

## I. Overview

The HHD7-F Forward-Reverse Controller (hereinafter referred to as the Controller) is suitable for use as a time-delay component in control circuits with AC 50Hz, operating voltage of 380V or below, or DC operating voltage of 24V.

This Controller features advantages such as high time-delay accuracy, wide time-delay range, and low power consumption. Its external dimensions comply with the DIN standard (48mm×48mm), and it is widely applied in various automatic control circuits for motors.

This Controller meets the relevant requirements of GB/T 14048.5.

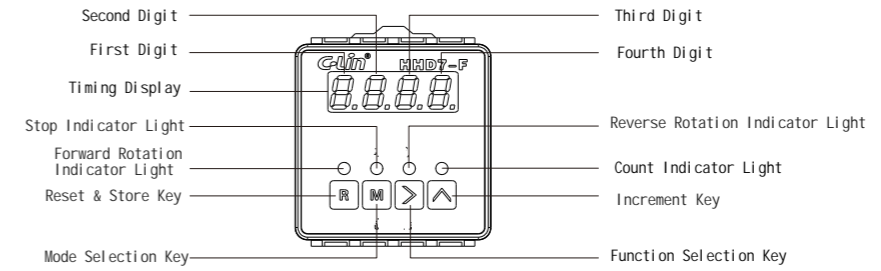
## II. Main Technical Specifications

Table

Model	HHD7-F
Operating Power Supply (Control Power Supply Voltage)	AC380V, AC220V, AC110V, AC36V, AC24V (50Hz); DC24V; allowable voltage fluctuation range: (85%-110%) Ui
Time-Delay Range	Forward rotation: 1s-99min99s, 0.1s-999.9s, 1s-9999s; Stop: 0.1s-999.9s; Reverse rotation: 1s-99min99s, 0.1s-999.9s, 1s-9999s
Timing Error	When time-delay range > 1s: Er ≤ 1%; When time-delay range ≤ 1s: Dr ≤ 50ms
Timing Mode	Timing starts when the control terminal is connected; stops when disconnected; resumes and accumulates when reconnected
Reset Mode	Panel button reset and terminal short-circuit reset
Operating Modes	C0: Stop Forward rotation Stop Reverse rotation.....; C1: Forward rotation Stop Reverse rotation Stop.....
Counting Function	1. When the cycle count is set to 0000, the C0 or C1 program cycles indefinitely. 2. When the cycle count is set to A (A = any value between 1-9999), one cycle (C0: Stop Forward Stop Reverse / C1: Forward Stop Reverse Stop) counts as 1; cycling stops when A is reached, and the "count value" is displayed; press the "B" key to restart.
Memory Function	Power-off data retention: 10 years
Contact Capacity	3A AC250V (resistive load) (usage category AC-15)
Ambient Temperature	-5℃~+40℃
Pollution Degree	Class 3
Rated Conventional Enclosed Current Ith	5A
Rated Insulation Voltage Ui	250V
Rated Impulse Withstand Voltage Uimp	4KV

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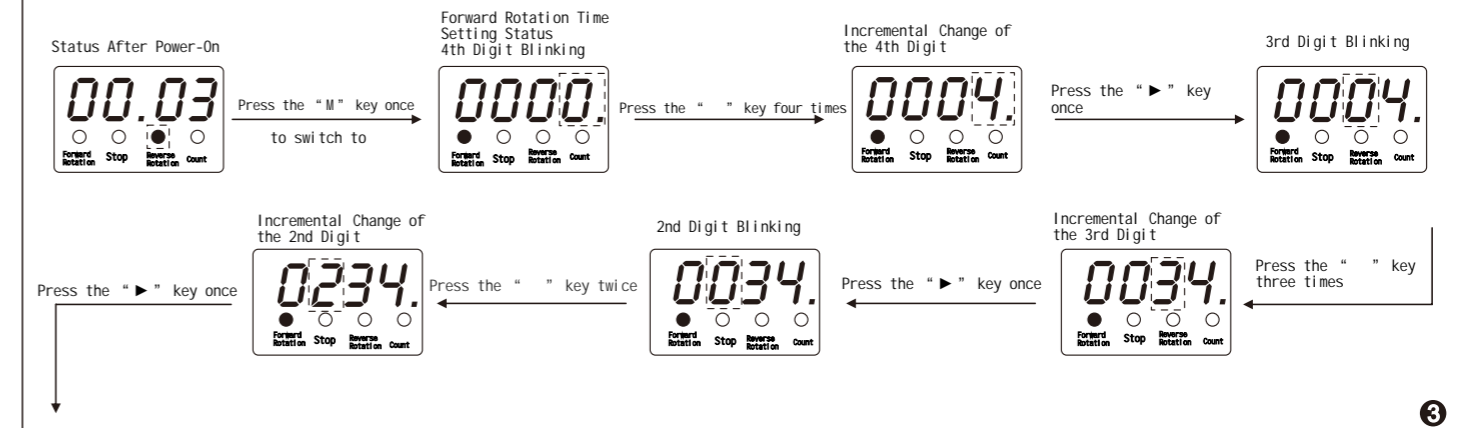
## V. Panel Description



## VI. Operating Instructions

1. Follow the wiring diagram on the controller's cover, and refer to the circuit example in Section VIII to connect the product to the control circuit.

2. Parameter Setting: In parameter setting, users can configure parameters as needed. Since the product has a memory function, all parameters correspond to the last settings, and the parameters displayed after power-on are the setting status at the time of the last power failure. For example: Suppose the most recent settings are forward rotation 0000s, reverse rotation 00.0s; during the last power failure, the display showed 00.03s elapsed for reverse rotation. Take the following configuration as an example: set both forward and reverse rotation time to 12m34s, stop time to 5s, and cycle count to 10 times (countdown starts with forward rotation).

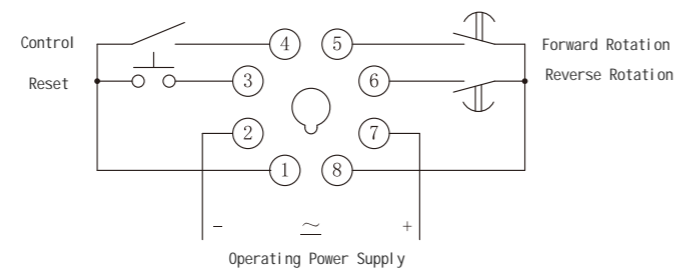


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Table (Continued)

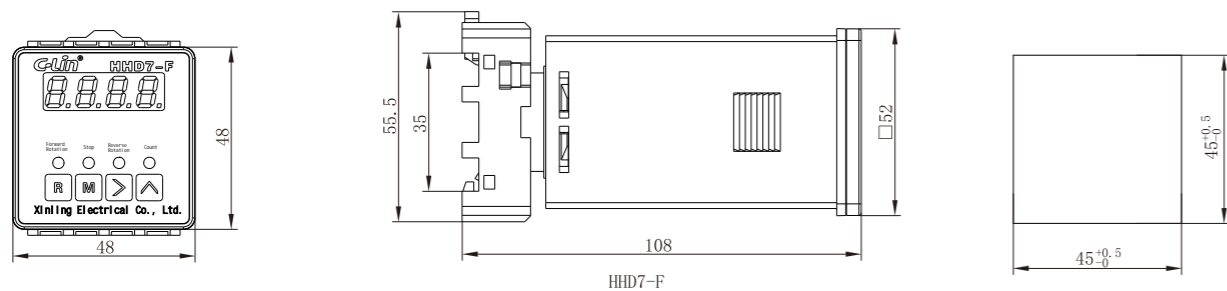
Model	HHD7-F
Altitude	≤2000m
Humidity	When the maximum temperature at the installation site is 40°C, the relative humidity of air shall not exceed 50%. Higher relative humidity is permissible at lower temperatures (e.g., up to 90% at 20°C). Special measures must be taken to prevent condensation caused by occasional temperature fluctuations.
Mounting Method	Panel mounting, device mounting, 35mm DIN rail mounting

## III. Wiring Diagram

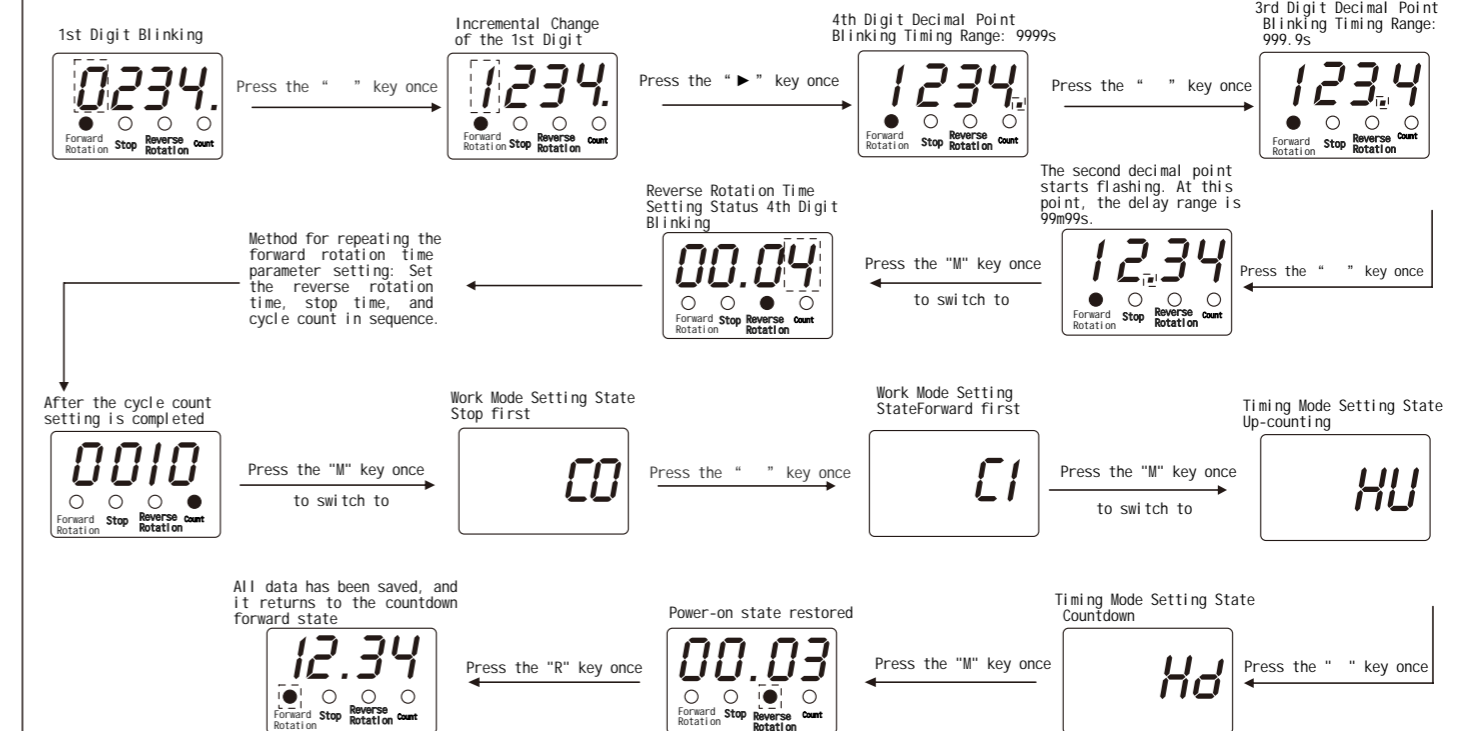


HHD7-F

## IV. Outline and Mounting Hole Dimension Drawing



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3. The product will start timing only after the control terminal is connected.
4. When the control terminal is connected and the cycle count is set to 0000, the product will perform permanent cycle delay according to the program:  
C0: Stop Forward Stop Reverse ...  
C1: Forward Stop Reverse Stop ...
5. When the cycle count is set to A (A = any value between 1 and 9999), the program (C0: Stop Forward Stop Reverse; or C1: Forward Stop Reverse Stop) counts as one number per cycle. When the count reaches the set value A, the cycle stops, and the "count number" is displayed. The count indicator stays lit (other lights turn off). If counting is in progress, the count light blinks once every 0.5 seconds during operation. Press the "R" key to restart.
6. Press the "M" key to view set parameters during timing — this will not interfere with the timing process.
7. Press the " " key once during timing to display the remaining cycle count (preset number minus completed cycle count), and the count indicator lights up (if the cycle count is set to 0000, "8800" is displayed). Press the " " key again to resume timing, and the count indicator turns off.
8. When neither the control terminal nor the reset terminal is closed, press the "R" key in the non-setting state to return to C0 (Stop state) or C1 (Forward state).
9. To change system setting parameters, press the "R" key first — only then will timing proceed with the newly set parameters.

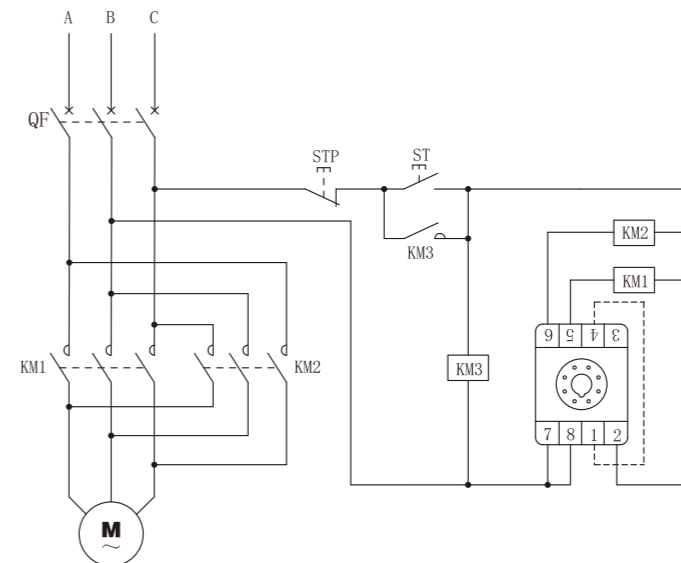
## VII. Installation Methods

**Note:** The main circuit power supply must be turned off before installation or disassembly.

1. Panel-mounted installation: (1) (2) (3) (4)
2. Unit-mounted installation: (1) (5) (6) (7)
3. DIN rail-mounted installation: (1) (8) (9) (10)

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## VIII. Application Circuit Example



The function of the controller in the diagram is as follows: Close QF and press the start button ST, the controller energizes, and KM3 energizes and self-locks at the same time; the motor does not start at this moment. After the controller goes through the preset stop time, KM1 energizes and the motor starts forward; after the set forward operation time, KM1 de-energizes and the motor stops; after the set stop time, KM2 energizes and the motor starts in reverse; after the set reverse operation time, KM2 de-energizes and the motor stops; after the set stop time, KM1 energizes and the motor starts forward... and so on in a repeated cycle. When STP is pressed, the controller de-energizes, KM1, KM2 and KM3 all de-energize, and the motor stops running.

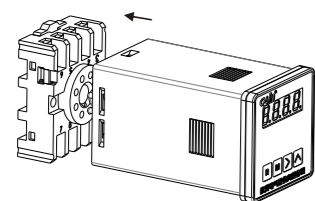
**Note:** The voltage of the controller in the diagram is AC380V; KM1, KM2 and KM3 are AC contactors, and their rated coil voltage is AC380V.

## IX. Ordering Instructions

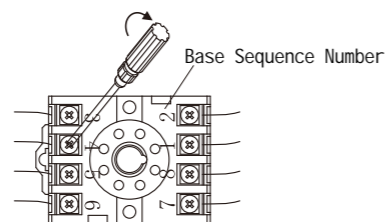
Please specify the product model, voltage class, and quantity. If there are special requirements, they should be noted separately.

**Example:** HHD7-F AC380V 100 units.

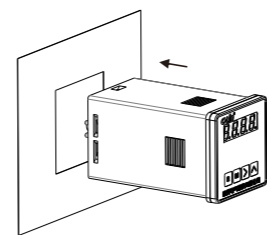
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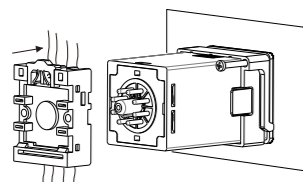
(1) Remove the base



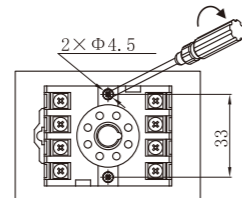
(2) Connect the wires according to the base numbering, then tighten the wiring screws



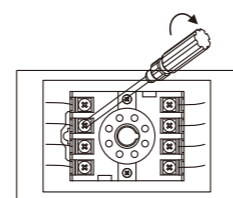
(3) Insert the controller into the panel



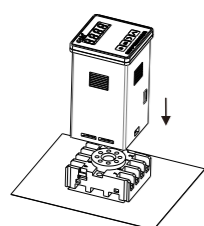
(4) Attach the base



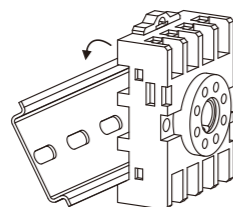
(5) Tighten the mounting screws



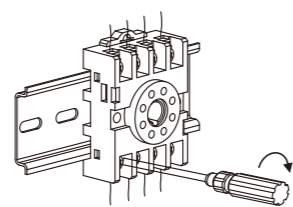
(6) Connect the wires according to the base numbering, then tighten the wiring screws



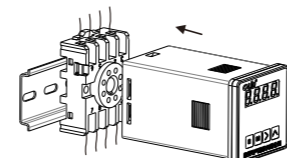
(7) Attach the controller



(8) Clip the base onto the DIN rail

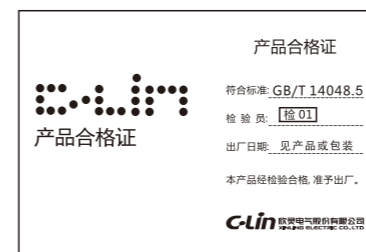


(9) Connect the wires according to the base numbering, then tighten the wiring screws



(10) Attach the controller

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**C-Lin**

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使用说明书  
Products Instructions

**HHD7-F**

Forward and Reverse Controller

Thank you very much for using C-Lin brand controller. Please read the user manual before using the product!

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