

DIGITAL COUNTERS

KCN-S / KCN-W



Single / Dual Preset Counters for Addition and Subtraction.

Maximum counting speed: 30cps, 1kcps, 2kcps or 5kcps (selected by digit keys)

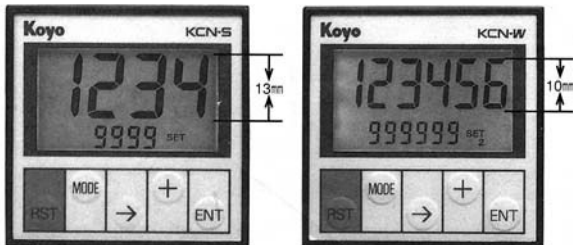
With the DIN standard size of only 48 mm by 48 mm, the full featured counter incorporates an easy to read LCD display.

Integrating the latest technologies, the counter can be used for many purposes as measuring quantities, length and time. Other options include single preset for general purpose models, and dual preset setting for multifunction counters.

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 integrated in all models

Displayed values are backlit to facilitate reading in darkness.

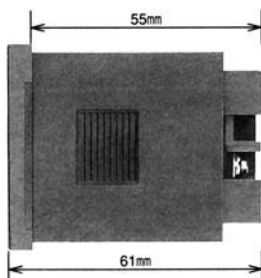


Keypad protection cover

A keypad cover is attached to prevent erroneous operation.

DC power as thin as 55 mm

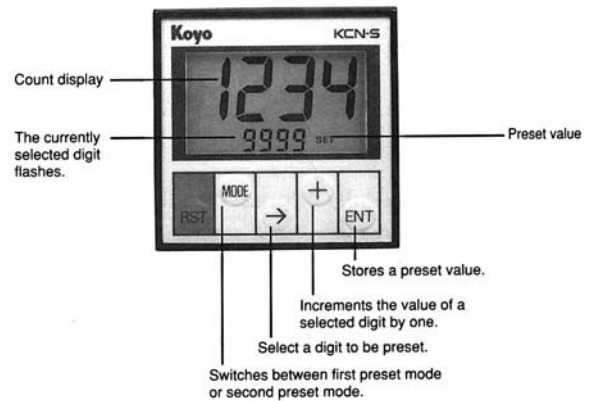
With minimum space requirement, the control board can be installed anywhere.



*AC power is 90 mm thick

Easy operation

Countup values can be set or modified independently from initial settings. Changes can be made easily and quickly on site.



A series of models to meet all your needs

All 16 models include advanced functions such as prescaling and decimal display. These models can be combined appropriate to satisfy your requirements.

Multifunction

A complete series of models provide advanced functions such as dual preset nine output modes, count disable, large capacity sensor power (DC 24V, 60 mA) and AC 100 to 240V user-selectable power source.

Timer option

The KCN-4S general purpose 4-digit counter can be used also as a precise digital timer.

Addition, subtraction or both operations are available.

Twelve error codes quickly report error status.

EEPROM to avoid cell replacement

The counter uses an EEPROM to eliminate the use of cells. The memory can store all counts, preset values and mode settings.

Water proofed front panel

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

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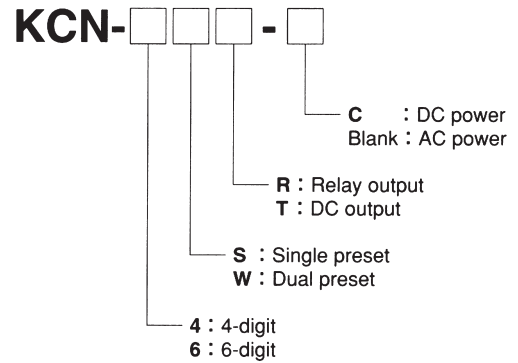
Two Categories of Models

General purpose counters

Single preset, One-shot or Hold output, prescaling and decimal point display.

Source Voltage	Output Type	Sensor Source	4-digit (and timer)	6-digit
DC 24V only	Relay Output	None	KCN-4SR-C	KCN-6SR-C
	DC Output		KCN-4ST-C	KCN-6ST-C
AC 110V or AC 220V	Relay Output	DC24V 15 mA	KCN-4SR	KCN-6SR
	DC Output		KCN-4ST	KCN-6ST

Model Number System



Multifunction

Single or Dual preset setting, nine models including One-shot or Hold and Compare output, prescaling and decimal point display.

Source Voltage	Output Type	Sensor Source	4-digit	6-digit
DC12~24V	Relay Output	None	KCN-4WR-C	KCN-6WR-C
	DC Output		KCN-4WT-C	KCN-6WT-C
AV100V~240V	Relay Output	DC24V 60 mA	KCN-4WR	KCN-6WR
	DC Output		KCN-4WT	KCN-6WT

General Specifications

Item		General Purpose (KCN-S)	Multifunction (KCN-W)
Source Voltage	AC	AC 85~115V, or AC 180~240V	AC 90~264V
	DC	DC 20~28V (Max. 10% p-p ripple)	DC 10~30V (Max. 10% p-p ripple)
Power Consumption	AC	Approx. 5VA	Approx. 5VA
	DC	Approx. 2W	Approx. 2W
Sensor Power	AC	DC 24V (20~28V) 15mA (Max. 10% p-p ripple)	DC 24V (20~28V) 60mA (Max. 10% p-p ripple)
	DC	None	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 (For each of AC input, 0V and relay output interconnection)		
Insulation Resistance	20MΩ or more at DC 500V (AC: For each of AC input, 0V and relay output interconnection)		
Vibration Resistance	Durable for 1 hour along 3 axes at 10 to 55 Hz with 0.5 mm amplitude No error for 1 hour along 3 axes at 10 to 55 Hz with 0.35 mm amplitude		
Shock Resistance	Durable for 11 ms along 3 axes at 490 m/s ² (50 G) No error for 11 ms along 3 axes at 98 m/s ² (10G)		
Noise Resistance *	±1.5 kV between power terminals (square wave pulse with 1 μs width and 1 ns rise time)		
Coating	IP64 for the keypad on the front panel against dust and splash.		
Installation	Flush mounting		
Connection	Terminal block		
Mass	AC	Approx. 220 g	Approx. 150 g
	DC	Approx. 110 g	Approx. 110 g

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



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Performance Specification

Item	General Purpose (KCN-S)	Multifunction (KCN-W)	
Operation	Addition and subtraction		
Setting	Single preset	Single or Dual preset (selected by keys)	
Number of Digits	4 or 6 digits (depending on models)		
Setting Range	4 digits: -999~+9999 6 digits: -999~+999999		
Counting Speed	30cps, 1 kcps, 2 kcps, or 5 kcps (selected by keys) For duty factors, see Counting Timing.		
Input Mode	Addition and / or subtraction or two-phase (selected by keys)		
Input Logic	Positive (voltage) or negative (no voltage) (selected by keys)		
External Reset Input	Minimum pulse width: 5 ms		
Auto Reset	Responded within 0.5 ms (2.5 ms at 5 kcps)		
Manual Reset	Responded within 0.1s		
Power Reset	Power shutdown: 1 s or more Reset duration: 1s or less (until restart)		
Output	NPN open collector or relay contact 1a (depending on models)		
Output Mode	One Shot (momentary output) or Hold (selected by keys)	One Shot (momentary output) or Hold or Compare (selected by keys)	
Output Duration	0~9990 ms (selected by keys in 10 ms increments)		
I/O Response	Maximum counting speed	Open collector output	Relay output
	30cps	14 ms or less	19 ms or less
	1 kcps	1 ms or less	6 ms or less
	2 kcps	0.5 ms or less	5.5 ms or less
	5 kcps *	2.5 ms or less	7.5 ms or less
Decimal Point Display	Any location (selectd by keys)		
Prescaling	4 digits: 0.001~9.999 6 digits: 0.001~99.999		
Count Disable Input	Not available	Responded within 2.5 ms	

* Output response delays only at 5 kcps.

I/O Specifications

Pulse Input	Input Speed	30 cps / 1 kcps / 2 kcps / 5 kcps		
	Input Resistance	Positive: 15 k Ω Negative: 3.3k Ω (1.8k Ω for DC models)		
	Input Voltage	L: 0~3V H: 7~30V		
Reset Input	Input Response	On delay: Max. 5 ms Off delay: Max. 5 ms		
	Input Resistance	Positive: 15 k Ω Negative: 3.3k Ω (1.8k Ω for DC models)		
	Input Voltage	L: 0~3V H: 7~30V		
Count Disable Input	Input Response	On delay: Max. 5 ms Off delay: Max. 5 ms		
	Input Resistance	Positive: 15 k Ω Negative: 3.3k Ω (1.8k Ω for DC models)		
	Input Voltage	L: 0~3V H: 7~30V		
NPN Open Collector Output	Withstand Voltage	Max. 35V		
	Current	Max. 100 mA		
	Residual Voltage	Max. 2V		
Relay Output	Capacity	AC220V 2A (resistance load)	AC220V 0.5A (cos ϕ = 0.4)	DC30V 0.5A (L/R = 7ms)
	Lifetime	Min. 100,000 contacts	Min. 200,000 contacts	Min. 200,000 contacts