产品合格证

C-Lin

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 ELECTRICAL CO.,LTD

C-Lin®

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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

HHS16F

Multi - channel Time Relay

Thank you very much for using C-Lin brand time relays. Please read the instruction manual before using the product!

01A116Q0

Ⅰ.Overview

The HHS16F Programmable Multi - channel Time Relay (hereinafter referred to as "the relay") incorporates eight - channel timers. It can be widely applied in industries including packaging, printing, pharmaceuticals, food, textiles, papermaking, ceramics, petroleum, chemicals, and metallurgy, serving as a time - delay component in industrial control circuits to replace PLCs. It boasts features such as configurable multiple operating modes, a wide time - delay range, advanced manufacturing processes, high technological content, strong anti - interference capability, and high timing precision.

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

Ⅱ.Main Technical Parameters

1.Working Power Supply (Control Supply Voltage): AC 220V, 50Hz. The allowable voltage fluctuation range is (85%～110%) of Ue.

2.Operating Modes: “0” denotes power - on delay (only one time segment T1);

“1” denotes release delay (only one time segment T1);

“2” denotes infinite - cycle delay with prior action (two time segments: T1, T2);

“3” denotes infinite - cycle delay with prior inaction (two time segments: T1, T2);

“4” denotes finite - cycle delay with prior action (two time segments: T1, T2);

“5” denotes finite - cycle delay with prior inaction (two time segments: T1, T2).

3.Time - delay Range: 0.01s～9999h.

4.Cycle Count: 1～9999 cycles.

5.Adjustable Time Base: 0 stands for 0.01s, 1 for 0.1s, 2 for 1s, 3 for 1 minute (1m), and 4 for 1 hour (1h).

1.For single - phase load: If the resistive current of the load is ≤ 3A or the inductive current is ≤ 0.5A, the relay can directly control. Wiring reference example 1: If the resistive current of the load > 3A or the inductive current > 0.5A, the relay expands capacity through an AC contactor. Wiring reference example 2. For three - phase load: When the power supply of the AC contactor and the relay is AC380V, wiring reference example 3. When the power supply of the AC contactor and the relay is AC220V, wiring reference example 4.

2.The function of the example relay is as follows: When the power supply is connected, the load or KM (AC contactor) is energized. When the delay reaches the preset value, the load or KM (AC contactor) is de - energized.

Note 1: The load can be a street lamp or a bulb, and can be directly connected to the two wires of the street lamp or bulb port (as shown in Example 1).

Note 2: KM is the coil of the AC contactor. Terminals A1 and A2 can be wired according to Example 2, Example 3, and Example 4.

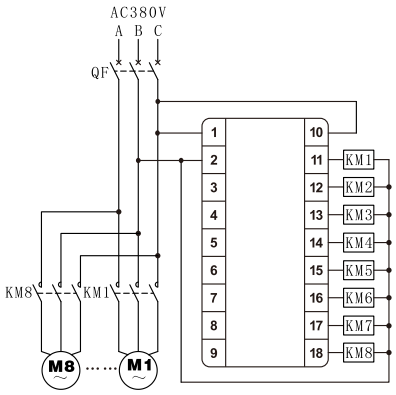
Note 3: The working power supply of the relay and KM in Example 3 is both AC380V. Pay attention to the voltage level of the selected product.

X.Ordering Information

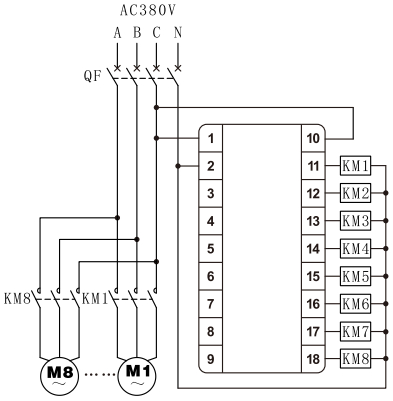
It is necessary to specify the product model, voltage level, and quantity. If there are special requirements, they should be specified additionally.

For example: HHS16F AC220V, 100 pieces.

Example 3:



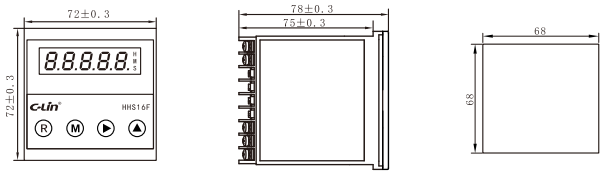
Example 4:



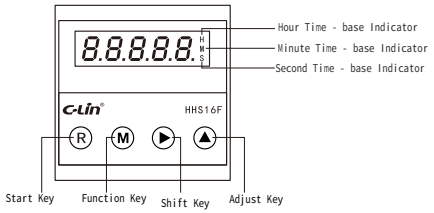
6. Operating Start Points："0" indicates the reset moment.
"n1" indicates the moment when the first timing of the T1 segment for the nth (n = 1～7) channel is completed.
"n2" indicates the moment when the first timing of the T2 segment for the nth (n = 1～7) channel is completed.

7. Contact Quantity：Eight groups of normally - open contacts.
8. Contact Capacity：Single - circuit: 3A AC250V (resistive load);Total capacity: Not exceeding 10A AC250V (resistive load).
9. Ambient Temperature：-5℃ ～ 40℃
10. Altitude：Not exceeding 2000m.
11. Humidity：When the maximum temperature at the installation site is 40℃, the relative humidity of air shall not exceed 50%. At lower temperatures, a higher relative humidity is allowable (e.g., up to 90% at 20℃). Special measures shall be taken for condensation occasionally caused by temperature changes.12. 12.12.Mounting Method：Panel - mounted.
13. Pollution Degree：Class 3.
14. Conventional Heating Current (Ith)：5A
15. Rated Insulation Voltage (Ui)：400V
16. Rated Impulse Withstand Voltage (Uimp)：2.5kV
17. Ue/Ie：For the usage category, the rated operating voltage Ue / rated operating current Ie:Usage category: AC - 15;Ue: AC250V, Ie: 3A.

III. Outline and Installation Dimensions (mm)

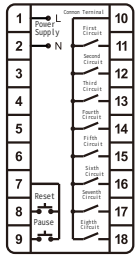


IV.Panel Description



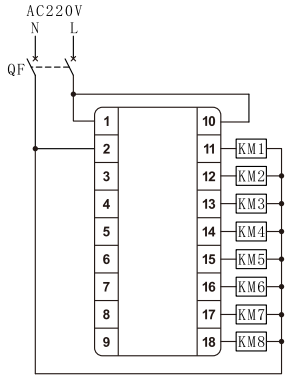
Start Key (R): Saves parameters and returns to the timing interface.
Function Key (M): Enters the parameter setting interface.
Shift Key (▶): Moves the position of the flashing digit.
Adjust Key (▲):a) Adjusts the flashing digit in an incrementing way;b) Views the timing duration of each channel.

V.Wiring Diagram

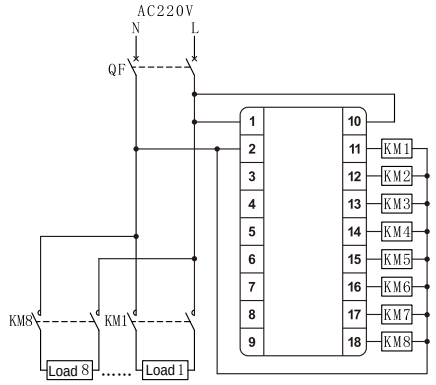


IX.Application Circuit Examples

Example 1:



Example 2:



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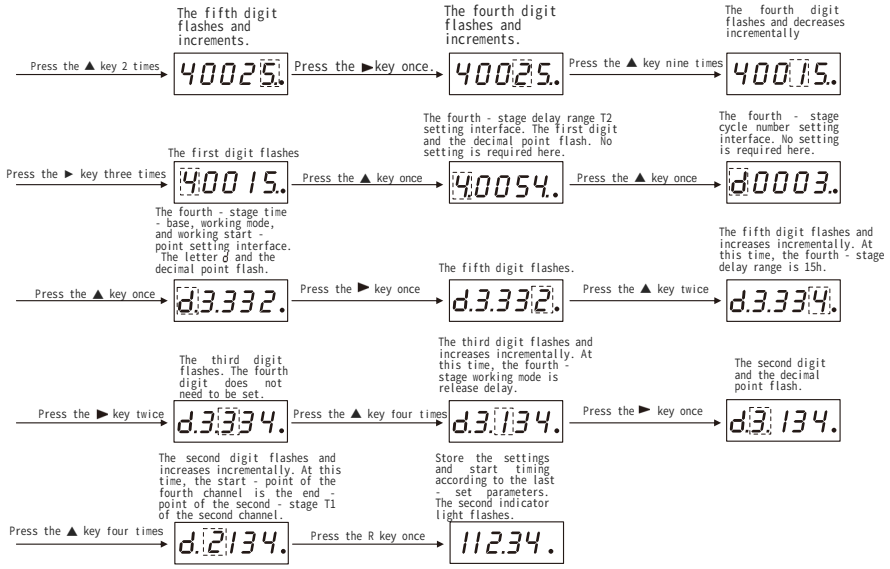
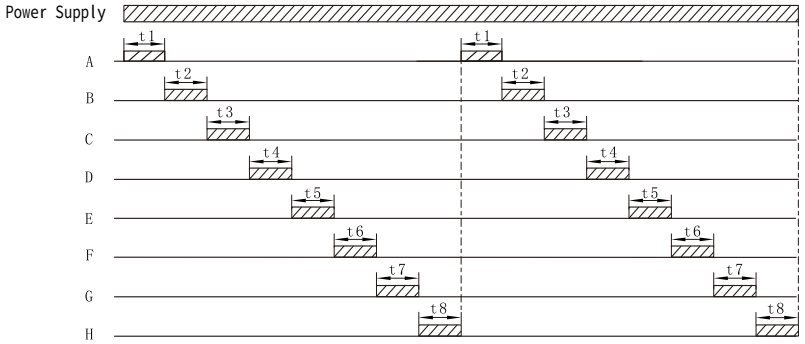


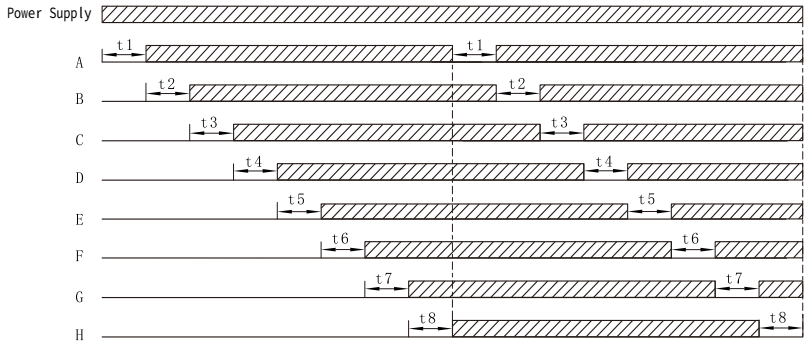
VI.Working Timing Diagrams

Since the working circuit, working mode, and starting point of this product can be set arbitrarily, while those of L and P modes are fixed, this instruction manual only uses the working timing diagrams of L and P modes as examples for illustration.

Timing Diagram of L Mode



Timing Diagram of P Mode



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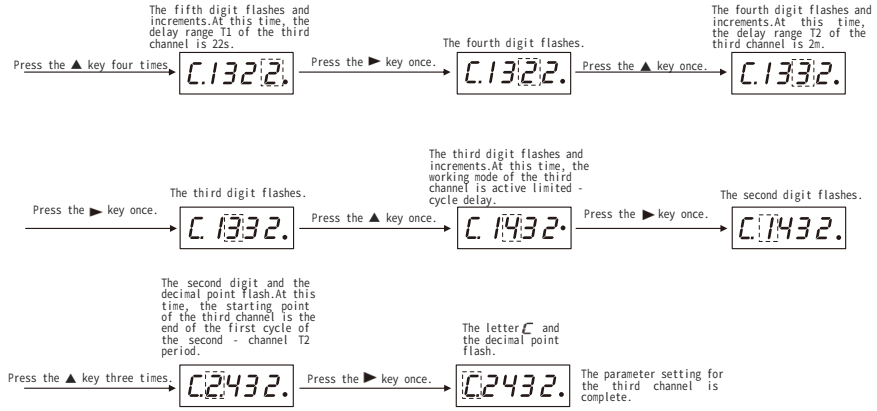
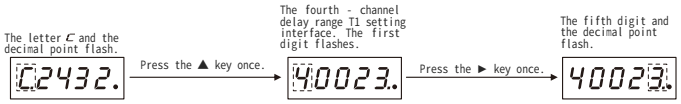


(5) Set the delay range, cycle number, time base, working mode, and starting point for the fourth channel



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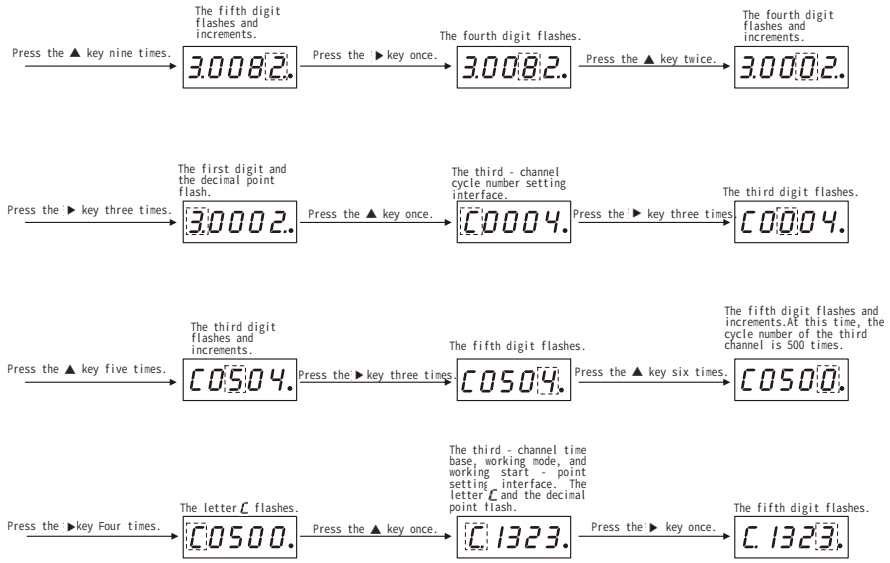
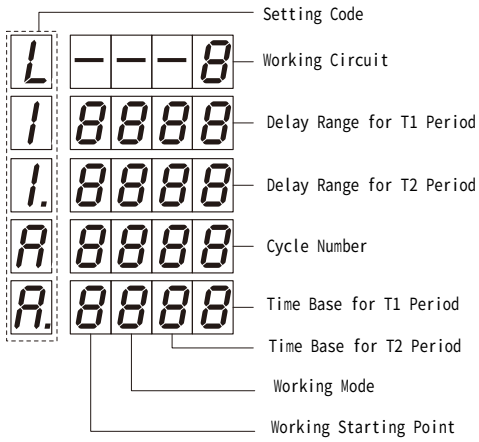


VII. Instructions for Use

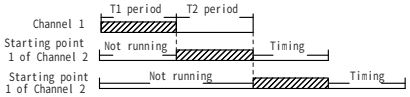
(1) Function Description



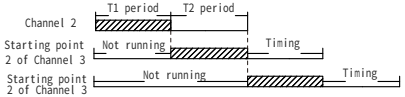
(2) Explanation of Work Starting Points (Taking the Work Mode of Each Channel with One - time Cycle of Pre - action as an Example)

Circuit 1: Always starts timing upon power - on or reset.

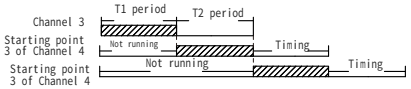
Circuit 2: Besides having the same starting condition as Circuit 1 (power - on or reset), it can also start timing when the first operation of either T1 or T2 of Circuit 1 is completed.



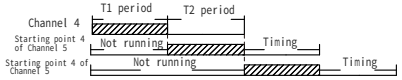
Circuit 3: In addition to sharing the starting conditions of Circuit 2, it can start timing when the first operation of either T1 or T2 of Circuit 2 is completed.



Circuit 4: Along with the starting conditions of Circuit 3, it can start timing when the first operation of either T1 or T2 of Circuit 3 is completed.



Circuit 5: With the starting conditions of Circuit 4, it can start timing when the first operation of either T1 or T2 of Circuit 4 is completed.



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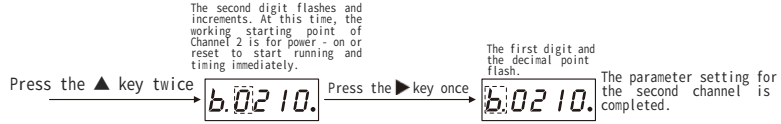
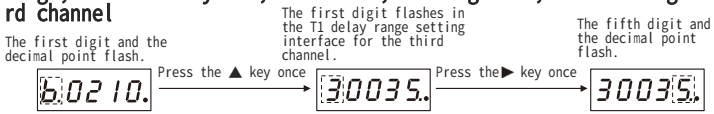
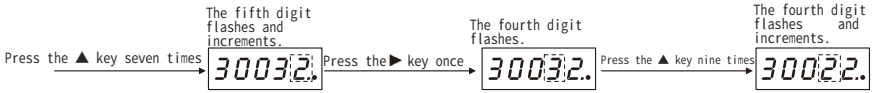
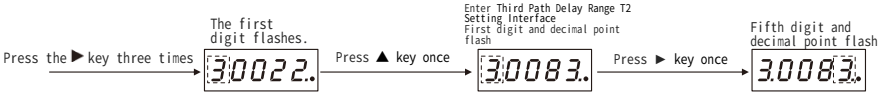


(4) Set the delay range, number of cycles, time base, working mode, and working starting point for the third channel







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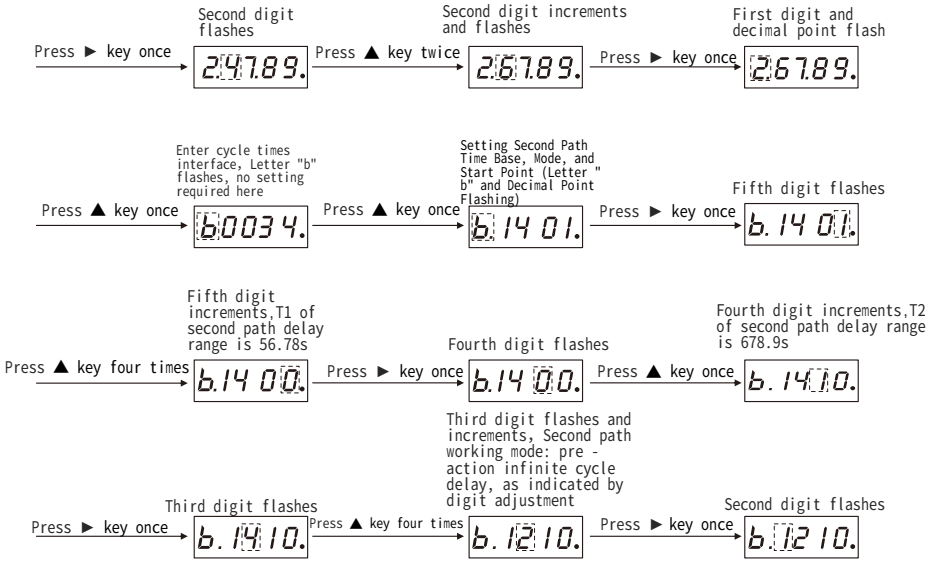
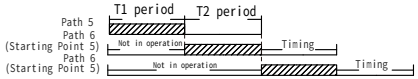
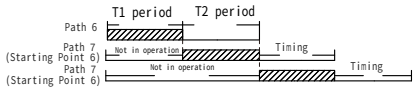


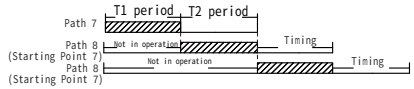
Path 6: Besides having the same starting point as Path 5, it can start timing at the moment when the first completion of T1 or T2 in Path 5 occurs.



Path 7: In addition to sharing the same starting point as Path 6, it can start timing at the moment when the first completion of T1 or T2 in Path 6 occurs.



Path 8: Apart from having the same starting point as Path 7, it can start timing at the moment when the first completion of T1 or T2 in Path 7 occurs.



Note:
Different working modes determine the actually selectable starting points. For example:Different working modes determine the actually selectable starting points. For example:If Path 1 operates in mode 0 (power-on delay) (which only includes "1" (T1 period) and excludes "1." (T2 period)), the "1." option cannot be selected when setting starting points for other circuits.Similarly, if Paths 2 and 3 are not in cycle mode, Path 4 cannot use "2." or "3." as starting points.After modifying the working mode of any preceding circuit, recheck all circuit starting points to ensure compatibility.

(2) Parameter Settings

After power - on, the relay starts timing according to the parameters set last time, and the corresponding time - base indicator light blinks. At any time after power - on, press and hold the M key for 3 seconds to enter the loop setting interface. Press the ▲ key to set the desired loop, then press the ► key once to enter the T1 time - delay range setting interface for Route 1. Combine the ▲ and ► keys to set the T1 time - delay range, working mode, number of cycles, working start point, and time - base for Route 1 (see the function description in Article Seven for details). Set the time - delay range, working mode, number of cycles, working start point, and time - base for the required loops in turn following the setting method for Route 1.The time - delay range, working mode, time - base, and start point of each timer are independent. After the relay is started, the corresponding time - base indicator light blinks. In L and P modes, the digital tube displays the timing status of the current loop; in other modes, the digital tube automatically switches loops every 10 seconds and alternately displays the timing time of the next loop. Press the ▲ key to quickly query the timing time of the next loop. After the operation is completed, the digital tube displays "End".
The terminal block has reset and pause terminals. When the reset terminal is connected, all timing values are cleared to zero, and timing restarts from 0 immediately after disconnection; when the pause terminal is connected, all timing stops, and resumes when disconnected.

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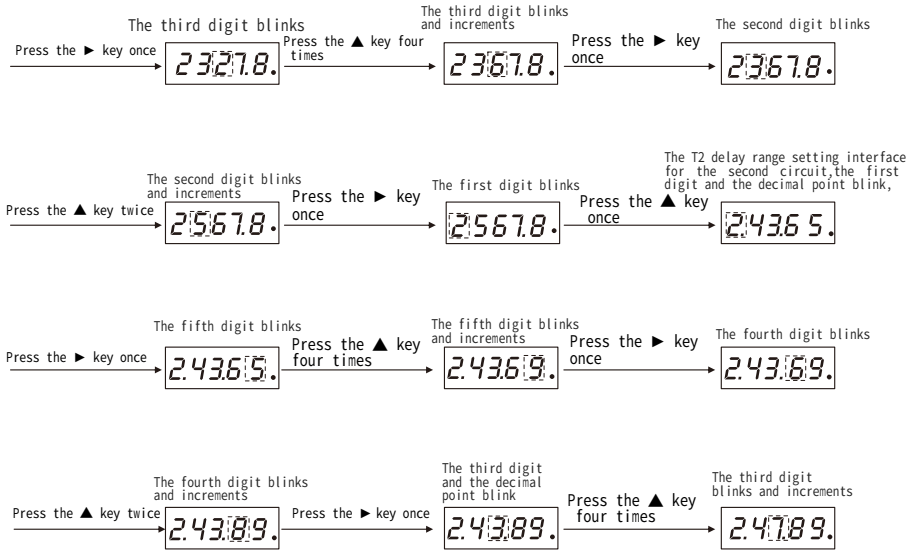

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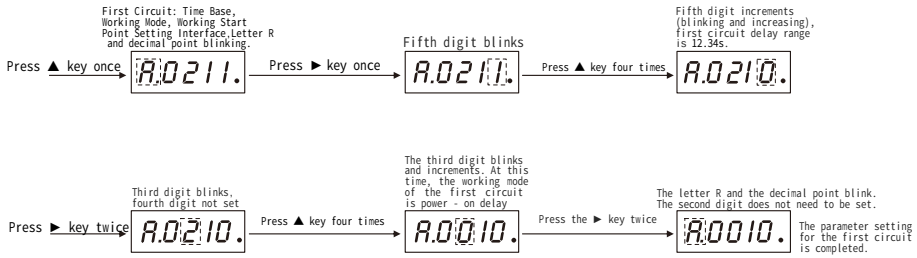
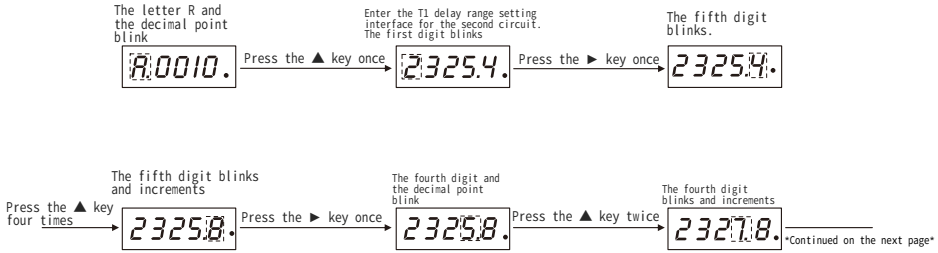


(3) Set the delay range, number of cycles, time base, working mode, and working starting point for the second circuit



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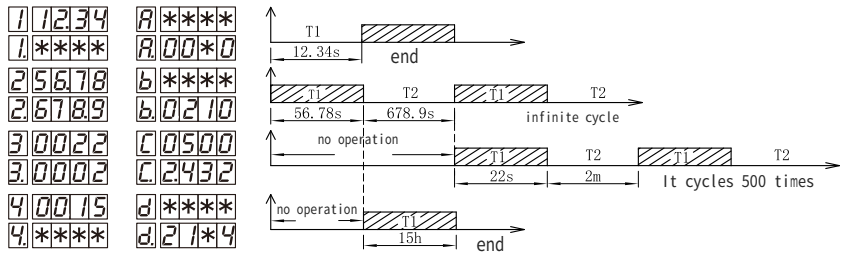
VIII.Application Examples

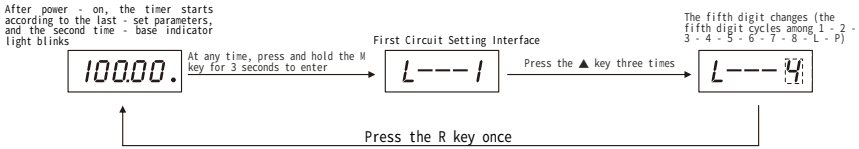
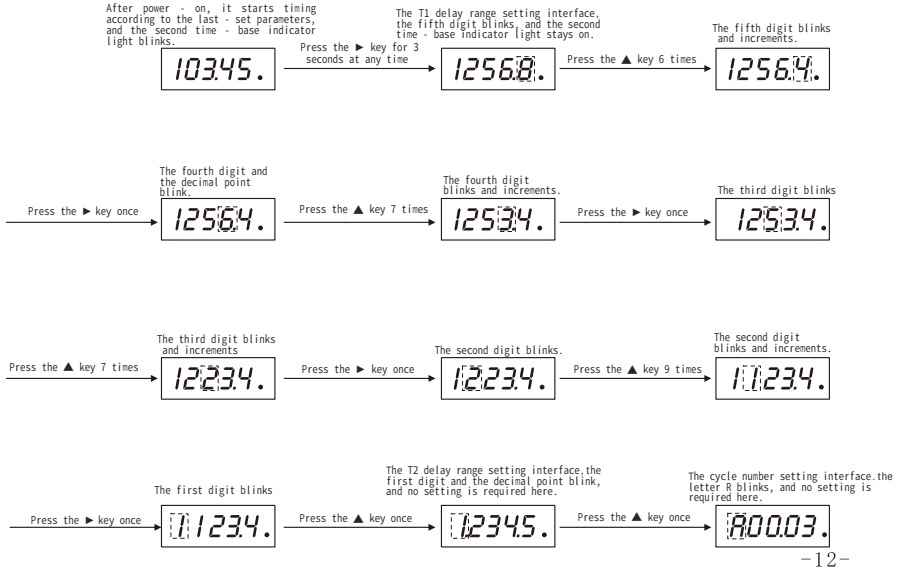
The working requirements of a certain control cabinet are as follows:Equipment Set 1 does not work immediately upon power - on, but starts working after a delay of 12.34 seconds.Equipment Set 2 starts working immediately upon power - on, stops after 56.78 seconds, and then resumes working after a delay of 678.9 seconds, repeating this cycle indefinitely.Equipment Set 3 does not work immediately upon power - on. It starts working as soon as Equipment Set 2 starts its second operation, stops after 22 seconds, and then resumes working after a delay of 2 minutes. This cycle repeats 500 times before stopping.Equipment Set 4 does not work immediately upon power - on. It starts working as soon as Equipment Set 2 finishes its first operation, and stops after a delay of 15 hours.

Circuit 1 (Equipment Set 1): Working mode is power - on delay (0), working time base is 0.01 s (0), and the working start point is to start running immediately upon power - on (0).
Circuit 2 (Equipment Set 2): Working mode is pre - action infinite - cycle delay (2), working time base T1 is 0.01 s (0), T2 is 0.1 s (1), and the working start point is to start running immediately upon power - on (0).
Circuit 3 (Equipment Set 3): Working mode is pre - action finite - cycle delay (4), working time base T1 is 1 s (2), T2 is 1 minute (3), number of cycles is 500, and the working start point is to start running after the first completion of the T2 period of Circuit 2 (2.).
Circuit 4 (Equipment Set 4): Working mode is release delay (1), working time base is 1 hour (4), and the working start point is to start running after the first completion of the T1 period of Circuit 2 (2).



Note: Items with “ * ” do not need parameter setting in this example and show the last - set values.

(1) Setting the Number of Circuits,taking the example where the previously set number of circuits is 1 and we need to set it to 4 circuit



(2) Setting the Delay Range, Cycle Count, Time Base, Working Mode, and Working Start Point for the First Circuit