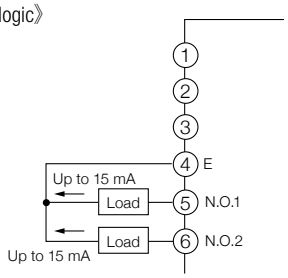


2. KCX-B6W/B6WM

《Negative logic》

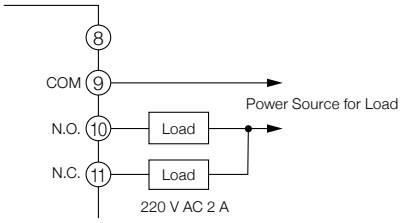


《Positive logic》

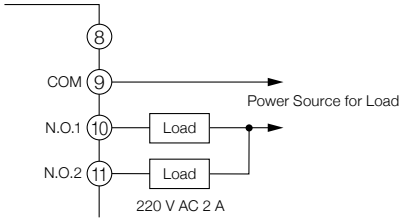


Connection of the Contact Output

1. KCX-B6/B6M



2. KCX-B6W/B6WM



KCX-B

The specifications and prices described in this catalog were valid when the catalog was issued.
For the latest information, contact our sales persons or see our website.