NO: CT-028   **PRODUCT:** H7CC
DATE: May 2021   **TYPE:** Discontinuation Notice

Discontinuation Notice of Solid-state Counter H7CN series

Product Discontinuation		Recommended Replacement
Solid-state Counter		Digital Counter
Model H7CN series	➡	**Model H7CC series**
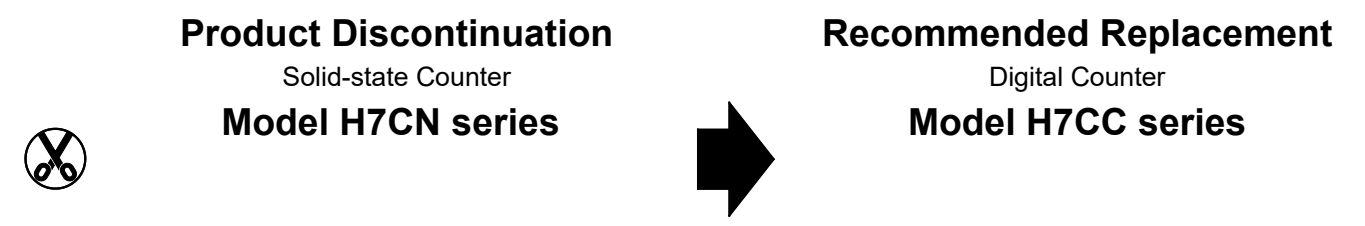
[Final order entry date]
The end of March 2022.

[Date of The Last Shipping]
The end of June 2022.

[Caution on recommended replacement]
・Parameter setting
For use of the recommended replacements, the setting including the operating mode and input signal method chenged to be set by internal parameters. For details, refer to "■Operation Procedures" (page 16).
・Terminal arrangement
Some of the recommended replacements have different terminal arrangements. For details, see "■Terminal Arrangement／Wiring Connections".
・The input possible time when power ON/OFF.
The input possible time after power ON (sensor waiting time) changed from H7CN： 50 ms to H7CC： 290 ms.
The input unstable time after power OFF changed from H7CN： 0 to 50 ms to H7CC： 5 to 1005 ms.
Please note the input possible time.

[Difference from discontinued product]

Recommended replacement Model	Body Color	Dimen-sions	Wire connection	Mounting Dimensions	Charac-teristics	Operation ratings	Operation methods
Model H7CC series	✕	○	○	◎	○	○	○

** : Compatible
* : The change is a little/Almost compatible
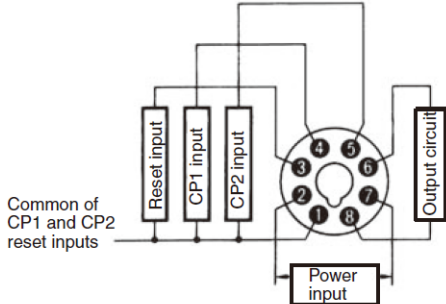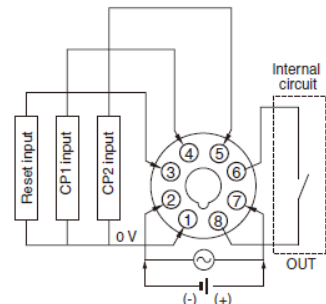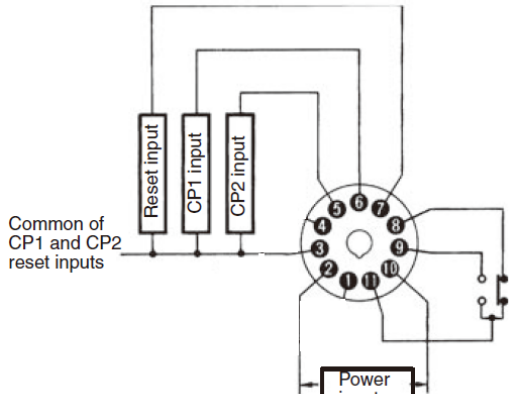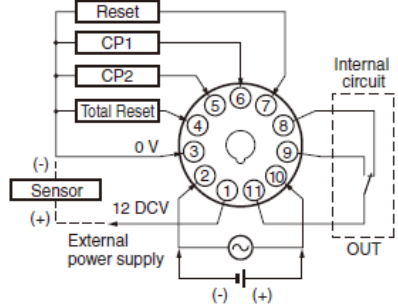-- : Not compatible
- : No corresponding specification
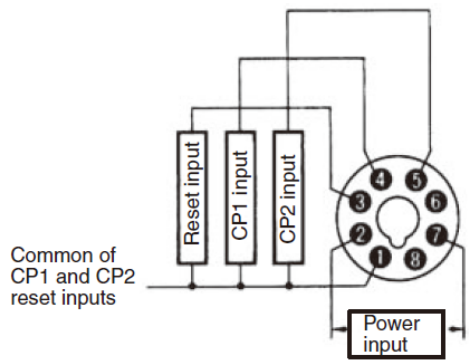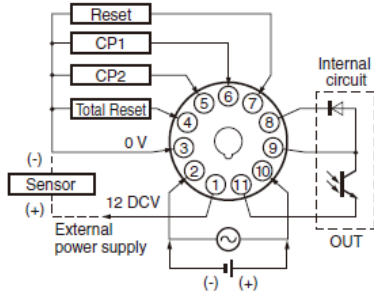
■Discontinued product and Recommended replacement

Discontinued product		Recommended replacement	
Model H7CN-XLN	100 to 240 VAC	Model H7CC-A8	100 to 240 VAC
Model H7CN-XHN	100 to 240 VAC		
Model H7CN-XLNM	100 to 240 VAC	Model H7CC-A11	100 to 240 VAC
Model H7CN-XHNM	100 to 240 VAC		
Model H7CN-XHNM	24V DC	Model H7CC-A11D	24 VAC/12 to 48 VDC
Model H7CN-XLNM	24V DC		
Model H7CN-XHNS	100 to 240 VAC	Model H7CC-A8	100 to 240 VAC
		Model H7CC-A11S	100 to 240 VAC
Model H7CN-XLN	12 to 48 VDC	Model H7CC-A8D	24 VAC/12 to 48 VDC
Model H7CN-XHN	12 to 48 VDC		
Model H7CN-XHNS	12 to 48 VDC	Model H7CC-A8D	24VAC/12 to 48 VDC
		Model H7CC-A11SD	24VAC/12 to 48VDC
Model H7CN-YLN	100 to 240 VAC	Model H7CC-A8	100 to 240 VAC
Model H7CN-YHN	100 to 240 VAC		
Model H7CN-YLNM	100 to 240 VAC	Model H7CC-A11	100 to 240 VAC
Model H7CN-YHNM	100 to 240 VAC		
Model H7CN-YLN	12 to 48 VDC	Model H7CC-A8D	24VAC/12 to 48VDC
Model H7CN-YHN	12 to 48 VDC		
Model H7CN-YLNM	24 VDC	Model H7CC-A11D	24 VAC/12 to 48 VDC
Model H7CN-YHNS	12 to 48 VDC	Model H7CC-A8D	24VAC/12 to 48VDC
		Model H7CC-A11SD	24VAC/12 to 48VDC
Model H7CN-ALN	100 to 240 VAC	Model H7CC-A8	100 to 240 VAC
Model H7CN-AHN	100 to 240 VAC		
Model H7CN-ALN	12 to 48 VDC	Model H7CC-A8D	24VAC/12 to 48 VDC
Model H7CN-AHN	12 to 48 VDC		
Model H7CN-BLN	100 to 240 VAC	Model H7CC-A8	100 to 240 VAC
Model H7CN-BHN	100 to 240 VAC		
Model H7CN-BLN	12 to 48 VDC	Model H7CC-A8D	24VAC/12 to 48 VDC
Model H7CN-TXL	100 to 240 VAC	Model H7CC-A8	100 to 240 VAC
Model H7CN-TXH	100 to 240 VAC		
Model H7CN-TXL	12 to 48 VDC	Model H7CC-A8D	24VAC/12 to 48 VDC
Model H7CN-TXH	12 to 48 VDC		
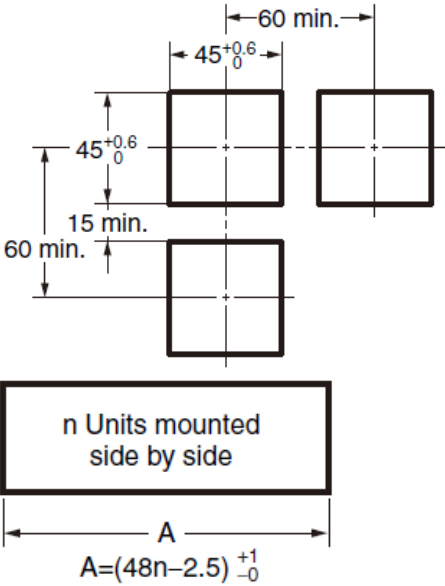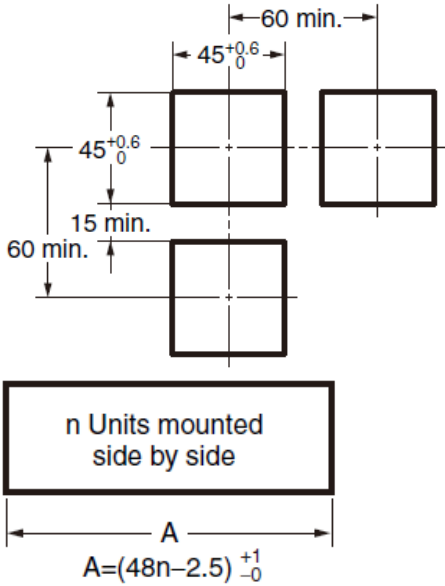
■Body color

Discontinued product Model H7CN series	Recommended replacement Model H7CC series
Case color : Light gray (5Y7/1)	Case color : Black (N1.5)
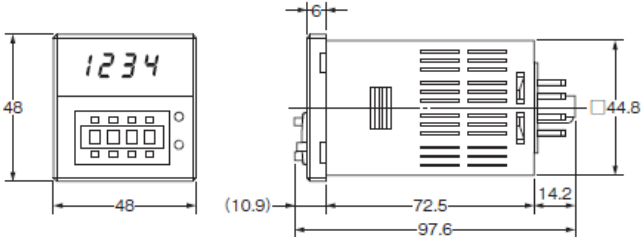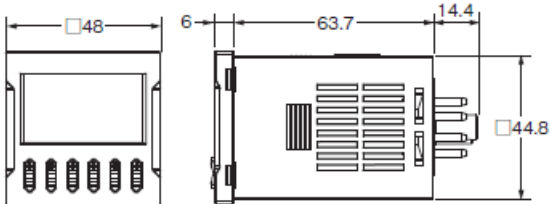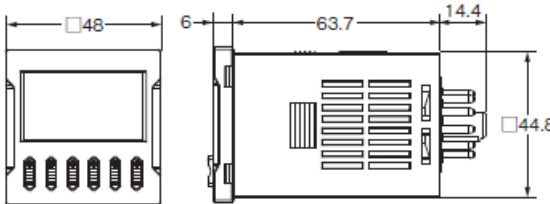
■Terminal arrangement／Wiring connections

Discontinued product Model H7CN series	Recommended replacement Model H7CC series
Preset counter **No Memory backup：H7CN-X□/Y□/A□/B□** 	**1-stage preset counter** **H7CC-A8/A8D**
With Memory backup：H7CN-X□M/Y□M 	**H7CC-A11/A11D**
Total counter **No Memory backup：H7CN-T□□** 	**H7CC-A11S/A11SD** Note 1：If replace H7CN-□□NS with 8-pin, the transistor output is changed to relay output. Also, if replace by transistor output, 8-pin is changed to 11-pin. Note 2：H7CC has no total counter type, so please use the total preset counter function of 1-stage preset counter. Note that the relay out put is allocated on terminal arrangement. Note 3：Other than the recommended replacement of H7CC series (including models with 2-stage preset counter and terminal block type) are omitted.

■Mounting dimensions

Discontinued product Model H7CN series	Recommended replacement Model H7CC series
Panel Cutouts	**Panel Cutouts**
←60 min.→ ←$45^{+0.6}_0$→ $45^{+0.6}_0$ 15 min. 60 min. n Units mounted side by side A A=(48n−2.5)$^{+1}_{-0}$	←60 min.→ ←$45^{+0.6}_0$→ $45^{+0.6}_0$ 15 min. 60 min. n Units mounted side by side A A=(48n−2.5)$^{+1}_{-0}$ Note：No change from the discontinued product.

■Dimensions

Discontinued product Model H7CN series	Recommended replacement Model H7CC series
Model H7CN series 1234 48 48 (10.9) 72.5 97.6 □44.8 14.2 6	**H7CC-A8□** □48 6 63.7 14.4 □44.8 **H7CC-A11□** □48 6 63.7 14.4 □44.8

■Ratings and Specifications

Item	Discontinued product Model H7CN series	Recommended replacement Model H7CC series

Type	Preset counter	1-stage preset counter, total preset counter (switchable)
Operating method	Up counting type, Down counting type, Up/Down type (UP/DOWN A：command input, UP/DOWN B：individual input) (The operating method differs depending on model)	Increment (UP), decrement (DOWN), increment/decrement (UP/DOWN A (command input) ,UP/DOWN B (individual input) ,UP/DOWN C (quadrature input) , UP/DOWN D (command input) ,UP/DOWN E (individual input) ,UP/DOWN F (quadrature input) (switchable)
Output mode	N (Total counter has no operating mode.)	N,F,C,R,K-1,P,Q,A,K-2,D,L (switchable)
Input method	No-voltage Input (NPN) Impedance by short-circuiting contacts：1 kΩ max. Residual voltage：2 V max. Impedance by opening contacts：100 kΩ min.	No-voltage (NPN) input/voltage (PNP) input (switchable) No-voltage inputs： ON impedance：1 kΩ max. (Leakage current：12 mA at 0 Ω) ON residual voltage：3 V max. OFF impedance：100 kΩ min. Voltage input： High (logic) level：4.5 to 30 VDC Low (logic) level：0 to 2 VDC (Input resistance：approx. 4.7 kΩ)
Display	7-segment LEDs (10mm high) , UP indicator (Total counter has no UP indicator.)	7-segment, negative transmissive LCD Character height Count value：10 mm (white) Set value：6 mm (green)
Number of digits	4 digits	6 digits (99999 to 999999) (－5 digits to ＋6 digits)
Count value setting method	Constant read-in system (the setting cane changed when power is ON) (Total counter has no setting of count value.)	Constant read-in system (the setting can be changed when power is ON)
Backup method	No backup function type：Power-OFF reset, external reset (minimum signal width：20ms) , manual reset With backup function type：external reset (minimum signal width：20ms), manual reset	External reset (minimum signal width 1ms or 20ms, selectable) ,manual reset, and automatic reset (internal according to C, R, P, and Q mode operation)
Backup memory	No／Yes (depending on model)	No ／Yes (switchable)
Control output	Contact output (1a) , contact output (1a) , transistor output (1a) (depending on model) (Total counter has no output.)	Contact output (1a) ,contact output (1c) ,transistor output (1a) (depending on model)
Supply voltage	・100 to 240 VAC, 50/60Hz ・24 VAC, 50/60Hz/12 to 48VDC	・100 to 240 VAC 50/60Hz ・24 VAC, 50/60Hz/12 to 48VDC
Operating voltage range	85% to 110% of rated voltage	85% to 110% of rated voltage (12 to 48 VDC：90% to 110%)
Power consumption	Approx. 12VA (at 100 VAC) Approx. 2.5W (at 48 VDC)	Approx. 6.8VA(100 to 240VAC) Approx. 5.5VA/3.3W (24VAC/12 to 48VDC)
Max. counting speeds of count input	30Hz (minimum pulse width 16.7ms) , 5kHz (minimum pulse width 0.1ms) (depending on the type) (ON/OFF ratio：1：1)	30 Hz (minimum pulse width：16.7 ms) or 10 kHz (minimum pulse width：0.05 ms) (selectable) (ON/OFF ratio 1：1)
Control output	・Contact output：3A, 250 VAC, resistive load (cosφ＝1), minimum applied load 5 VDC 10mA (P-level reference value) ・Transistor output：(open collector) 30 VDC max. 100mA max.	・Contact output：3 A at 250 VAC/30 VDC, resistive load (cosφ＝1), minimum applied load：5VDC 10mA (P-level reference value) ・Transistor output：DC30V max. 100mA max. Residual voltage: 1.5 VDC max. (approx. 1 V), Leakage current: 0.1 mA max.
Sensor waiting time	50ms max.	290ms max.

Item		Discontinued product Model H7CN series	Recommended replacement Model H7CC series
External power supply		No	No H7CC-A8□ Yes H7CC-A11□ 12 VDC (±10%) ,100mA

■Ratings and Specifications (Continued)

Item		Discontinued product Model H7CN series	Recommended replacement Model H7CC series
Operating temperature range		−10 to 55℃ (side-by-side mounting：−10 to 50℃) (with no icing or condensation)	−10 to 55℃ (side-by-side mounting：−10 to 50℃) (with no icing or condensation)
Storage temperature range		−25 to 65℃ (with no icing or condensation)	−25 to 70℃ (with no icing or condensation)
Operating humidity range		35 to 85%	25 to 85%
Insulation resistance		100 MΩ min. (at 500 VDC) between current-carrying terminal and exposed noncurrent-carrying metal parts, and between non-continuous contacts (Total counter has no control output.)	100 MΩ min. (at 500 VDC) between current-carrying terminal and exposed noncurrent-carrying metal parts, and between non-continuous contacts
Dielectric strength		2,000 VAC, 50/60 Hz for 1 min (between current carrying terminal and exposed non-current carrying metal parts and between non-continuous contacts) (Total counter has no control output.)	Between current-carrying metal parts and non-current carrying metal parts：2,000 VAC, 50/60 Hz for 1 min Between power supply and input circuit：2,000 VAC, 50/60Hz 1min (except H7CC-□D□) (1,500 VAC for 24 VAC/12 to 48 VDC) Between control output, power supply, and input circuit：AC1,500V 50/60Hz 1min (H7CC-□SD□) 2,000 VAC 50/60 Hz for 1 min (except H7CC-□SD□) Between non-continuous contacts：1,000 VAC, 50/60 Hz for 1 min
Impulse withstand voltage		6 kV (between power terminals) 6 kV (between current-carrying terminal and exposed non-current-carrying metal parts)	Between power terminals：6.0kV (24 VAC/12 to 48 VDC：1.0kV) 6.0 kV for 100 to 240 VAC, 1.0 kV for 24 VAC/12 to 48 VDC Between current-carrying terminal and exposed non-current-carrying metal parts：6.0kV (24 VAC/12 to 48 VDC：1.5kV)
Static immunity		8kV (malfunction)	8kV (malfunction),15kV (destruction)
Vibration resistance	Destruction	10 to 55Hz 0.75-mm single amplitude, each in three directions for 2 hours	10 to 55Hz 0.75-mm single amplitude, each in three directions for 2 hours
	Malfunction	10 to 55Hz 0.35-mm single amplitude, each in three directions for 10 min	10 to 55Hz 0.35-mm single amplitude, each in three directions for 10 min
Shock resistance	Destruction	$300 m/s^2$ each in three directions, three cycles	$300 m/s^2$ each in three directions, three cycles
	Malfunction	$100 m/s^2$ each in three directions, three cycles	$100 m/s^2$ each in three directions, three cycles
Life expectancy		Mechanical：10 million operations min. Electrical：100,000 operations min. (3A at 250 VAC, resistive load)	Mechanical：10 million operations min. Electrical：100,000 operations min. (3A at 250 VAC, resistive load)
Weight		Approx. 110g	Approx. 120g
Approved safety standards		UL508/CSA C22.2 No.14 EN61010-1 (IEC61010-1)：Pollution degree 2/overvoltage category II EN61326-1	cULus (or cURus)：UL508/CSA C22.2 No.14,EN61010-1 (IEC61010-1)：Pollution degree 2/overvoltage category II,EN61326-1,EAC,RCM,B300 PILOT DUTY 1/4 HP 1/3 HP, 240 VAC, 3-A, 250 VAC/30 VDC resistive load VDE0106/part100

Discontinued product
Model H7CN series

I/O Functions for Counter Operation

Up/Down Selectable Type

Note: (A) must be more than the minimum signal width. If (A) is set shorter than the minimum signal width, the error of count ±1 may occur.

Up mode	Down mode
Count input 1: Count input; Count input 2: Inhibit (gate) input	Count input 1: Count input; Count input 2: Inhibit (gate) input

Note: Input to the CP2 while the CP1 is set to "L."

Note: Input to the CP2 while the CP1 is set to "L."

Count input 1: Inhibit (gate) input; Count input 2: Count input	Count input 1: Inhibit (gate) input; Count input 2: Count input

Note: Input to the CP1 while the CP2 is set to "H."

Note: Input to the CP1 while the CP2 is set to "H."
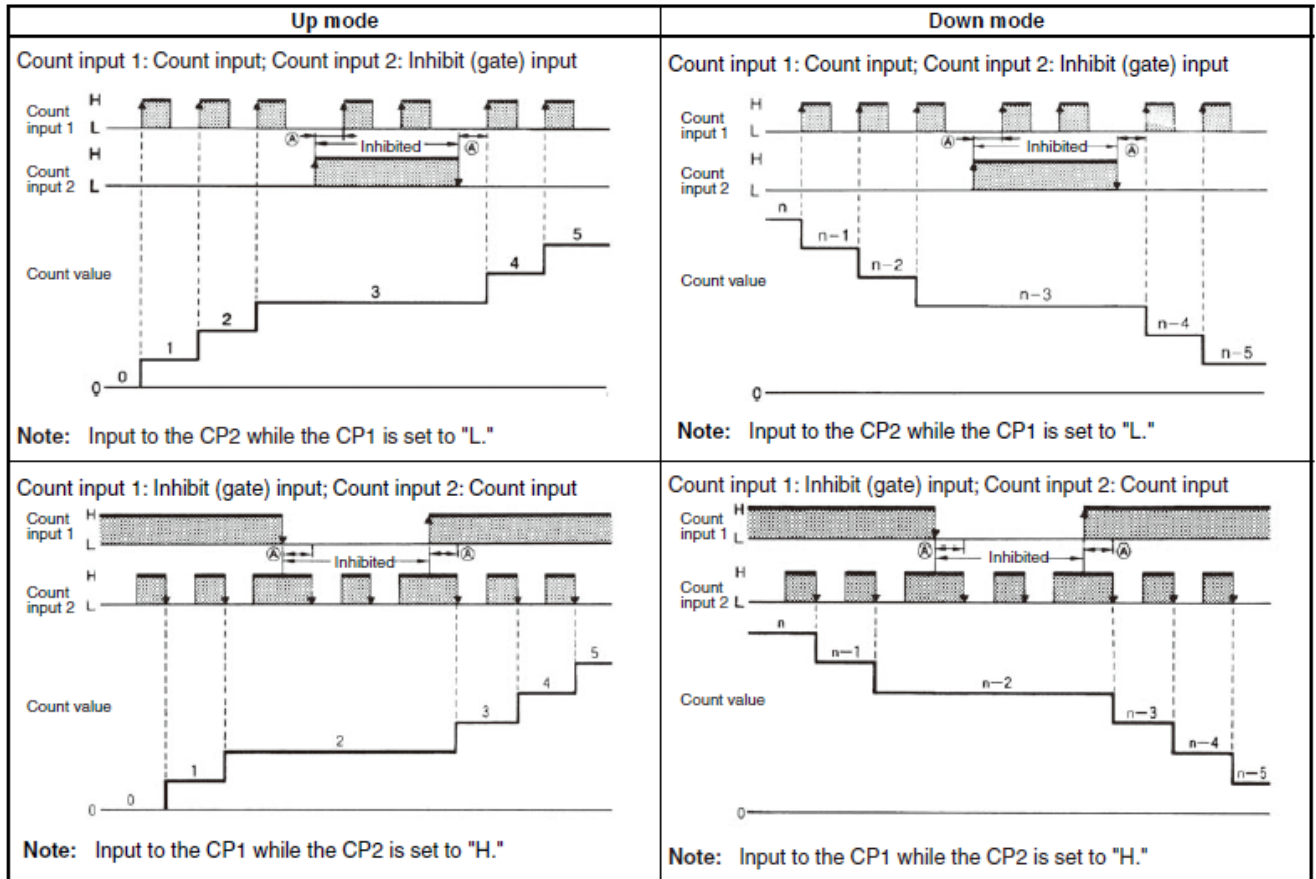
Up/Down Type

Note: A) must be more than the minimum signal width. If (A) is set shorter than the minimum signal width, the error of count ±1 may occur.

Up/Down A command input	Up/Down B individual input
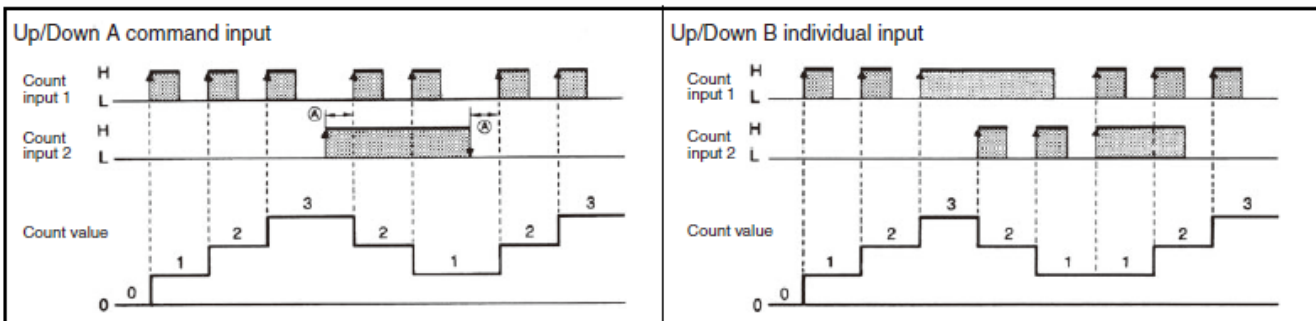
H: Short-circuit ON-time impedance; 1 kΩ max. Residual voltage; 0.5 V max.
L: Open circuit OFF-time impedance; 100 kΩ min.

■Input Modes and Present Value (Continued)

Discontinued product Model H7CN series

I/O Functions for Counter Operation
Preset counter

Up Type
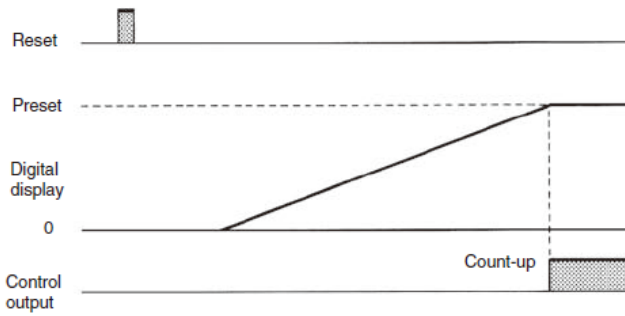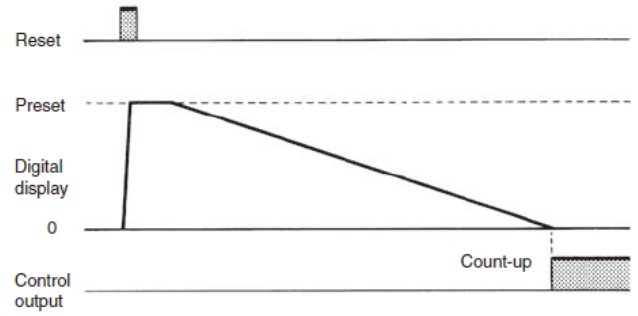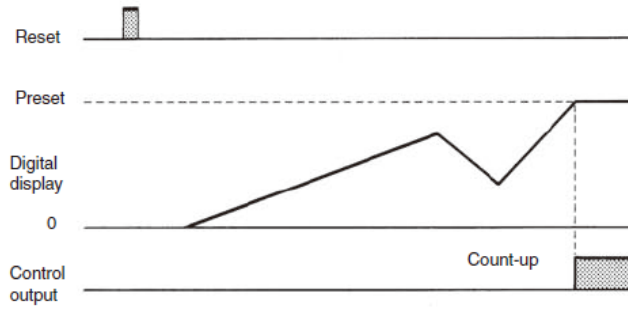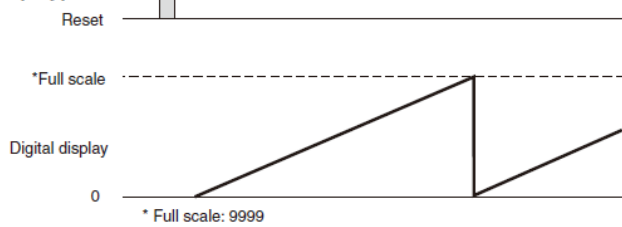
Reset

Preset

Digital
display

0

Control
output

Count-up

Down Type

Reset

Preset

Digital
display

0

Control
output

Count-up

Up/Down A, B Types

Reset

Preset

Digital
display

0

Control
output

Count-up

Total counter

Up Type

Reset

*Full scale

Digital display

0

* Full scale: 9999

Recommended replacement Model H7CC series

I/O Functions for Counter Operation
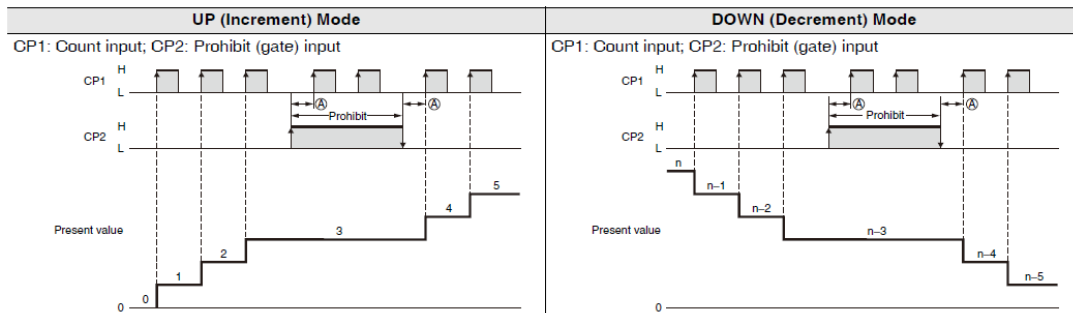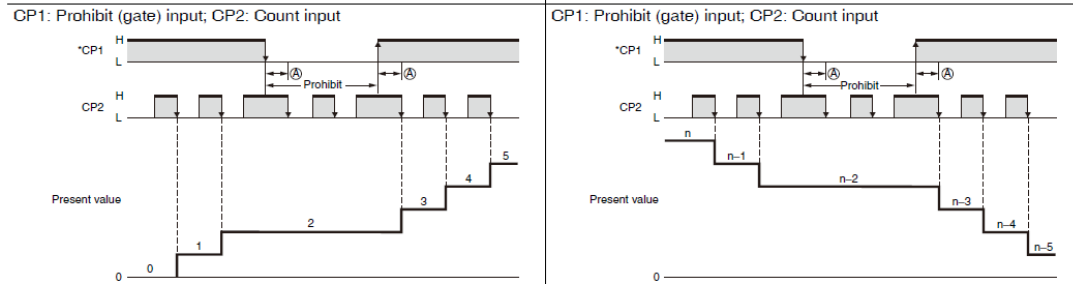
UP (Increment) Mode	DOWN (Decrement) Mode
CP1: Count input; CP2: Prohibit (gate) input	CP1: Count input; CP2: Prohibit (gate) input
Ⓐ must be greater than the minimum signal width. (See note 2.)	Ⓐ must be greater than the minimum signal width. (See note 2.)
CP1: Prohibit (gate) input; CP2: Count input	CP1: Prohibit (gate) input; CP2: Count input
Ⓐ must be greater than the minimum signal width. (See note 2.)	Ⓐ must be greater than the minimum signal width. (See note 2.)

✳Counting starts when the CP1 is turned ON after turning ON the power.
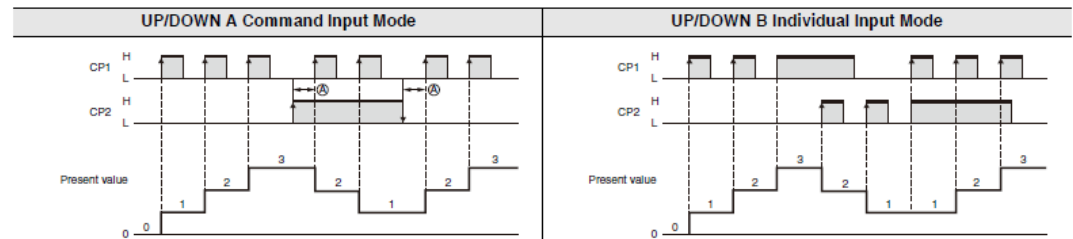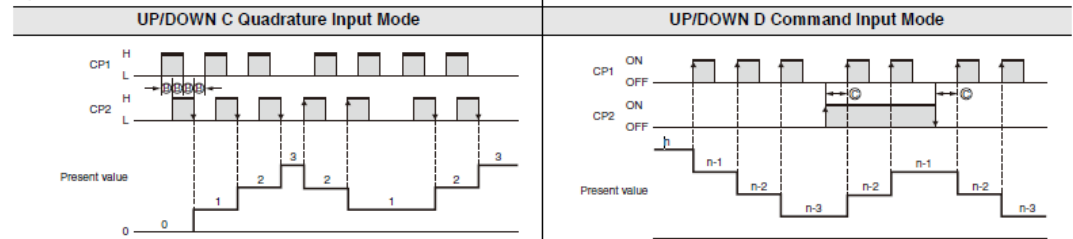
UP/DOWN A Command Input Mode	UP/DOWN B Individual Input Mode
Ⓐ must be greater than the minimum signal width. (See note 2.)	
UP/DOWN C Quadrature Input Mode	UP/DOWN D Command Input Mode
Ⓑ must be at least 1/2 the minimum signal width. (See note 2.)	Ⓒ must be at least 1/2 the minimum signal width. (See note 2.)
UP/DOWN E Individual Input Mode	UP/DOWN F Quadrature Input Mode
	Ⓓ must be at least 1/2 the minimum signal width. (See note 2.)
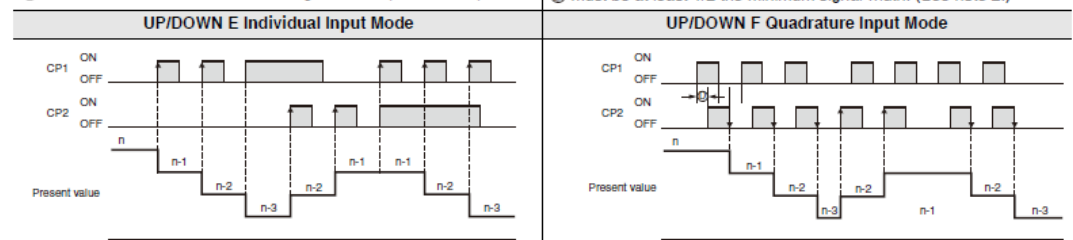
Note: 1. If the configuration selection is set to dual counter, CP1 and CP2 input will operate in the same way as the count input (CP1) of UP (increment) mode.
2. Ⓐ must be greater than the minimum signal width and Ⓑ must be at least 1/2 the minimum signal width.
If they are less, a count error of ±1 may occur.
3. Minimum signal width: 16.7 ms (when maximum counting speed = 30 Hz)
100 µs (when maximum counting speed = 5 kHz)
4. The meaning of the H and L symbols in the tables is explained below.

	Input method	No-voltage input (NPN input)	Voltage input (PNP input)
Symbol			
H		Short-circuit	4.5 to 30 VDC
L		Open	0 to 2 VDC

■Input Modes and Present Value (Continued)

Recommended replacement
Model H7CC series

I/O Functions for Counter Operation

One-shot output from OUT1

Self-holding output | Self-holding output | One-shot output from OUT2

(The one-shot output time can be set in the range 0.01 to 99.99s.)

		Input mode		Operation after count completion
Output mode setting	N	UP	DOWN	The outputs and present value display are held until reset/reset 1 is input.
		UP/DOWN A, B, C	UP/DOWN D, E, F	
	F	UP	DOWN	The present value display continues to increase/decrease. The outputs are held until reset/reset 1 is input.
		UP/DOWN A, B, C	UP/DOWN D, E, F	

■Input Modes and Present Value (Continued)

Recommended replacement
Model H7CC series

I/O Functions for Counter Operation

		Input mode		Operation after count completion
Output mode setting	C	**UP** / **UP/DOWN A, B, C**	**DOWN** / **UP/DOWN D, E, F**	As soon as the count reaches SV, the present value display returns to the reset start status. The present value display does not show the present value upon count-up. The outputs repeat one-shot operation. OUT1 self-holding output turns OFF after the OUT2 one-shot output time. The OUT1 one-shot output time is independent of OUT2.
	R	**UP** / **UP/DOWN A, B, C**	**DOWN** / **UP/DOWN D, E, F**	The present value display returns to the reset start status after the one-shot output time. The outputs repeat one-shot operation. OUT1 self-holding output turns OFF after the OUT2 one-shot output time. The OUT1 one-shot output time is independent of OUT2.

Recommended replacement
Model H7CC series

I/O Functions for Counter Operation

One-shot output from OUT1

Self-holding output — Self-holding output — One-shot output from OUT2

(The one-shot output time can be set in the range 0.01 to 99.99s.)

Output mode setting		Input mode		Operation after count completion
	K-1	**UP**	**DOWN**	The present value display continues to increase/decrease. OUT1 self-holding output turns OFF after the OUT2 one-shot output time. The OUT1 one-shot output time is independent of OUT2.
		UP/DOWN A, B, C	**UP/DOWN D, E, F**	
	P	**UP**	**DOWN**	The present value display does not change during the one-shot output time period, but the actual count returns to the reset start status. The output will return to one-shot mode. The outputs repeat one-shot operation. OUT1 self-holding output turns OFF after the OUT2 one-shot output time. The OUT1 one-shot output time is independent of OUT2.
		UP/DOWN A, B, C	**UP/DOWN D, E, F**	

12

■Input Modes and Present Value (Continued)

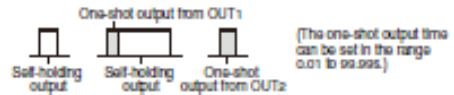| Recommended replacement |
| Model H7CC series |

I/O Functions for Counter Operation

Note:
1. When the present value reaches 999999, it returns to 0.
2. Counting cannot be performed during reset/reset 1 input.
3. If reset/reset 1 is input while one-shot output is ON, one-shot output turns OFF.
4. If there is power interruption while output is ON, output will turn ON again when the power supply has recovered, if memory backup is enabled.
   For one-shot output, output will turn ON again for the duration of the output time setting once the power supply has recovered.
5. Do not use the counter function in applications where the count may be completed (again) while one-shot output is ON.
6. The setting range is 0 to 999999.

13

Recommended replacement
Model H7CC series

I/O Functions for Counter Operation

	Input mode	Operation after count completion
	UP/DOWN A, B, C	
Output mode setting	K-2	The display continues to increase/decrease until the overflow or underflow value is reached. One-shot output only.
	D	The display continues to increase/decrease until the overflow or underflow value is reached. The outputs are ON while the count is equal.
	L	The display continues to increase/decrease until the overflow or underflow value is reached. OUT1 is held while the present value is less than or equal to set value 1. OUT2 is held while the present value is greater than or equal to set value 2.
	H	The display continues to increase/decrease until the overflow or underflow value is reached. OUT1 is held while the present value is greater than or equal to set value 1. OUT2 is held while the present value is greater than or equal to set value 2. ✴ H mode is available only when using a model as a 2-stage counter.

Note: 1. Counting cannot be performed during reset/reset 1 input.
2. If reset/reset 1 is input while one-shot output is ON, one-shot output turns OFF.
3. If there is power interruption while output is ON, output will turn ON again when the power supply has recovered, if memory backup is enabled.
For one-shot output, output will turn ON again for the duration of the output time setting once the power supply has recovered.
4. Do not use the counter function in applications where the count may be completed (again) while one-shot output is ON.
5. The set value is from –99999 to 999999.

■Operating procedures

<table>
<tr><td colspan="2" align="center">Discontinued product
Model H7CN series</td></tr>
<tr><td>

<u>Nomenclature</u>
①Count value
②Reset key
③Setting value
 (Thumbwheel Switches)

</td><td>

</td></tr>
<tr><td colspan="2">Note：There is no setting mode including operating mode, which is selectable for depending on model.</td></tr>
</table>
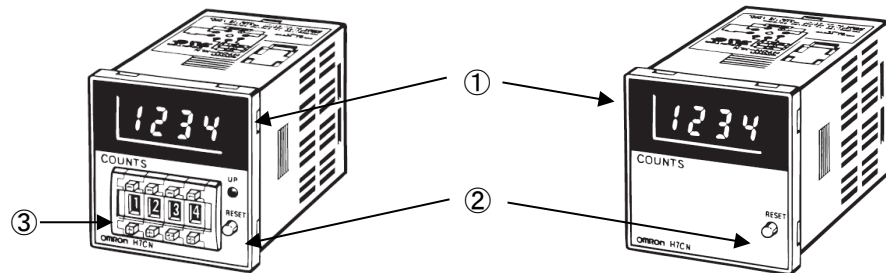
<table>
<tr><td colspan="2" align="center">Recommended replacement
Model H7CC series</td></tr>
<tr><td colspan="2">

<u>Nomenclature</u>

Display Section

1. Key Protect Indicator (yellow)

2. Control Output Indicator (yellow)
OUT: (One-stage)
OUT: ①② (Two-stage)

3. Reset Indicator (yellow)
(Lit when the reset input (1) is ON or reset operation is performed.)
Displayed only when the configuration selection mode is not tachometer mode.

4. Total Count Indicator
(Lit when the total count value is displayed.)

5. Batch Indicator
(Lit when the batch count value is displayed.)

6. Set Value 1, 2 Stage Indicator

7. Present Value (Main Display)
(Character height: 10 mm, white ✳)

8. Set value (Sub-display)
(Character height: 6 mm, green)

9. Hold Display (yellow)
Displayed only when the configuration selection mode is not tachometer mode.

Model with 6 Digits
Character Size for Main Display — 10 mm
Character Size for Sub-display — 6 mm

Operation Keys

10. Up Keys (UP1 to UP6)
(UP1, 2, 3, 4, 5, 6 from right to left)

11. Down Keys (DW1 to DW6)
(DW1, 2, 3, 4, 5, 6 from right to left)

12. Reset Operation (UP6+DW6)
(The reset operation is enabled by pressing and holding the keys for 1 second or longer. When the keys are pressed simultaneously, all status indicators start blinking. The reset operation is disabled if the keys are released within 1 second.)
To perform the reset operation, firmly press and hold both UP6 and DW6. If you press only UP6 or DW6, the set value will change.

13. Mode Operation (UP1+UP3 or DW1+DW3)
(Changes modes and setting items. Press and hold the keys for 2 seconds or longer to move to the function setting mode. When the keys are pressed simultaneously, the status indicators on UP1 (DW1) and UP3 (DW3) start blinking.
The mode operation is disabled if the keys are released within 2 seconds.)

14. Status indicator
<When Run mode is not selected.>
- When the indicator display mode is ON
  When used as a counter, the ratio of the present value to the set value is displayed from 0 to 100%.
  When used as a tachometer, if "Upper and lower limit" or "Area" is selected in the tachometer output mode, the ratio of the measurement value to the comparison value is displayed from 0 to 100%.
- When the indicator display mode is all off or all lit
  All off or all lit display.
  Note. When you press the Up Key or the Down Key, the status indicator display goes off, and the pressed key lights up or blinks.
<When Function Setting Mode is not selected>
- The keys that can be set light up for notification.

Switches

15. Key-protect Switch
(Default setting) OFF (Disable) ←→ ON (Enable)

</td></tr>
</table>

Recommended replacement Model H7CC series

Setting of Function setting mode

Step1

The H7CC-A□ is a Counter that contains more than one functional counter.

When using the Counter in any mode other than the default mode ✽, use the following chart to enter Configuration Selection Mode and set the functions that are suitable to the application.
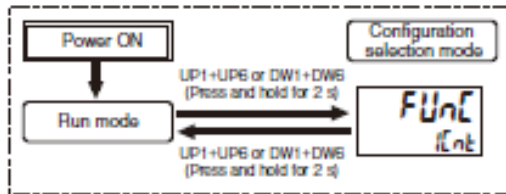
✽ Table   Default Modes and Selectable Functions

Model	Default mode	Selectable mode
H7CC-AW	2-stage preset counter	Any mode
H7CC-AU	1-stage preset counter	Any mode
Other models	1-stage preset counter	1-stage preset or total preset counter only

Select the function from Table using the UP1 Key (DW1 Key).

iCnt (1-stage preset counter) ↔ 2Cnt (2-stage preset counter) ↔ tCnt (Total and preset counter) ↔ bCnt (Batch counter) ↔ dCnt (Dual counter) ↔ twn (Twin counter) ↔ tACo (Tachometer)
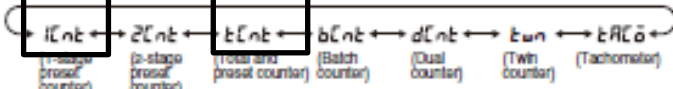
Note: The modes that can be selected depend on the model. (Refer to the Table.)

Power ON → Run mode

UP1+UP6 or DW1+DW6 (Press and hold for 2 s) →
UP1+UP6 or DW1+DW6 (Press and hold for 2 s) ←

Configuration selection mode → FUnC iCnt

Setting of Function setting mode

Step2

Parameters are set with the operation keys on the front panel.

Change to Function Setting Mode.

Power ON → Run mode

UP1+UP5 or DW1+DW5 ✽1 (Press and hold for 2 s) →
UP1+UP5 or DW1+DW5 ✽2 (Press and hold for 2 s) ←

Function setting mode
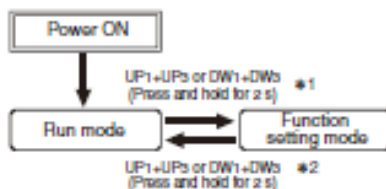
For details on operations and display in run mode, refer to page 21. The display depends on the selected configuration.

✽1 If the mode is switched to the function setting mode during operation, operation will continue.
✽2 Changes made to settings in function setting mode are enabled for the first time when the mode is changed to run mode.
   Also, when settings are changed, the counter is reset (present value initialized and output turned OFF) on returning to run mode.

The characters displayed in reverse video are the default settings.
In the function setting mode, the status indicator of the keys that can be set lights up.

(Example) In the case of the prescale value (PSCL)
A value from 0.001 to 99.999 can be set, and therefore, the status indicator of the UP1 Key to UP5 Key (DW1 Key to DW5 Key) lights up.

PSCL i000 — Prescale value (PSCL)

0.001 ~ 1.000 ~ 99.999
(0.001) (1.000) (99.999)

Function Setting Mode

✽ Use UP1+UP3 to move up and DW1+DW3 to move down

✽3

CntM uP — Input mode (CNTM)
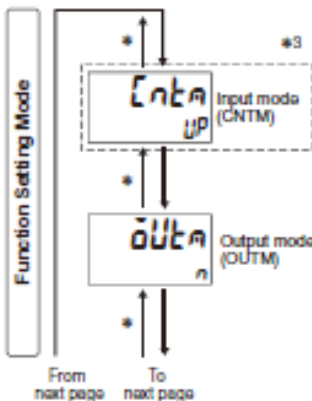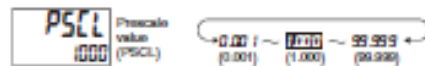
• Set the input mode using the UP1 Key (DW1 Key).

UP ↔ do9n ✽5 ↔ Ud-A ✽5 ↔ Ud-b ✽5 ↔ Ud-C ↔ Ud-d ↔ Ud-E ✽5 ↔ Ud-F ✽5
(UP) (DOWN) (UPDOWNA) (UPDOWNB) (UPDOWNC) (UPDOWND) (UPDOWNE) (UPDOWNF)
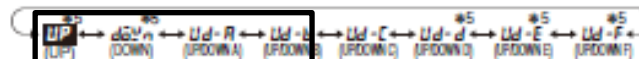
Note: Displayed only when Twin Counter Mode is not selected.
✽5 Displayed for output modes other than K-2, D, L, and H only.

OUtM n — Output mode (OUTM)

• Set the output mode using the UP1 Key (DW1 Key).

n ↔ F ↔ C ↔ r ↔ K-1 ↔ P ↔ q ↔ A ↔ K-2 ✽6 ↔ d ✽6 ↔ L ✽6 ↔ H ✽6
(N) (F) (C) (R) (K-1) (P) (Q) (A) (K-2) (D) (L) (H)
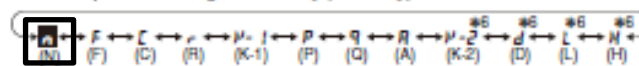
✽6. K-2, d, L and H are displayed only when the H7AN compatibility function is oFF or the input mode is Ud-A, Ud-b, or Ud-C.
(Not displayed when the function is set to tYn.)
H is displayed only for 2-stage models.

✽3 When Using Dual Counter Operation

CALm Add — Dual count calculating mode
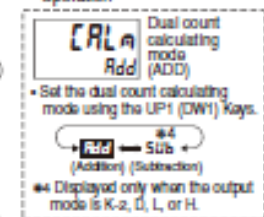
• Set the dual count calculating mode using the UP1 (DW1) Keys.

Add ↔ SUb ✽4
(Addition) (Subtraction)
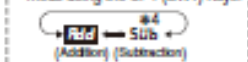
✽4 Displayed only when the output mode is K-2, D, L, or H.

Usage as a Decrementing Counter (SUb)
The SUb parameter is normally not displayed. You must set the aUEn parameter shown below in advance to ✽6 (K-2, d, L, or H) to display it.

From next page   To next page

Recommended replacement Model H7CC series

Setting of Function setting mode

To previous page — From previous page

✱ Use UP1+UP3 to move up and DW1+DW3 to move down

Function Setting Mode

Output time (OTIM) — ōとⁱᴹ 0.50
- Set each digit using the individual UP1 to UP4 Keys (DW1 to DW4 Keys).
  → 0.0 I ~ 0.50 ~ 99.99 ←
  (0.01 s) (0.50 s) (99.99 s)
  Note: Displayed only when the output mode is C, R, K-1, P, Q, A, or K-2.

Counting speed (CNTS) — CntS 30Hz
- Set the counting speed using the UP1 Key (DW1 Key).
  30Hz ↔ 5kHz
  (30 Hz) (5 kHz) ✱
  ✱ The display shows 5 kHz, but the maximum counting speed is 10 kHz.

Reset input signal width (IFLT) — ⁱFLt 20mS
- Set the Reset input signal width using the UP1 Key (DW1 Key).
  20mS ↔ ImS
  (20 ms) (1 ms)

Decimal point position (DP) — dP ------
- Set the decimal point position using the UP1 Key (DW1 Key).
  (No decimal point) ↔ (One digit after decimal point) ↔ (Two digits after decimal point) ↔ (Three digits after decimal point)
  Note: Not displayed when the H7AN compatibility function is ON.

Prescale value (PSCL) — PSCL 1.000
- Set each digit using the individual UP1 Key (DW1 Key).
  → 0.00 I ~ 1.000 ~ 99.999 ←
  (0.001) (1.000) (99.999)
  Note: Not displayed when the H7AN compatibility function is ON.

NPN/PNP input mode (IMOD) — ⁱᴹōd nPn
- Set the NPN/PNP input mode using the UP1 Key (DW1 Key).
  nPn ↔ PnP
  (NPN input) (PNP input)

Absolute value setting/forecast value setting (SETM) — SEtᴹ AbS
- Make the absolute value setting and forecast setting using the UP1 Key (DW1 Key).
  AbS ↔ ōFSt
  (ABS) (OFST)
  Note: Displayed only when the configuration selection mode is set to the 2-stage counter 2Cnt.

Set value upper limit (SL-H) — SL-H 999999
- Set each digit using the individual UP1 to UP6 Keys (DW1 to DW6 Keys).
  I ↔ 999999
  (1) (999999)

Forecast setting upper limit (PL-H) — PL-H
- Set each digit using the individual UP1 to UP6 Keys (DW1 to DW6 Keys).
  I ↔ 999999
  (1) (999999)
  Note: Displayed only when the configuration selection mode is set to the 2-stage counter 2Cnt and there is a forecast value setting.

Batch count upper limit (BL-H) — bL-H 999999
- Set each digit using the individual UP1 to UP6 Keys (DW1 to DW6 Keys).
  I ↔ 999999
  (1) (999999)
  Note: Displayed only when the output mode is bCnt.

✱7 Set each digit using the individual UP1 to UP4 Keys (DW1 to DW4 Keys).

When using as a 2-stage preset counter

ōとᴹ2 0.50 One-shot output 2 time (OTM2)
→ 0.0 I ~ 0.50 ~ 99.99 ←
(0.01 s) (0.50 s) (99.99 s)
Note: Displayed only when the output mode is C, R, K-1, P, Q, A, or K-2.

ōとᴹ I HōLd One-shot output 1 time (OTM1)
→ HōLd 0.0 I ~ 99.99 ←
(Displayed) (0.01 s) (99.99 s)
If the output time is 0.00, HōLd is displayed.
Note: Displayed for output modes other than D, L, and H. HOLD cannot be set when the output mode is K-2.

When using as a batch counter

ōとᴹ2 0.50 One-shot output 2 time (OTM2)
→ 0.0 I ~ 0.50 ~ 99.99 ←
(0.01 s) (0.50 s) (99.99 s)
Note: Displayed only when the output mode is C, R, K-1, P, Q, A, or K-2.

✱7 Set each digit using the individual UP1 to UP4 Keys (DW1 to DW4 Keys).

Twin Counter

ōとᴹ2 0.50 Output 2 output time (OTM2)
→ 0.0 I ~ 0.50 ~ 99.99 ←
(0.01 s) (0.50 s) (99.99 s)
Note: Displayed only when the output mode is C, R, K-1, P, Q, or A.

ōとᴹ I 0.50 Output 1 output time (OTM1)
→ 0.0 I ~ 0.50 ~ 99.99 ←
(0.01 s) (0.50 s) (99.99 s)
Note: Displayed only when the output mode is C, R, K-1, P, Q, or A.

From next page — To next page

17

Recommended replacement Model H7CC series

Setting of Function setting mode

To previous page / From previous page

✱ Use UP1+UP3 to move up and DW1+DW3 to move down

Function Setting Mode

ōt5t **Output allocation (OTST)** ōFF
- Set the output allocation using the UP1 Key (DW1 Key).
  ōFF ←→ ōn
  (OFF)   (ON)
  Note: Displayed only when the 2-stage preset counter, batch counter, or twin counter is selected in the H7CC-□W(U)□.
  OFF: Output 1 (OUT1) = 12, 13 Output 2 (OUT2) = 3, 4, 5/
  ON: Output 1 (OUT1) = 3, 4, 5 Output 2 (OUT2) = 12, 13 (The numbers are the terminals numbers.)

ⵏYPⵏ **Key protect level (KYPT)** ⵏP-1
- Set the key protect level using the UP1 Key (DW1 Key).
  ⵏP-1 ←→ ⵏP-2 ←→ ⵏP-3 ←→ ⵏP-4 ←→ ⵏP-5 ←→ ⵏP-6 ←→ ⵏP-7
  (KP-1)   (KP-2)   (KP-3)   (KP-4)   (KP-5)   (KP-6)   (KP-7)

Output Inversion ✱8

✱8 Set the output inversion using the UP1 Key (DW1 Key).

Procedure for Models Other than "-□W(U)□" Models

ōt-ⵏ **Output Inversion (OT-I)** n-ō
  n-ō ←→ n-ⵏ
  (Normally Open) (Normally Close)

Procedure for "-□W(U)□" Models

ōt1ⵏ **Output 1 (OUT1) Inversion (OT1I)** n-ō
  n-ō ←→ n-ⵏ
  (Normally Open) (Normally Close)

ōt2ⵏ **Output 2 (OUT2) Inversion (OT2I)** n-ō
  n-ō ←→ n-ⵏ
  (Normally Open) (Normally Close)

bⵏUP **Memory back up (BKUP)** ōn
- Set the memory backup using the UP1 Key (DW1 Key).
  ōn ←→ ōFF
  (Enable)   (Disable)

H7Rn **H7AN compatibility function (H7AN)** ōFF
- Set the H7AN compatibility function using the UP1 Key (DW1 Key).
  ōFF ←→ ōn
  (OFF)   (ON)
  (When the function is set to ON, the count will shift from 0 to 999999.)
  Note: Disable the H7AN compatibility function when converting from the H7CX or H7CX-N.

ⵏndⵏ **Indicator display mode (INDC)** ōn
- Set the indicator display mode using the UP1 Key (DW1 Key).
  ōn ←→ RLōF ←→ RLLⵏ
  (Count status display) (Indicator display is turned OFF, and the status indicator is all off.) (Indicator display is turned OFF, and the status indicator is all lit.)

Output ON count alarm set value/monitor value ✱9

✱9 Set each digit using the Individual UP1 to UP4 Keys (DW1 to DW4 Keys).

Procedure for Models Other than "-□W(U)□" Models

ōn-R **Output ON count alarm set value (ON-A)** 100
  0 ~ 100 ~ 9999
  (0 × 1000 times) (9999 × 1000 times)

ōn-ⵏ **Output ON count monitor value (ON-C)** 0
  Note: The monitor value is only displayed. It cannot be set.

Procedure for "-□W(U)□" Models

ōn1R **Output 1 (OUT1) ON count alarm set value (ON1A)** 100
  0 ~ 100 ~ 9999
  (0 × 1000 times) (9999 × 1000 times)

ōn2R **Output 2 (OUT2) ON count alarm set value (ON2A)** 100
  0 ~ 100 ~ 9999
  (0 × 1000 times) (9999 × 1000 times)

ōn1ⵏ **Output 1 (OUT1) ON count monitor value (ON1C)** 0
  Note: The monitor value is only displayed. It cannot be set.

ōn2ⵏ **Output 2 (OUT2) ON count monitor value (ON2C)** 0
  Note: The monitor value is only displayed. It cannot be set.

ōt-R **Cumulative run time (OT-A) alarm set value**
- Set each digit using the individual UP1 to UP3 Keys (DW1 to DW3 Keys).
  0.0 ~ 10.0 ~ 99.9
  (0.0 year) (10.0 years) (99.9 years)

ōt-ⵏ **Cumulative run time (OT-C) monitor value**
  Note: The monitor value is only displayed. It cannot be set.

uⵏr **Software version (ver.)**
  Note: The monitor value is only displayed. It cannot be set.