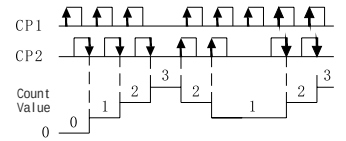
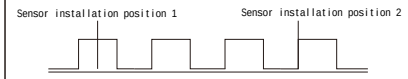
Reversible C Mode

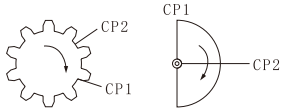
Automatically discriminates forward/reverse rotation directions for reversible counting. Requires a rotary encoder or two sensors (meter wheels) with a 90° phase difference.



Horizontal Sensor Installation:



Installation on a Rotating Shaft:



VIII.Function Setting

1.Button Functions:

① "M" Function Key:Press "M" once: Displays the preset value (setting range: 1～99999999).
Long-press "M" for 4 seconds: Displays the quantity value coefficient, A2、A3、A4、A5;

Explanation:Quantity Value Coefficient: Setting range: 0.0001～9.9999.

A2: A2-----L represents low-frequency counting (counting frequency ≤ 30 times/second);
A2-----H represents high-frequency counting (counting frequency ≤ 5000 times/second);

A3: A3--Ud-b represents reversible counting mode B A3--Ud-C represents reversible counting mode C

A4: A4-----n represents N system A4-----C represents C system A4-----F represents F system
A4-----R represents R system A4-----H represents X system

A5: A5---00.0 represents automatic zero reset time (setting range 0.1 second to 99.9 seconds, limited to C and R systems);

② "►" Shift key: Press this key to move the digit, such as moving the units digit to the tens digit or the tens digit to the hundreds digit, etc.

③ "▲" Add key: Press this key to add digits to the selected number (i.e., the flashing number).

④ "R" Reset key: Press this key to reset the displayed number and the counting output state to the initial state.

Note: Calculation of the magnitude coefficient: Assuming the circumference of the roller is 0.2 meters and one pulse signal is generated per revolution, then:

$$\text{Magnitude coefficient} = \frac{\pi \times \text{Roller diameter}}{\text{Number of pulses per revolution of the roller}} = \frac{\text{Roller circumference}}{\text{Number of pulses per revolution of the roller}} = \frac{0.2}{1} = 0.2$$

2.Preset number setting

Step 1: Turn on the power supply → display → The factory-set count value

Step 2: Press the M key once → display → The factory-set preset number → Press "►" and "▲" keys to adjust → Set the preset value required by the user, then press the R key to confirm.

3.Parameter setting (No fifth-step setting for N, F, X systems; limited to C, R, T systems):

Step 1: Long-press "M" key for 4 seconds → display → Quantity Value Coefficient Setting → Press "►" and "▲" keys to adjust → The quantity value coefficient required by the user

Step 2: Press "M" key again → display → High/Low Frequency Setting → Press the ▲ key to display
- A2-----L low-frequency counting 30 times/second
- A2-----H high-frequency counting 5000 times/second

Step 3: Press "M" key again → display → Counting Mode Setting → Press the ▲ key to display
- A3--Ud-b reversible counting mode B
- A3--Ud-C reversible counting mode C

Step 4: Press "M" key again → display → Output Mode Setting → Press the ▲ key to display
- A4-----n N-type
- A4-----R R-type
- A4-----C C-type
- A4-----H X-type
- A4-----F F-type

Step 5: Press "M" key again → display → The automatic reset time setting for modes C and R is R5---00.0 seconds (setting range: 0.1 second to 99.9 seconds) → Press "►" and "▲" keys to adjust → The time required by the user

Step 6: Press the R key again to save the data

Example: The preset number is 111250.00, the scale coefficient is 0.2500, the counting signal is high-frequency counting, the counting method is reversible counting mode B, the output modes are N, F, X, C, and R types respectively, and the automatic reset time is 15.8 seconds. Its display codes are as follows:

N-type	111250.00	0.2500	A2-----H	A3--Ud-b	A4-----n		Finally, press the R key to store the data.
F-type	111250.00	0.2500	A2-----H	A3--Ud-b	A4-----F		Finally, press the R key to store the data.
X-type	111250.00	0.2500	A2-----H	A3--Ud-b	A4-----H		Finally, press the R key to store the data.
C-type	111250.00	0.2500	A2-----H	A3--Ud-b	A4-----C	A5---15.8	Finally, press the R key to store the data.
R-type	111250.00	0.2500	A2-----H	A3--Ud-b	A4-----R	A5---15.8	Finally, press the R key to store the data.

IX.Instructions for Use

1.When the contact signal is input, if there is an incorrect count due to poor contact or bounce of the contact, please connect a 4.7 μF/50V electrolytic capacitor between the counting signal input terminals ⑧, ⑨ and ⑩ respectively. Terminals ⑧ and ⑨ are connected to the positive pole of the electrolytic capacitor, and terminal ⑩ is connected to the negative pole of the electrolytic capacitor.

2.The display accuracy and counting range are related to the setting of the scale coefficient:

a) If the scale coefficient is set to 0.002, which is accurate to the third decimal place, its counting range is 0.002 ~ 99999.999.

b) If the scale coefficient is set to 0.2, which is accurate to the first decimal place, its counting range is 0.2 ~ 9999999.9.

X.Order Instructions

The order form should specify the product model, working voltage, and quantity.

Example: HHM2-H (new type), AC220V, 600 pieces.

产品合格证

C-Lin 欣灵

产品合格证

符合标准: GB/T 14048.5

检 验 员: 检01

出厂日期: 见产品或包装

本产品经检验合格,准予出厂。

C-Lin 欣灵电气股份有限公司 XINLING ELECTRIC CO.,LTD.

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技术咨询：400-8236-775

RECYCLABLE

国家高新技术企业 浙江省知名商号

C-Lin 欣灵

使用说明书
Products Instructions

HHM2-H (New Model)

Counting Relay N/C/F/R/X Type

Thank you very much for using C-Lin products. Please read the instruction manual before use!

29A039P0

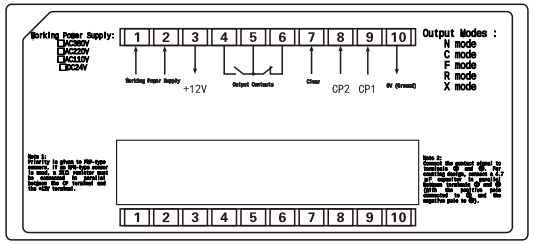
I.Overview

The HHM2-H (new type) counting relay is suitable for use as a counting component in control circuits with an AC frequency of 50/60Hz, a rated operating voltage of 380V and below, or a DC operating voltage of 24V. It connects or disconnects the circuit according to the preset value.
It adopts a single-chip microcomputer circuit, an EEPROM memory, photoelectric isolation for signal input, and an 8-digit LED display. It has the advantages of a wide length measurement range, multiple counting signal inputs, multiple output working modes, forward/reverse reversible counting, a power-off memory duration of up to 10 years, and stable and reliable counting performance.
This product meets the requirements of GB/T 14048.5

II.Main Technical Data

1.Operating voltage (control power supply voltage)：AC380V, 220V, 110V, 36V, 24V at 50/60Hz, allowable voltage fluctuation range: (85%～110%) Ue.DC24V.
2.Counting range1～9999999 (quantity value coefficient: 0.0001～9.9999).
3.Counting signal：a) Contact signal: Relay contacts, travel switches, etc.
b) Level signal: Pulse level (H: DC4V～30V valid; L: 0～DC2V invalid).
c) Sensor signal: Photoelectric switch, proximity switch, Hall switch, meter wheel, rotary encoder.
4.Counting frequency：a) Low-frequency counting: ≤30 counts/second, minimum signal pulse width ≥ 15ms.
b) High-frequency counting: ≤5000 counts/second, minimum signal pulse width ≥0.01ms, signal duty cycle = 50%.
5.Reset method：Button reset or short-circuit reset via terminals ⑦ and ⑩.
6.Output modeN, C, F, R, X modes.
7.Input modeReversible B, Reversible C modes.
8.Power-off memory：10 years.
9.Contact capacity3A AC250V (resistive).
10:Ue/Ie:Under usage category AC-15: rated operating voltage Ue = AC250V, rated operating current Ie = 3A.
11.Conventional heating current Ith:5A.
12:Rated insulation voltage Ui:400V.
13:Rated impulse withstand voltage Uimp:2.5KV.
14.Pollution degree:Level 3.
15:Protection classFront panel IP20.
16.Ambient temperature:-5℃～+40℃.
17:Relative humidity:≤90%.
18:Altitude≤2000m.
19:Installation method:Panel-mounted.

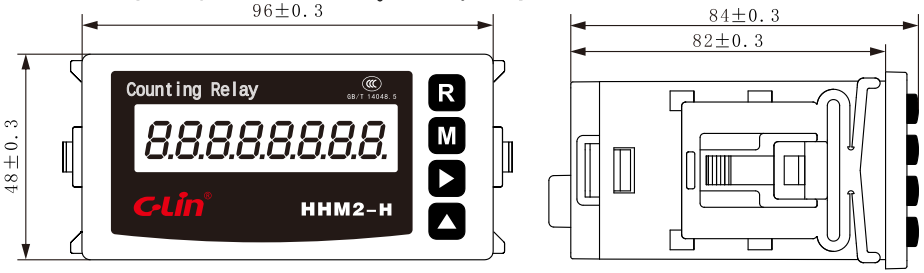
III.Wiring Diagram



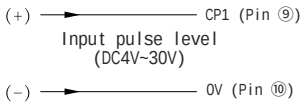
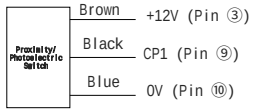
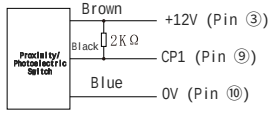
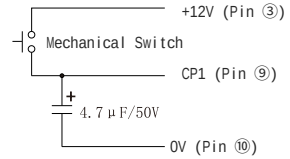
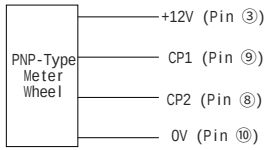
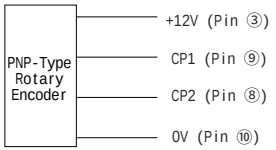
Note:① and ② = Power input terminals (for DC, ① = positive pole, ② = negative pole).③ = DC12V 30mA (max) auxiliary power output for sensors.④ and ⑤ = Normally Open (NO) contacts; ⑤ and ⑥ = Normally Closed (NC) contacts.⑦ = Reset terminal.⑧ and ⑨ = Counting signal input terminals.⑩ = 0V (Ground).

IV.Outline and Installation Dimension Diagram

(Installation opening dimension: $45_{0}^{+0.5} \times 92_{0}^{+0.5}$mm)

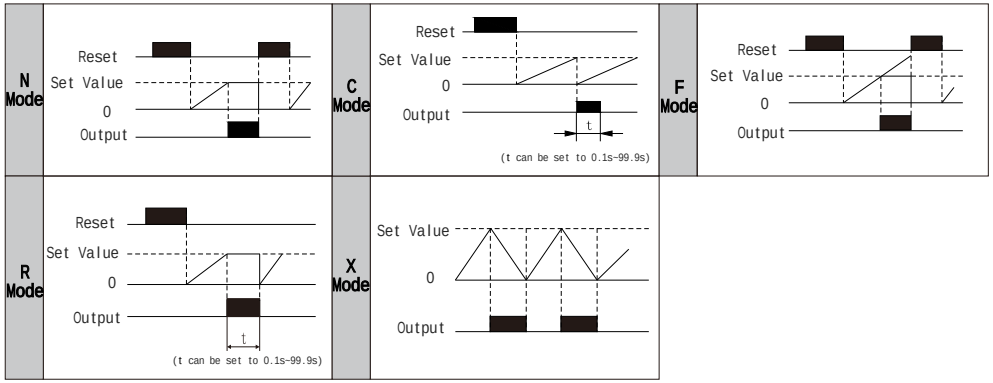


V.Counting Signal Input

Pulse Counting	PNP-Type Sensor	NPN-Type Sensor
		
(+) CP1 (Pin ⑨) Input pulse level (DC4V~30V) (-) 0V (Pin ⑩)	Proximity/ Photoelectric Switch Brown +12V (Pin ③) Black CP1 (Pin ⑨) Blue 0V (Pin ⑩)	Proximity/ Photoelectric Switch Brown +12V (Pin ③) Black 2KΩ CP1 (Pin ⑨) Blue 0V (Pin ⑩) **Note:When using an NPN-type sensor, a 2KΩ resistor must be connected between the CP signal terminal and +12V.**
Contact Signal Counting	**PNP-Type Meter Wheel**	**PNP-Type Rotary Encoder**
		
+12V (Pin ③) Mechanical Switch CP1 (Pin ⑨) 4.7μF/50V 0V (Pin ⑩) **Notes:**If over-counting or under-counting occurs, connect a 4.7μF/50V electrolytic capacitor between the CP1 signal terminal and 0V.	PNP-Type Meter Wheel +12V (Pin ③) CP1 (Pin ⑨) CP2 (Pin ⑧) 0V (Pin ⑩) **Notes:**When using an NPN-type meter wheel, a 2KΩ resistor must be connected between each of the CP1 and CP2 signal terminals and +12V.	PNP-Type Rotary Encoder +12V (Pin ③) CP1 (Pin ⑨) CP2 (Pin ⑧) 0V (Pin ⑩) **Note:**When using an NPN-type rotary encoder, a 2KΩ resistor must be connected between each of the CP1 and CP2 signal terminals and +12V.

Note: Priority is given to DC (10~30V) PNP normally open photoelectric switches or proximity switches. If an NPN -type device is used, connect an external 2KΩ resistor as shown in the diagram above. (Each meter counter is randomly supplied with two 2KΩ resistors and two 4.7μF/50V electrolytic capacitors at the factory.)

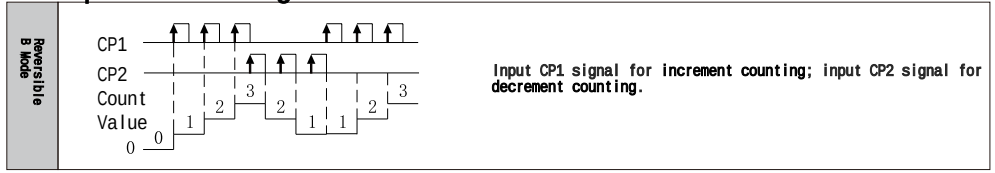
VI.Output Mode Diagrams



N Mode: Counting stops when the set value is reached, and the relay pulls in. Press the reset button to reset and restart counting.
C Mode: When the set value is reached, the display automatically resets and counting restarts. Meanwhile, the relay pulls in and releases after t seconds.
F Mode: Counting continues when the set value is reached, but the relay pulls in. Press the reset button to reset and restart counting.
R Mode: When the set value is reached, a short pulse is output for t seconds. After the pulse ends, counting restarts automatically.
X Mode: When the set value is reached, the relay pulls in and releases when counting down to 0, repeating this cycle.

Note:Modes N, F, and X require manual reset; modes C and R support automatic reset.

VII.Input Mode Diagram



Input CP1 signal for increment counting; input CP2 signal for decrement counting.