

DIGITAL COUNTERS

KCX-□, □M, □D, □DM



KCX-6 counter with I/O Indicators
 KCX-6D counter with Numerical Display

Single Preset Green Counters for Addition

Maximum counting speed:
 1- or 2-digit: 10 cps or 200 cps
 3- or 4-digit: 10 cps or 1 kcps
 5- or 6-digit: 10 cps or 5 kcps

These counters features an easy to read green LED screen to display one-to six-digit values, and operation modes and status. Advanced functions are also integrated, including dust insulation and power backup.

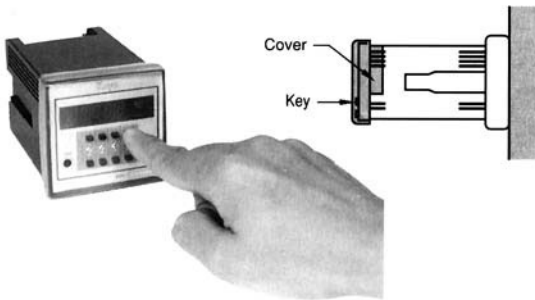
Merits

Green LED for easy reading

Each model features a green LED display to facilitate reading. Numerical values are displayed with the height of 8 mm.

Dust prevention cover

On all models, a protective cover is attached to the front panel. The keys and buttons can be operated through this cover.



Minimum space requirement

In compliance with the DIN standard, all models are sized 72 mm (height)~72 mm (width)~103.5 mm (depth).

Memory backup at power shutdown

Nickel cadmium battery is supported for minimum maintenance work. During power shutdown, current consumption is kept as low as several microamperes allowing memory backup for up to 2,000 hours. Power failure is detected by an integrated circuit to activate emergency I/O gates. Input status before shutdown is stored so the counter can resume operation upon recovery. Any pulse input is ignored during power shutdown.

Built-in sensor power

A DC12V, 50 mA power source is included in all counters to allow direct connection to a proximity switch, photoelectric sensor or rotary encoder.

Variable output duration

On the front panel, you can control the duration of One shot (Type A) output. Using a dial, the output time can be adjusted between 50 ms and 1,000 ms. You can extend it to 10 seconds by adding a capacitor.

Type A and Type B output options

With a small change to the connection, the output mode can be switched between One shot and Hold.

Six counter modes

Any of the six combinations can be selected as described on page 103.

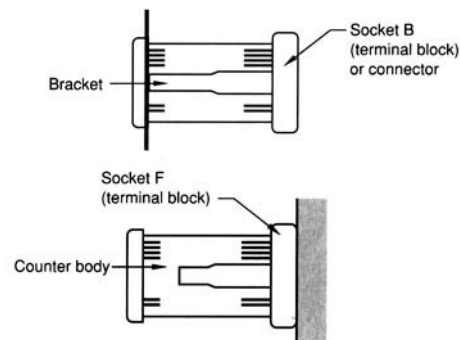
Wide range of source voltage

You can choose source voltage of either AC90 to 132V, or AC180 to 264V.

Option to disable count input

Mounting

The counter can be mounted onto the wall surface in either way, wall surface mounting or flush mounting. Use mounting bracket for the flush mounting and use terminal block (socket F) for wall surface mounting.



DIGITAL COUNTERS

Specifications

| Model Number | I/O Indicators | Standard | KCX-1 | KCX-2 | KCX-3 | KCX-4 | - | - |
|--|---|--|--------------|------------------------------------|---------------|-----------------------------------|----------------|---------|
| | Numerical Display | Standard | KCX-1D | KCX-2D | KCX-3D | KCX-4D | KCX-5D | KCX-6D |
| Number of Digits | | Backup Memory | - | KCX-2DM | KCX-3DM | KCX-4DM | KCX-5DM | KCX-6DM |
| | Operation | Type A: One shot output with auto reset Type B: Hold output | | | | | | |
| Count Input | | Contact input | Static input | Contact input | Static input | Contact input | Static input | |
| | Maximum count speed | 10 cps | 200 cps | 10 cps | 1 cps | 10 cps | 5 cps | |
| | Minimum pulse width | 50 ms | 2.5 ms | 50 ms | 0.5 ms | 50 ms | 0.1 ms | |
| | Input resistance | 6k Ω | 12k Ω | 6k Ω | 12k Ω | 6k Ω | 12k Ω | |
| | Input voltage | "L" 0~2V / "H" 6~30V | | | | | | |
| External Reset | Response time | On delay: 20 ms Off delay: 4 ms | | On delay: 10 ms Off delay: 2 ms | | On delay: 5 ms Off delay: 1 ms | | |
| | Input resistance | 6k Ω | | | | | | |
| | Input voltage | "L" 0~2V / "H" 6~30V | | | | | | |
| Auto Reset | Response time | Max. 5 ms | | Max. 1 ms | | Max. 0.2 ms | | |
| | Power shutdown | Min. 0.2s | | | | | | |
| | Reset duration | Min. 0.2s | | | | | | |
| | Output resistance | 1.2k Ω (at no load voltage of 12V) | | | | | | |
| DC Output*2 | Output current | Source: 2.5mA Sink: 8.0mA | | | | | | |
| | Withstand voltage | 45V | | | | | | |
| | Output duration | Type A: Variable Type B: Held | | | | | | |
| | Capacity | AC250V 2A | | | | | | |
| Relay Output | Circuit | One transfer circuit | | | | | | |
| | Output duration | Type A: Variable Type B: Held | | | | | | |
| | Electrical durability | Min. 1,000,000 contacts at AC250V resistance load) | | | | | | |
| | Mechanical durability | Min. 10,000,000 contacts | | | | | | |
| | I/O Response*3 | | 10 cps | 200cps | 10 cps | 1kcps | 10 cps | 5kcps |
| Voltage output | | Approx. 10ms | Approx. 4ms | Approx. 10ms | Approx. 0.8ms | Approx. 10ms | Approx. 0.15ms | |
| Contact output | | Approx. 20ms | Approx. 14ms | Approx. 20ms | Approx. 10ms | Approx. 20ms | Approx. 10ms | |
| Memory Backup at Power Shutdown (Only Models with Battery) | Time for charging*4 | 50 hours | | | | | | |
| | Backup duration | Approx. 2,000 hours at 25°C or 800 hours at 45°C | | | | | | |
| | Response of emergency input gate*5 | 20~200 ms (70 ms typ) | | | | | | |
| | Response of input gate upon recovery*6 | 50~500 ms (120 ms typ) | | | | | | |
| | Sensor Power | DC+12V \pm 2V 50mA Max. 10% (rms) ripple | | | | | | |
| Withstand Voltage | AC 2kV for one minute (For each of AC power, pin E and relay contact interconnections) | | | | | | | |
| Insulation Resistance | DC 500V Min. 20m Ω | | | | | | | |
| Vibration Resistance | (In compliance with JIC C0911) 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 | | | | | | | |
| Source Voltage | AC 90~132V, or Ac 180~264V (50/60Hz) | | | | | | | |
| Power Consumption | With numerical display: Approx. 5VA With I/O indicators: Approx. 3VA | | | | | | | |
| Ambient Temperature (during operation) | During power supply: 0~+40°C (-10~+50°C with no risk of destroyed battery) During memory backup: -10~+50°C | | | | | | | |

DIGITAL COUNTERS

KCX-□, □W, □WM



KCX-5W, KCX-6WM

Dual Preset Green Counters for Addition

Maximum counting speed: 3- or 4-digit: 10 cps or 2 kcps
5- or 6-digit: 10 cps or 5 kcps

These counters feature an easy to see green LED screen to display three to six digit counts and dual preset values. Other features include dust insulation and power backup.

Merits

Green LED for easy reading

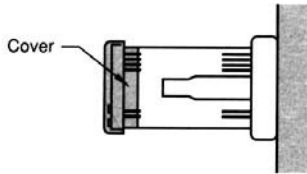
Each model features a green LED display to facilitate reading. Numerical values are displayed with the height of 8 mm.

Minimum space requirement

In compliance with the DIN standard, all models are sized 72 mm (height)~72 mm (width)~103.5 mm (depth).

Dust prevention cover

On all models, a protective cover is attached to the front panel. The keys and buttons can be operated through this cover.



Option to disable count input

Pulse input and count can be disabled by signal input to the count disable terminal.

Memory backup at power shutdown

The integrated nickel cadmium battery allows memory backup for up to 5,000 hours.

Wide range of source voltage

The counter accepts voltage of DC 4.5V to 30V from a source ranging from 5V to 24V. You can choose source of either AC 90 to 132V, or AC 180 to 264V.

Variable output duration

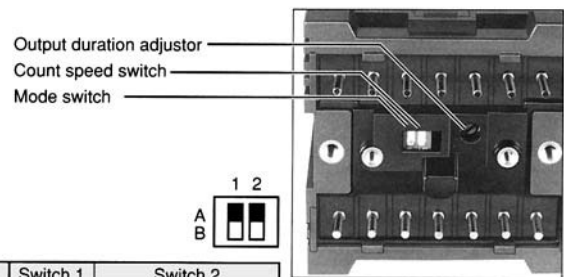
On the rear panel, you can control the duration of One shot (Type A) output. Using a dial, the output time can be adjusted between 50 ms and 1,000 ms.

One shot output and Hold output options

Using the selector on the rear panel, output type can be selected between One shot (Type A) output and Hold (Type B) output.

Slow count and Fast count options

Using the selector on the rear panel, count speed can be switched between 10cps and 2kcps (5kcps for 5- or 6-digit counter).



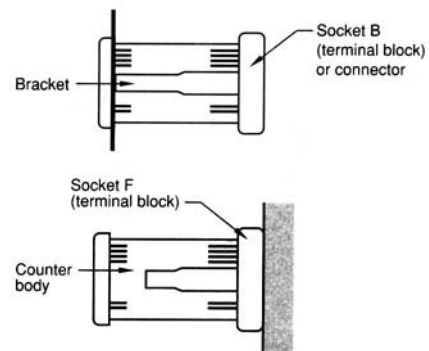
| | Switch 1 | Switch 2 |
|---|------------------|--------------------|
| | Mode | Count speed |
| A | Type A operation | 2kcps (3-4W) 4W |
| B | Type B operation | 5kcps (5-6W) 6W |
| | | 10cps |

Integrated sensor power

DC12V, 50mA power source is included in all counters to allow direct connection to a proximity switch, photoelectric sensor or rotary encoder.

Mounting

The counter can be mounted onto the wall surface in either way, wall surface mounting or flush mounting. Use mounting bracket for the flush mounting and use terminal block (socket F) for wall surface mounting.



DIGITAL COUNTERS

Specifications

| Model Number | Standard Models | KCX-3W | KCX-4W | KCX-5W | KCX-6W |
|--|--|--|----------|--|----------|
| | With Backup Memory | - | KCX-4WM | - | KCX-6WM |
| Number of Digits | 3 digits | | 4 digits | 5 digits | 6 digits |
| Operation | First preset: Type B (Hold output) only | | | | |
| | Second preset: Type A (One shot output) or | | | | |
| | Type B (Hold output) selected by switch on rear panel | | | | |
| Count Input | Maximum count speed | 10cps, 2kcps (selected by switch) | | 10cps, 5kcps (selected by switch) | |
| | Minimum pulse width | 10cps: 50ms, 2kcps: 0.25ms | | 10cps: 50ms, 5kcps: 0.1ms | |
| | Input resistance | 6k Ω | | | |
| | Input voltage | "L" 0~2V, "H" 4.5~30V | | | |
| Count Disable Input | Response time | On delay: Max. 0.25ms Off delay: Max. 0.25ms | | On delay: Max. 0.1ms Off delay: Max. 0.1ms | |
| | Input resistance | 6k Ω | | | |
| | Input voltage | "L" 0~2V, "H" 4.5~30V | | | |
| External Reset | Response time | On delay: Max. 10ms Off delay: Max. 2ms | | On delay: Max. 4ms Off delay: Max. 0.8ms | |
| | Input resistance | 6k Ω | | | |
| | Input voltage | "L" 0~2V, "H" 4.5~30V | | | |
| Auto Reset | Response time | Max. 0.5ms | | Max. 0.2ms | |
| Power-on Reset (KCX-3~6W) | Power shutdown | Min. 200ms | | | |
| | Reset duration | Max. 200ms | | | |
| DC Output | Output resistance | 1.2k Ω (at no load voltage of 12V) | | | |
| | Output current | Source: 2.5mA Sink: 8mA | | | |
| | Withstand voltage | 45V | | | |
| | Output duration | 50ms~1s | | | |
| Relay Output | Capacity | AC250V 2A | | | |
| | Circuit | One make contact | | | |
| | Output duration | 50ms~1s | | | |
| | Electrical durability | Min. 10,000,000 contacts | | | |
| | Mechanical durability | Min. 10,000,000 contacts (resistance load) | | | |
| I/O Response | Voltage output | 10cps: 10ms, 2kcps: 0.4ms | | 10cps: 10ms, 5kcps: 0.15ms | |
| | Contact output | 10cps: 20ms, 2kcps: 10ms | | 10cps: 20ms, 5kcps: 10ms | |
| Memory Backup at Power Shutdown (Only Models with Battery) | Time for charging | 50h | | | |
| | Backup duration | 5000h (25°C), 2000h(40°C) | | | |
| | Response of emergency input gate | Max. 200 ms | | | |
| | Response of input gate upon recovery | Max. 200 ms | | | |
| Sensor Power | DC+12V 50mA | | | | |
| Source Voltage | AC 90~132V, or AC 180~264V (50/60 Hz) Approx. 5.5VA | | | | |
| Ambient Temperature | During power supply : 0~+40°C (-10~+50°C with no risk of destroyed battery) During memory backup: -10~+50°C | | | | |
| Storage Temperature | KCX-3~6W: -20~+55°C | | | | |
| | KCX3~6WM: -20~50°C (-20~+70°C during transportation of less than one week) | | | | |
| Ambient/Storage Humidity | 35~85%RH (with no dewing) | | | | |
| Weight | 0.5kg | | | | |