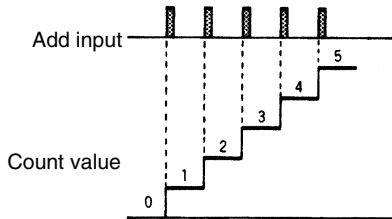


Counters

# Technical Information

**Addition-type (Up/Incrementing) counter**

A counter having an add input and thus capable of counting in an ascending order.



**Ambient temperature (operating)**

The ambient temperature at which a device can be used in the continuously operated state.

**Ambient temperature (storage)**

The ambient temperature at which a device without power applied, may be stored safely.

**Automatic reset**

To automatically return the counter to the „0“ state after the lapse of a given time.

**Counting capacity**

The maximum value up to which the counter can count. The counting capacity is usually expressed in decimal digits.

**Count-up**

The point in time or the state in which the output section of the counter operates when the number of counts reaches the preset value.

**Dielectric strength**

The maximum voltage a dielectric can withstand without being damaged.

**Electromagnetic reset**

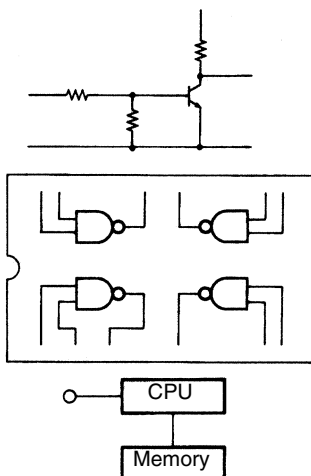
To electromagnetically reset the counter by applying a reset signal.

**Electromagnetic counter**

A counter which performs counting by energizing or de-energizing the built-in electromagnet.

**Electronic counter**

A counter which mainly consists of transistors, ICs, micro-computers, etc.



**Electrical life expectancy**

The life expectancy of a counter when the control output is operated to switch a specified voltage/current load connected to the control output.

**External reset**

To reset the counter by a required signal applied from an external source to the reset input signal terminals of the counter.

**Holding output**

The control output of the counter without a self-resetting function. The output is continuously held as long as the counter is not reset by the power, external, manual, or electromagnetic reset.

**Humidity**

The ambient humidity at which a device can be used for continuous operation.

**Insulation resistance**

The resistance offered by an insulating material to the flow of current resulting from a DC voltage.

**Life expectancy (mechanical)**

The life expectancy of a counter when the control output of the counter is operated without a load.

**Manual reset**

To mechanically reset the counter by manual means.

**Maximum counting speed**

The maximum counting speed at which the display or output section of the counter operates accurately without miscounting. The maximum counting speed is expressed in units of counts per second (cps).

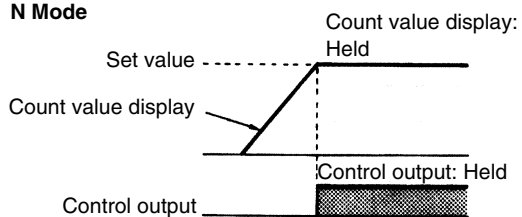
**Memory protective function during power failure**

The function by which the number of counts at the time of a power failure is memorized until power is again applied to the counter.

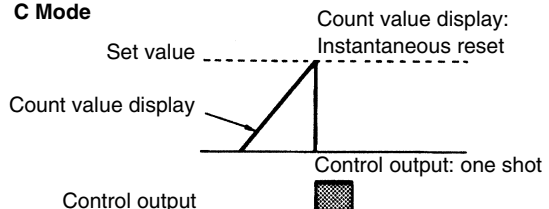
**Operating mode**

Control output patterns or display patterns that appear when counted up to the value set by the preset counter.

**N Mode**



**C Mode**



**Operating voltage range**

The allowable fluctuation range of the voltage required to operate a device (e.g. control and signal voltage).

**One-shot output**

A counter control output of fixed duration which can be reset by a self-reset.

**ON-OFF ratio**

The ratio of the ON signal time of a given input signal to the OFF signal time of the same input signal. The maximum counting speed of each counter is determined by a counting input signal with an ON-OFF ratio of 1:1.

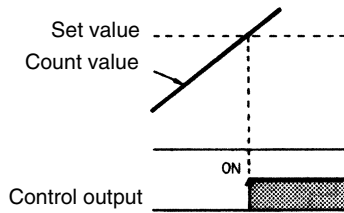
**Power consumption**

The maximum wattage used by a device within its operating range at the specified temperature and humidity.

Depending on the internal power circuit system of the model, both apparent power and active power are indicated for the AC power supply. Refer to the apparent power when designing a transformer.

**Preset solid-state counter**

A counter whose control output operates when it counts up to the set value and which employs a semiconductor circuit for the counting element.



**Readout counter**

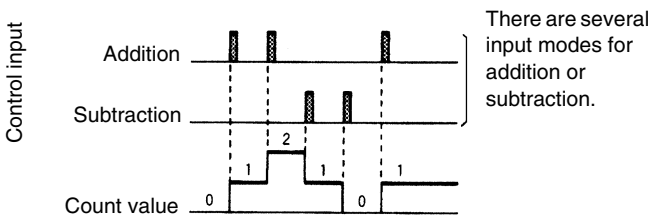
A counter in which an output signal is normally generated corresponding to the count value.

**Reset**

To restore the counting, display and output sections of the counter, to their initial states.

**Reversible-type counter**

A counter with the capability of counting in an ascending or descending order, depending on the up-down inputs. Also called an up-down counter.



**Power reset**

To reset the counter by cutting off the operating supply voltage.

**Self-reset**

To reset the counter by a signal generated by internal circuitry.

**Shock resistance (destruction)**

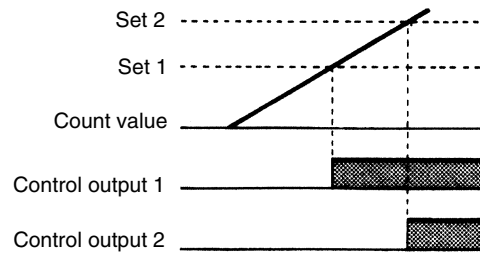
The threshold of shock beyond which an abnormality is expected to occur in the appearance or function of a device.

**Shock resistance (malfunction)**

The threshold of shock beyond which a device can be longer operate properly according to prescribed ratings

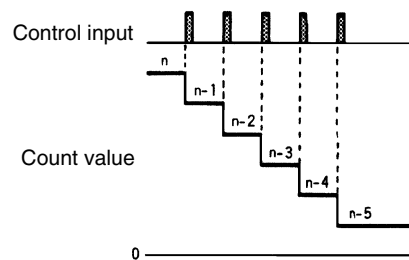
**Stage**

Number of preset values that correspond with the number of control outputs.



**Subtraction-type (Down/Decrementing) counter**

A counter with a subtract input and thus capable of counting in descending order.



**Totalizing counter**

A counter which indicates the total value of the counting inputs and is not provided with a control output.

**Vibration resistance (destruction)**

The threshold of vibration beyond which an abnormality is expected to occur in the appearance or function of a device.

**Vibration resistance (malfunction)**

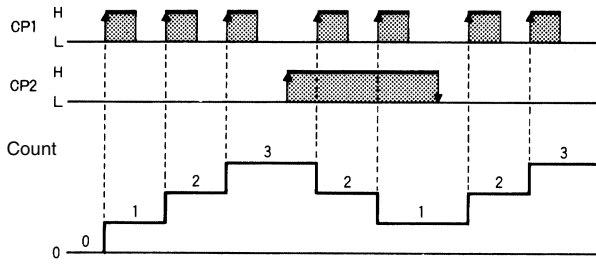
The threshold of shock beyond which a device can be longer operate properly by satisfying the prescribed ratings.

**Counting Function**

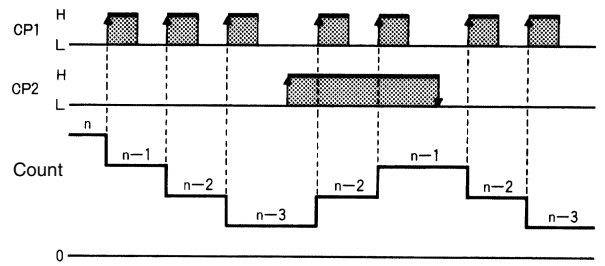
Refer to the following timing charts for the input modes of the incremental, decrementing, and up/down (or reversible-type) Counters.

**Up/Down**

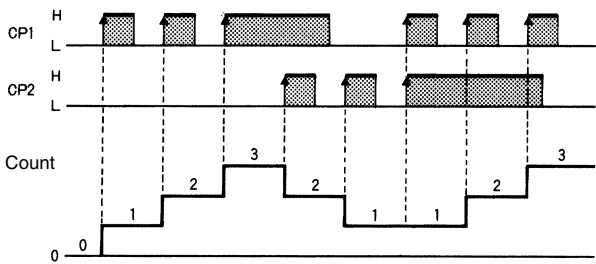
**Up/Down A Control Input**



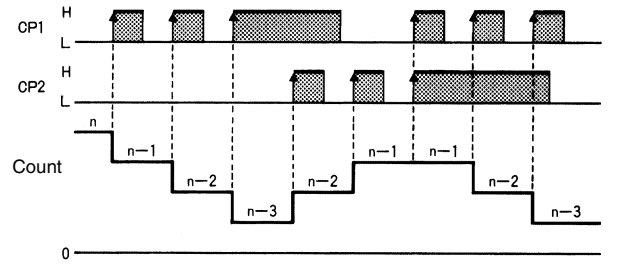
**Up/Down D Control Input**



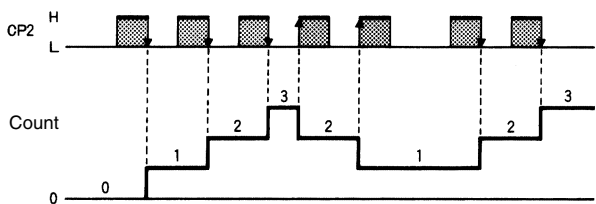
**Up/Down B Individual Input**



**Up/Down E Individual Input**



**Up/Down C Phase-difference Input**



**Up/Down F Phase-difference Input**

