

E10 SERIES

ELECTRONIC PRESET COUNTER

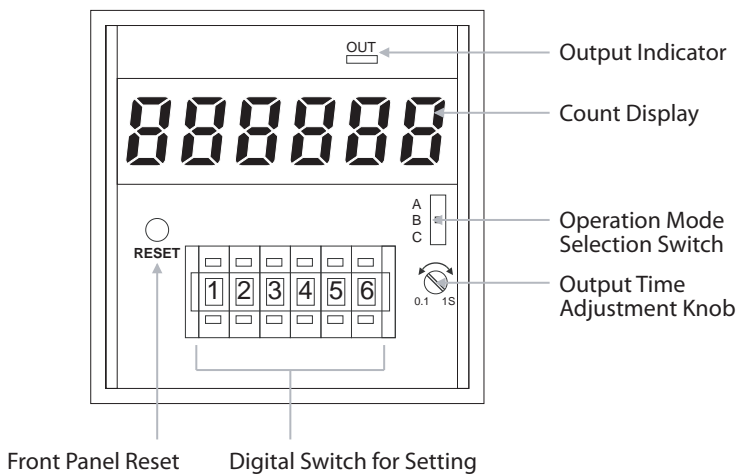
- DIN 72 x 72
- LARGE LED DISPLAY
- 6 DIGIT MODEL
- 1 LEVEL
- HIGH COUNT SPEED
- ADD / SUBTR COUNTER



MODELS

MODEL	NO. OF DIGITS	PRESET LEVEL	MEMORY	FRONT RESET
E10-166M	6	1	○	—
E10-166MR				○

FRONT PANEL(E10-166MR)



SPECIFICATIONS

Display	6 Digits 7-Segment Red LED 10.16 mm (H) x 5.54 mm (W)
Power Source	100/110 VAC or 200/220 VAC, 50/60 Hz
Power Consumption	4.3 VA
Preset Level	1 Level
Setting Range	0 - 999999 ※
Input Mode	Open Collector Input L : 0 to 2 V (sink current 7mA max.) Contact Input: Relay, Microswitch, etc. (sink current 7mA max.)
Count Mode	90° Quadrature Input / Individual Add/Subtract Input (simultaneous input of add and subtract is not possible)
Count Speed	Open Collector Input: 10 kHz / Contact Input: 30 Hz
Pulse Width	Open Collector Input: 50 μs / Contact Input: 16.6 ms
Duty	1 : 1
Output	Relay Type 1C, 250 VAC, 2A (125VA), 220 VDC 2A (60W) cosφ = 1
Output Display	Red LED (ON when output is actuated)
Output Time	0.1 to 1 second per shot (adjustable via front panel knob) or latch output
Reset Input	Contact (100 ms min.) Open Collector (sink current 10mA max.)
Reset Mode	Remote Reset, Auto-Reset, Front Panel Reset (E10-166MR)
Operation Mode	Auto-reset (display resets when preset value is reached) Overrun (counting continues even after preset value is reached)
Memory	EEPROM Data Retention: approximately 20 years Memory Frequency: 100,000 times max.
Power Source for Sensor	12 VDC, 60mA max.
Operating Temperature	-10°C to +50°C (should not be frozen)
Operating Humidity	35 to 85 % RH (non-condensing)
Hi-pot Test	1500 VAC (1 minute)
Insulation Resistance	100 MΩ min. (500 VDC Megger) (on Power leads and between non-charged metal parts)
Noise Immunity	Square wave noise from Noise Simulator ±2.0 kV (PowerTerminals), ±500 V(Input Terminals)
Vibration Immunity	Malfunction: 10 to 55 Hz, double amplitude 0.5mm Destruction: 16.7 Hz, double amplitude 4mm
Shock Immunity	Malfunction: 100 m/s ² (10G) Destruction: 300 m/s ² (30G)
Weight	550g

※ When set to 0, counter will count down from displayed value to 0, when output signal occurs.

WIRING

TERMINAL WIRING	<p>Diagram showing terminal connections for Sensor, External Reset, Input Selection, Relay Output, and Speed Selection.</p>
INPUT	<p>(1) 90° Quadrature Input (from rotary encoder, etc.)</p> <p>(2) Individual Add/Subtract Input (Open Collector Input)</p> <p>(3) Individual Add/Subtract Input (Contact Input (relay, microswitch, push button switch, etc.))</p>
OUTPUT	<p>(1) Contact Output (Relay Output)</p>
EXTERNAL RESET	<p>Can be reset when ⑤ & ⑥ are shorted (via microswitch, open collector transistor, etc.)</p>
COUNT SPEED SELECTION	<p>⑫ ⑬ disconnected 10 kHz (Open Collector Input)</p> <p>⑫ ⑬ shorted 30 Hz (Contact Input)</p>
POWER SOURCE	<p>100/110 VAC 0 VAC</p> <p>16 17</p> <p>In case of 100/110 VAC, ⑮ & ⑰ should be used.</p> <p>200/220 VAC 0 VAC</p> <p>15 17</p> <p>In case of 200/220 VAC, ⑮ & ⑰ should be used.</p>

OPERATION MODE SELECTION

A	Auto-reset, one shot output
B	Overrun, one shot output
C	Overrun, latch output

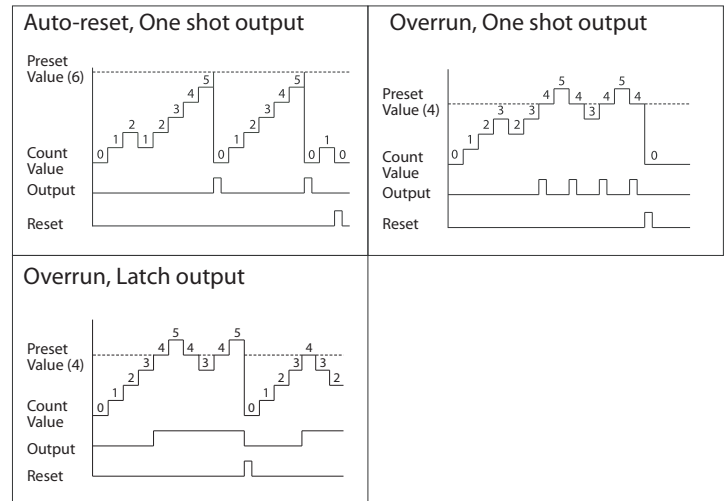
Prior to operation, please select both display mode and output mode by slide switch on front panel.

ADJUSTMENT OF OUTPUT TIME



When operation mode A or B is selected, please adjust output time from 0.1 to 1 second by turning the knob below the slide switch.

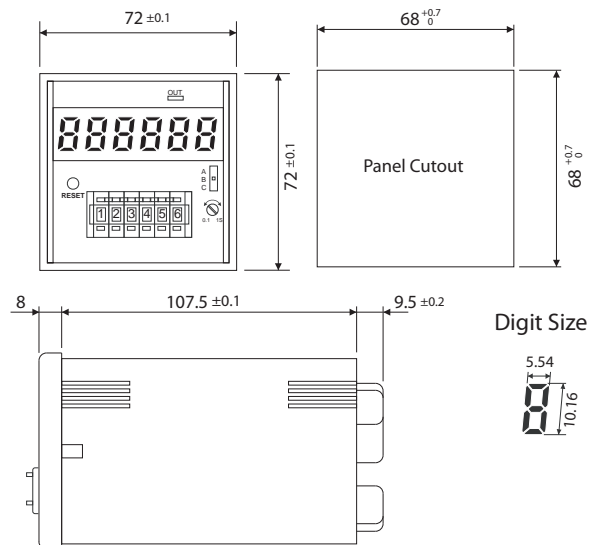
OPERATION EXAMPLE



CAUTION

- The counter will not accept count or reset signals during the first 100 ms after power-up.
- In case Individual Add/Subtract Input is selected, additive and subtractive signals cannot be input simultaneously.
- Shielded wires should be used for input/output leads.
- Input/output leads should be separated from power leads as much as possible.
- Wires for short circuit (jumpers) should be as short as possible.
- When noise is observed on input or power leads, noise suppressor or power source noise filter should be used.

DIMENSIONS



DUSTPROOF COVER (OPTION)

In case the counter will be used in a bad environmental conditions (e.g. dust / splash), a dustproof cover should be used.
If the cover is to be used, the panel cutout should be 70 x 70 mm

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