LINE SEIKI

MDR SERIES

BIDIRECTIONAL PRESET COUNTER with BCD OUTPUT

MDR-244MB

MDR-166MB

- DIN 72X144 SIZE
- BRIGHT LARGE LED DISPLAY (4 or 6 DIGITS)
- 1 or 2 PRESET LEVELS
- BCD OUTPUT
- EASY PRESETTING BY THUMBWHEEL SWITCH
- WITH MEMORY

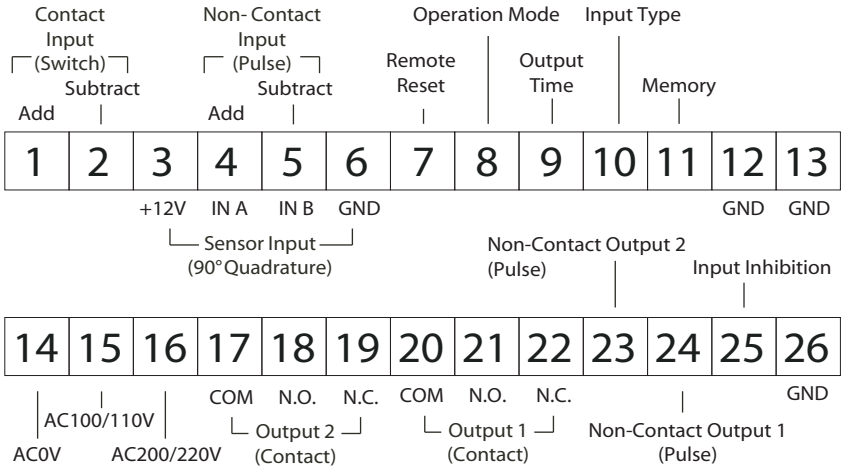
MODEL SELECTION

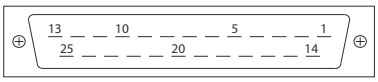
Models	Digits	Preset Level	Preset Digits	Preset Range	Memory	Option	Weight
MDR - 144MB	4	1	4	1 - 9999	○	BCD OUTPUT	950 g
MDR - 166MB	6		6	1 - 999999			
MDR - 244MB	4	2	4	1 - 9999			1050 g
MDR - 266MB	6		6	1 - 999999			

SPECIFICATIONS

Models	MDR - 144MB	MDR - 166MB	MDR - 244MB	MDR - 266MB
Display	Red LED, 14.22 x 8.13mm (Zero Supress)			
Input Method / Signal	Contact Input : Relay, Microswitch Non-Contact Input : L: 0 - 1V ; H: +4.5 - 27V			
Count Mode	90°Quadrature (directional) / Add/Subtract			
Count Speed	Contact Input : 20 Hz max. / Non-Contact Input : 5000 Hz max.			
Pulse Width	Contact Input : 25 msec min. / Non-Contact Input : 100 μsec min.			
Make (Duty)	1:1			
Output Type	Contact output : Relay Type 1C (AC230V, 2.5A max. load) * for each output Non-contact output : NPN open collector (DC45V, 100mA maximum)			
Output Display	Turns ON during output time			
Output Time	One-shot mode : 0.1 - 3sec (adjustable) Overrun mode : Infinite			
Reset	Remote reset (100msec min.) Auto reset : One-shot reset (Output relay : 0.1 - 3sec reset)			
Memory	E^2PROM (10 yrs. retention, 10,000 times)			
Power Source for Sensor	DC12V 100mA maximum			
Input Impedance	5kΩ			
Power Source	AC100/110V or AC200/220V ±10%, 50/60 Hz			
Power Consumption	Approximately 5.5VA			
Operating Temperature	0 - 40°C (Non-freezing)			
Operating Humidity	45 - 85%RH (Non-condensing)			
Hi-pot Test	AC1500V (1 minute)			
Dielectric Test	20MΩ min. (DC500V megger)			
Connection	M3 Terminal Screw / BCD Output Terminal: D-SUB25 Pin Connector			

WIRING / REAR TERMINALS





BCD Output Terminals

BCD / Digits	"1"	"2"	"4"	"8"
1	1	2	3	4
2	5	6	7	8
3	9	10	11	12
4	14	15	16	17
5	18	19	20	21
6	22	23	24	25
GND	13			

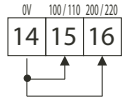
NOTE:

※ For 1 level preset models (MDR-144MB and MDR-166MB), refer to Output 2 in the diagram as the main output.

※ Both terminals 12 and 13 are GND. The terminal 13 can be used in replacement of terminal 12 as described in the connection diagrams below.

CONNECTION

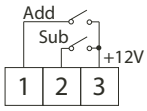
Power Supply



Power supply can be selected between AC100/110V or AC200/220V.
For AC100/110V, use terminals 14 and 15.
For AC200/220V, use terminals 14 and 16.

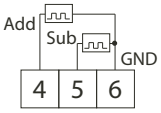
Input

Contact Input



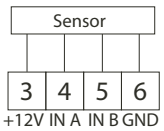
For Contact Input (Relay, Microswitch, etc.):
For Add count : Use terminals 1 and 3.
For Subtract count : Use terminals 2 and 3.

Non-Contact Input (Pulse)



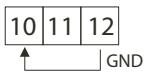
For Non-Contact (Pulse) Input:
For Add count : Use Terminal 4 for (+) signal and 6 for (-) signal.
For Subtract count : Use Terminal 5 for (+) signal and 6 for (-) signal.

Non-Contact Input (Sensor)



For Non-Contact (Sensor) Input, connect the sensor's:
DC12V Power Supply : Terminal 3
Signal A (IN A) : Terminal 4
Signal B (IN B) : Terminal 5
GND : Terminal 6.

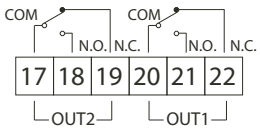
Input Type



The input type can be selected as follows:
For Add/Subtract Input : no connection between terminals 10 & 12.
For 90° Quadrature Input : connect terminals 10 and 12.

Output

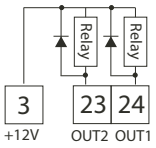
Contact Output



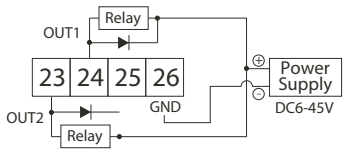
Use the internal Type 1C relay (AC230V 2.5A).
For 1 Level Preset model, use OUT2 relay.

Non-Contact Output (Open Collector)

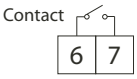
If internal power supply is used.



If external power supply is used.

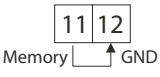


Remote Reset



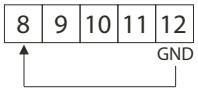
Resetting of the counter can be done remotely when terminals 6 and 7 are shorted with a Relay, Microswitch, etc.

Memory



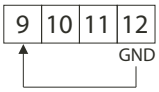
To enable the memory feature, make sure to connect terminals 11 and 12.

Output Mode



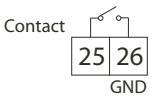
Output mode can be selected as follows:
One-shot output mode : no connections between terminal 8 and 12.
Overrun output mode : connect terminals 8 and 12.

Output Time



Output Time can be selected as follows:
0.1~3sec. : no connections between terminals 9 and 12.
Infinite : connect terminals 9 and 12.

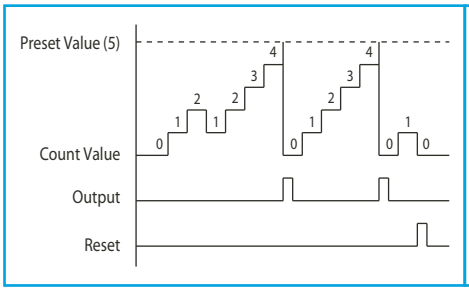
Input Inhibition



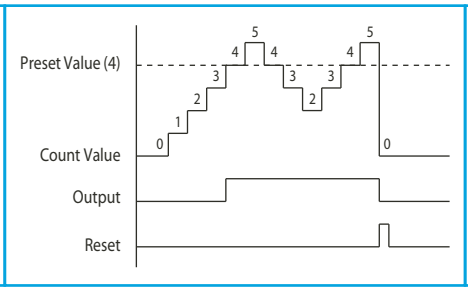
Input signals can be inhibited by shorting terminals 25 and 26 with a Relay, Microswitch, etc.

OPERATING MODE

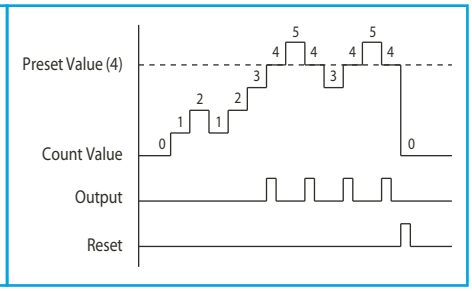
1 Level Preset, Auto-Reset



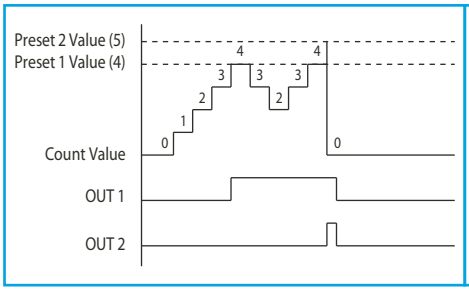
1 Level Preset, Overrun Output Mode



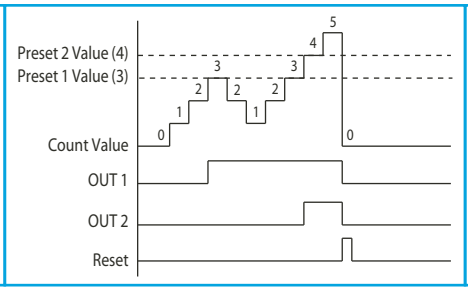
1 Level Preset, Overrun, One-shot output



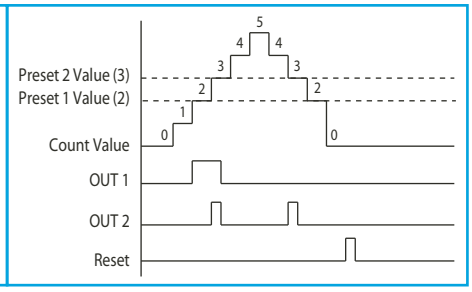
2 Level Preset, Auto-Reset



2 Level Preset, Overrun Output Mode



2 Level Preset, Overrun Output Mode

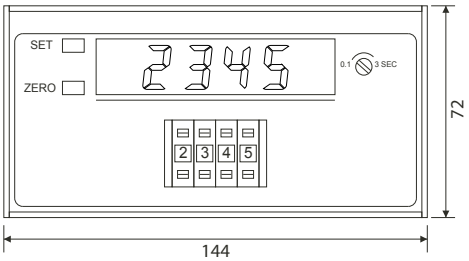


CAUTION

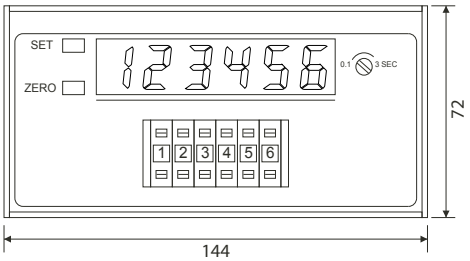
1. Do not feed a voltage signal into the Contact Input and Remote Reset terminals. This may cause damage to the internal circuit of the unit.
2. Contact and Non-contact input cannot be used simultaneously. Please choose only one method of input.
3. During power failure, LED display will go off. At this time, the counter cannot detect input or reset signals even if signals are received.
4. Make sure to short terminals 11 and 12 to enable the memory function. When the counter will be shut down for a long period of time, disconnect terminals 11 & 12 to prevent discharge of internal battery. The internal battery is charged when power is supplied to the counter.
5. Simultaneous input of signals for the Add input and Subtract input is not possible.
6. Use shielded leadwires for the Input terminal and Reset terminal. Also, make the lines from the power source as far as possible from the lines of the Input and Reset lines.

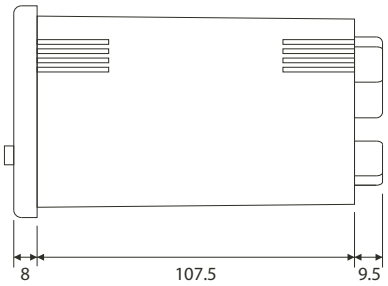
DIMENSIONS

MDR-144MB

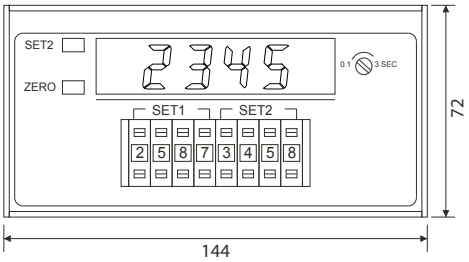


MDR-166MB

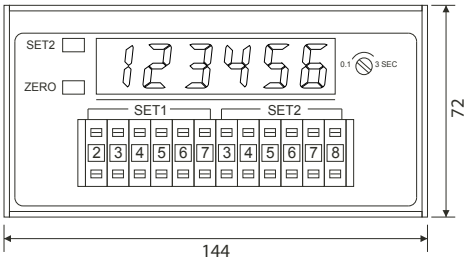


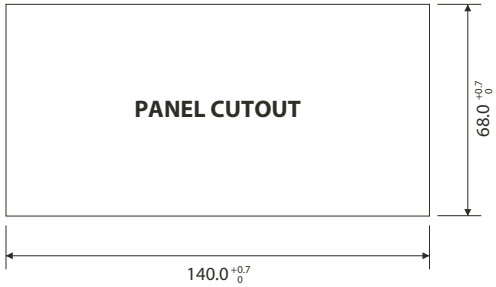


MDR-244MB



MDR-266MB





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*Subject to change without prior notice.

LINE SEIKI CO.,LTD.
Address : 37-7, Chuo-Cho, 2-Chome, Meguro-ku
Tokyo 152-0001 JAPAN
Contacts : Tel: +81-3-3716-5151 Fax: +81-3-3710-4552
E-mail: webtrade@line.co.jp
URL : http://www.lineseiki.com