

(24VDC +10%)

Leakage current

100 µ A max



· Input Circuit (note.1)





Display section and operation section Display section Control output indicator Control output indicator (LCD) (LED : red) Ч Input / Output inhibit indicator 7 Count value (6-digit, 10-mm character, zero-suppressed) Remonitor input indicator INEE Unit indication (Galy with time count function) EGV

Output Circuit

Reset input indicator

Counter No. indicator

Preset value (6-digit, 7-mm character, zero-suppressed) Set mode indication No indication

SET

SET

SET

: RUN mode

: forecast value

: pre-forecast value

+ : machine stoppage value



· Front panel





D Setting and changing the settings (Three-step setting type) [1] How to set or change the forecast value



- ① Press MODE key to enter forecast value setting mode
 - The counter number displayed in RUN mode is displayed.
- ② Press COUNTER No. key (or input counter no. select) to select counter number to which setting or

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- change is applied. With each key press-down, the counter number increments as ;
 - $(\rightarrow 1 \rightarrow 2 \rightarrow \dots \rightarrow 8 \rightarrow 9 \rightarrow)$

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- ③Press UP key (1 to 6) to change numeral of each individual digit.
 If a key is pressed, the corresponding digit start:
 - to flash

 - Preset value is zero-suppressed.
 With each key press-down, the numeral incre ments as ; $rac{}{\sim} 0 \rightarrow 1 \rightarrow 2 \rightarrow \cdots \rightarrow 8 \rightarrow 9 \rightarrow 0$



Set machine stoppage value as +99999 (+9999.9h) to the desired counter : machine stoppage signal will not be output from the the counter.

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Set forecast value as 0 (0.0h) to the desired counter : the counter function will be invalid.

• By setting forecast value as 0 (0.0h) , pre-forecast value and machine stoppage value are automatically set to 0 (0.0h).



Set forecast value as 999999 (99999.9h) to the desired counter : the counter will function as totalizing counter or totalizing time counter.

- Machine stoppage signal will not be output from the counter.
- With totalizing counter function, the forecast output of the counter will give 20ms one-shot output as carry signal when count value changes as $999999 \rightarrow 0$.

E Resetting of count value [1]Reset per counter unit



① Press COUNTER No. key (or input counter no.

selection) to select the desired counter number.

· Count value can be reset in any mode.



②Press RESET key (or input reset) and count value of the specified counter returns to 0.

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0

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1 Press COUNTER No. key and RESET key simultaneously for 3 seconds and count value of all counters return to 0.

· Simultaneous input of counter no. select input and reset input for 3 seconds will also batch reset the count values.

10 Remonitoring of count value Count value which was reset intentionally or by mistake can be remonitored. (ex. Recover previously reset count value "23456" of counter no.3)

tored.

2 All clear

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[2] Forecast output



①Turn on remonitor input.

- Once reset count value is displayed.
- · The display change does not influence internal counting operation.
- * The counter no. display does not change.

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D Confirmation of count value (in RUN mode)



Press COUNTER No. key (or input counter no. selection) to confirm count value of each counter while in RUN mode.

• With each key press-down (or input turn-on), the numeral increments as; $(-1 \rightarrow 2 \rightarrow \cdots \rightarrow 8 \rightarrow 9)$

However, inhibited counters (with forecast value set to 0) are skipped.

Pre-forecast output, forecast output, machine stoppage output will be displayed as follows Cutput indication [1] Pre-forecast indication



The number of the counter which has reached the preforecast value is displayed.

· Pre-forecast value is given only as indication. There will be no actual output.

নি 70070 11 Î 2 1 Í _0 0

The number of the counter which has reached the forecast value is displayed. The red indicator lights at the upper area of the display and output is turned ON.

[3] Machine stoppage output

matically after all clear.

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counters to 0.



Press **RESET** key and **SET** key simultaneously

for 3 seconds to reset count value, pre-forecast value,

forecast value, and machine stoppage value of all

• The displayed counter number returns to "1" auto-

The number of the counter which has reached the machine stoppage value flashes. The background color of the display alternates between red and green.

Rev GSU The following procedure is only necessary when re-2 Press COUNTER No. key (or input counter no. selection) to select the desired counter to be remoni-

covering of the count value is not required.

3 Press RESET key (or input reset) and remonitored value flashes for 3 times and the count value

 The displayed value will not change from the pre-viously reset value after flashing has ceased but the internal counting operation is performed start-ing from the recovered value. (Turn off remonitor input to return to the normal op-

eration.

* When any of the pre-forecast, forecast, machine stoppage output is turned on with any counter, the counter number and its count value are automatically displayed. (Only in RUN mode)



- Precautions (Power supply)
- Input circuit is electrically insulated from power circuit and output circuit inside the counter.
- Input signals will not be counted, or will not be counted properly just after power is turned on and off. The unstable time will vary within the ranges shown below, according to the power supply voltage and load on the external power supply.



• Turn the power on and off all at once using a contact such as a switch or relay

- Although the front of the counter resists water and oils (IP54F), extended exposure to large amounts of either can adversely affect internal components. Provide protection with hard protective cover and rubber packing.
- The counter, input signal lines, and the input device must be separated as far as
 possible from any sources of electrical noise, such as high-voltage power lines.
 Shielded input signal lines can also be effective in suppressing noise.
- The exterior of the counter must not be exposed to organic solvents (eg. paint thinner or benzine), strong alkalies, or strong acids though comparatively resistant material is used for the housing.

$\langle \text{Others} \rangle$

- · Always isolate the counter from external circuits or short all the terminals before measuring dielectric strength between electric circuits and non-charged metal parts or performing similar testing with the counter mounted in a control panel. This is to prevent internal circuit damage that might occur if the test voltage enters the counter due to dielectric strength or insulation failure in control panel devices. • Do not perform insulation test or dielectric strength test, though input is electrical-
- ly insulated from internal circuits.
- Be sure to use transformer whose primary and secondary wirings are insulated and secondary wiring ungrounded as power supply for output devices.
- Warning

Fire, Explosion, and Severe Burn Hazard The H8BM has a built-in lithium battery. Be sure to dispose of the old H8BM properly, as lithium batteries are likely to explode if incinerated.

Electrial Shock Hazard

Never touch the input terminals of any H8BM Multi-Maintenance Coun-ter while power is being applied to the Multi-Maintenance Counter.

13 Ratings and characteristics

Model	H8BM-B	H8BM-BD	H8BM-BP	H8BM-BDP		
Supply voltage	24VDC					
Operating voltage range .	85 to 110% of rated supply voltage					
Power consumption	approx. 1.8W		approx. 2.2W			
Max. counting speed	30cps. min. signal width 16.7ms (ON : OFF = 1 : 1)					
Input	"H" level 16 to 30VDC "L" level 0 to 3VDC Input current approx.6.2mA (at 24VDC)					
Output			put : 30VDC max. 100mA max. PNP output			

Model	H8BM-B	H8BM-BD	H8BM-BP	H8BM-BDP	
Power failure compensation	10 years (at 25°C)				
Ambient operating temperature Ambient operating humidity Storage temperature	−10 to +55°C 35 to 85%RH −25 to +65°C				
Housing	Munsell 5Y3/1 (dark grey)				
Weight	Approx. 290g				

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Reminder of the settings

Counter No.	Application	pre-forecast	forecast	machine stoppage
1				stoppage
2	J			
3				
4				
5				
6		· · · · · · · · · · · · · · · · · · ·		
7			· · · · ·	
8				
9				
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