



H5DA

MULTI-FUNCTION
DIGITAL COUNTER / TIMER
User's Manual

RESTRICTIONS ON USE

When using this product in applications that require particular safety or when using this product in important facilities, please pay attention to the safety of the overall system and equipment. Install fail-safe mechanisms, perform redundancy checks and periodic inspections and adopt other appropriate safety measures when it is necessary. This product is rated at Class II □.

SAFETY PRECAUTION

This manual uses the following symbols to ensure safe operation of this timer.



WARNING

Warnings are indicated when mishandling this product might result in death or serious injury to user.



CAUTION

Cautions are indicated when mishandling this product might result in minor injury to the user, or only physical damage to the timer.



WARNING

- Note this incorrect wiring of this product can damage it and lead to other hazards. Make sure the product has been correctly wired before turning the power ON.
- Before wiring, or removing / mounting the product, be sure to turn the power OFF. Failure to do so might cause electric shock.
- Do not touch electrically charged parts such as the power terminals. Doing so might cause electric shock.
- Do not disassemble the product. Doing so might cause electric shock or faulty operation.



CAUTION

- Use the product within the operating ranges recommended in the specification (temperature, humidity, voltage, shock, mounting direction, atmosphere and etc.). Failure to do so might cause fire or faulty operation.
- Firmly tighten the wires to the socket. Insufficient tightening of the wires to the socket might cause fire.

SPECIFICATIONS		NAMES AND FUNCTIONS OF FACEPLATE		
Operating voltage	AC/DC : 12~48V, AC/DC : 100~240V	LEDs COUNTER: Counting indicator TIMER: Timming indicator Out1, Out2: Control output 1, 2 indicator RESET: Reset indicator CP1, CP2: Signal input 1, 2 indicator Start: Start signal input indicator Gate: Gate signal input indicator K/P: Key protection indicator Set1, Set2: 1st, 2nd set value indicator Total: Total value indicator hr, min, sec: Time unit indicator key Reset the output, or save the set value then back to the operation mode		
Allowable operating voltage range	85 ~ 110% of rated operating voltage			Upper display Display present value or setup items
Rated frequency	50 / 60Hz			Lower display Display set value or parameters
Contact rating	250VAC 5A (Resistive load)			key Shift cursor or switch mode
Count speed	MAX 30, 1k, 5k or 10k cps			key Increment and decrement numeric values, and switch between Set1/Set2 display
Power consumption	Approx. 2.5VA			
Life	Mechanical : 5,000,000 times, Electrical : 100,000 times			
Ambient temperature	-10 ~ +50°C			
Ambient humidity	MAX 85% RH			
Weight	Approx. 118g			
SETTING PROCEDURE				
COUNTER OR TIMER'S VALUES RESET	SWITCH TO THE MODE SETTING STATUS	ON / OFF Key protect	SWITCH TO THE NEXT MODE	
POWER ON or	+ 3 Sec	+ + 3 Sec		
Counter:				
1.INPUT MODE	2.OUTPUT MODE	3.OUTPUT 2 TIME	4.OUTPUT 1 TIME	
1-1 UP 1-5 UP/DOWN C 1-2 DOWN 1-3 UP/DOWN A 1-4 UP/DOWN B	2-1 Mode N 2-5 Mode K 2-2 Mode F 2-6 Mode P 2-3 Mode C 2-7 Mode Q 2-4 Mode R 2-8 Mode A	3-1 0.01S 3-5 0.5S 3-9 10S 3-2 0.05S 3-6 1S 3-A 20S 3-3 0.1S 3-7 2S 3-4 0.2S 3-8 5S	4-1 Hold 4-5 0.2S 4-9 5S 4-2 0.01S 4-6 0.5S 4-A 10S 4-3 0.05S 4-7 1S 4-b 20S 4-4 0.1S 4-8 2S	
5.COUNT SPEED	6.MINIMUM RESET TIME	7.DECIMAL POINT	8.PRESCALE VALUE	
5-1 30 cps 5-2 1k cps 5-3 5k cps 5-4 10k cps	6-1 20mS 6-2 1mS	7-1 999999 7-2 99999.9 7-3 9999.99 7-4 999.999	8-1 00.001-99.999	
9.KEY PROTECTION LEVEL	10.POWER OFF MODE	11.NPN/PNP INPUT MODE	12.FUNCTION MODE	
9-1 Lock function key + 3Sec 9-2 Lock reset key 9-3 Lock preset value key 9-4 Lock all key	10-1 Power off reset 10-2 Power off memory	11-1 nPn 11-2 PnP	12-1 Counter 12-2 Timer	
Timer:				
1.TIME RANGE	2.UP / DOWN MODE	3.OUTPUT MODE		
1-1 999.999S 1-5 99M59.99S 1-9 99H99M59S 1-2 9999.99S 1-6 999M59.9S 1-A 9999H59M 1-3 99999.9S 1-7 99999.9M 1-b 99999.9H 1-4 999999S 1-8 999999M 1-c 999999H	2-1 Count up 2-2 Count down	3-1 Mode A 3-5 Mode B 3-9 Mode D 3-2 Mode A1 3-6 Mode B1 3-A Mode E 3-3 Mode A2 3-7 Mode B2 3-b Mode F 3-4 Mode A3 3-8 Mode C		
4.OUTPUT TIME	5.INPUT SIGNAL TIME	6.KEY PROTECTION LEVEL	7.OUTPUT CONTACT (Only for H5DA-11 and H5DA-11D)	
4-1 Hold 4-5 5S 4-2 0.1S 4-6 10S 4-3 0.5S 4-7 15S 4-4 1S 4-8 20S	5-1 20 mS 5-2 1 mS	6-1 Lock function key + 3Sec 6-2 Lock reset key 6-3 Lock preset value key 6-4 Lock all key	7-1 2C 7-2 1A1C	
8.NPN/PNP INPUT MODE	9.FUNCTION MODE			
8-1 nPn 8-2 PnP	9-1 Counter 9-2 Timer			

TIMING CHART(COUNTER)

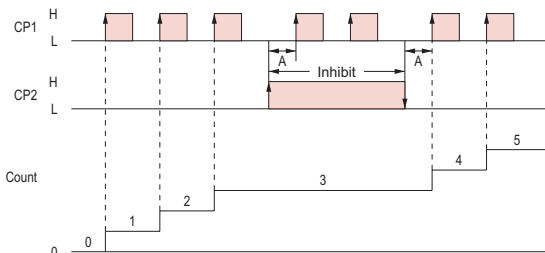
Input Modes and Count Value

Please note: 1. "A" indicates minimum signal width; "B" indicates 1/2 of minimum signal width. Signals may not be counted if the minimums for A and B are not met.

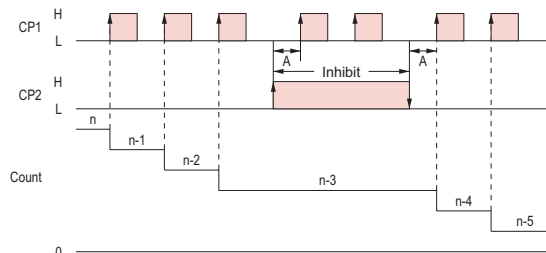
2. H and L

Signal	No-voltage input	Voltage input
H	Short circuit	4.5 ~ 30 VDC
L	Open circuit	0 ~ 2 VDC

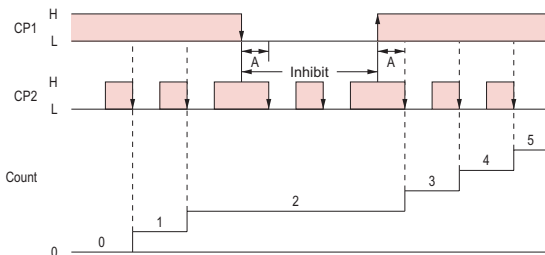
Up (increment) mode - Count at rising edge



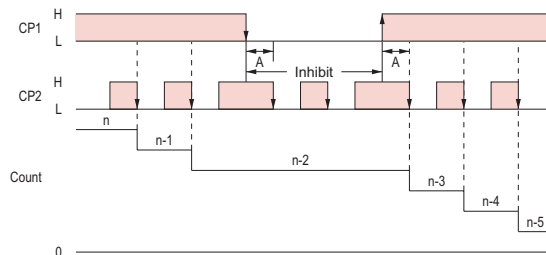
Down (decrement) mode - Count at rising edge



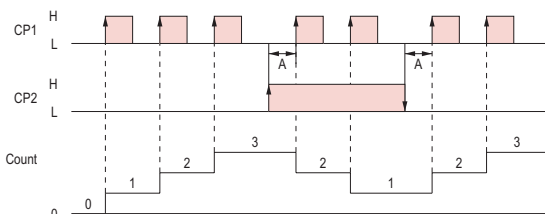
Up (increment) mode - Count at falling edge



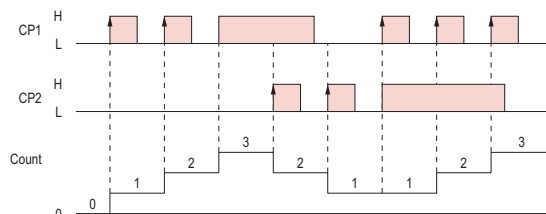
Down (decrement) mode - Count at falling edge



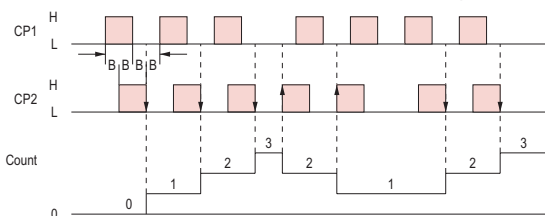
Up/Down A Command input mode



Up/Down B Individual input mode



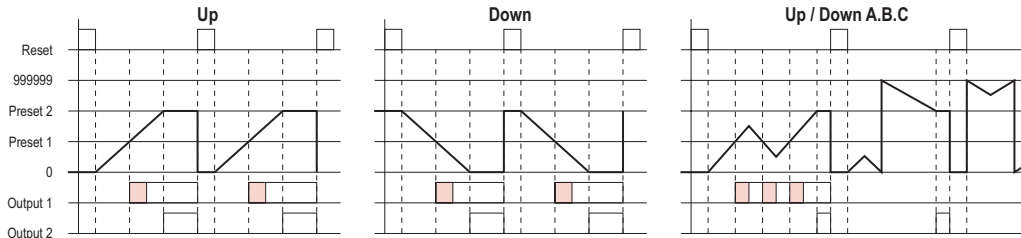
Up/Down C Phase difference input mode (See note 1.)



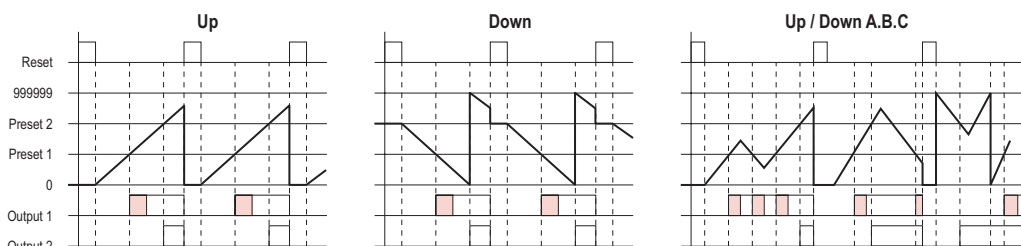
Note 1. Set the same counting speed for CP1 and CP2 when in Up/Down C mode.

Output : One-shot output from Output 1, Self-holding output, One-shot output from Output 2, Self-holding output

Mode N Output and present value display are maintained until reset.



Mode F Present value display runs continuously. Outputs are maintained until reset.



CONNECTION

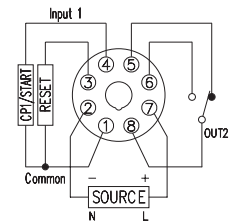
N type(Surface Mounting):
Use only P2CF-08(8-pin), PF085A(8-pin) or PF113A(11-pin) Socket

Y type(Flush Mounting):
Use only Y50 Frame & US-08(8-pin), P3G-08(8-pin) or P3G-11(11-pin) Socket

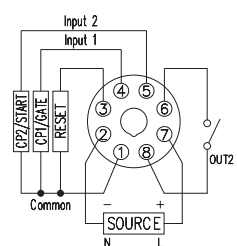
Note 1: For NPN input, select b-1 for Counter and 8-1 for Timer, Common = 0V

Note 2: For PNP input, select b-2 for Counter and 8-2 for Timer, Common = +V

H5DA-8

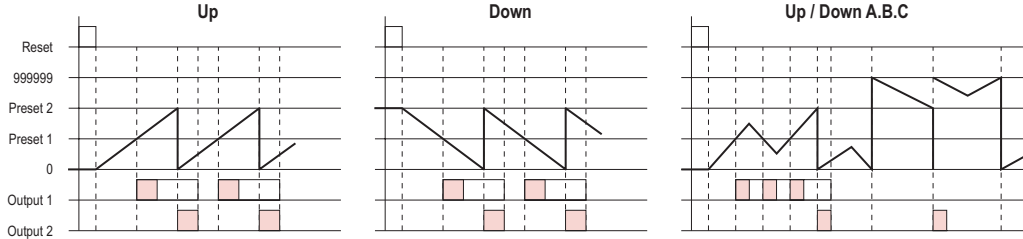


H5DA-8B

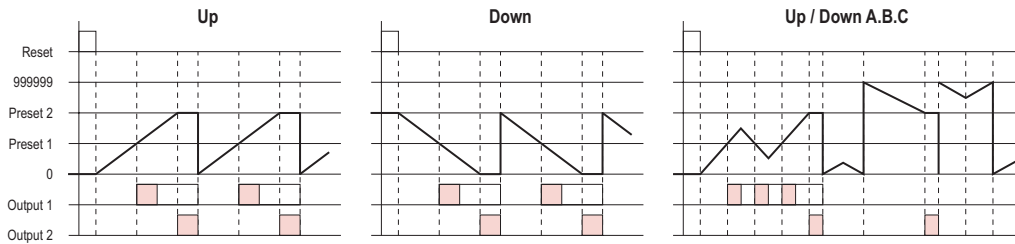


TIMING CHART(COUNTER)

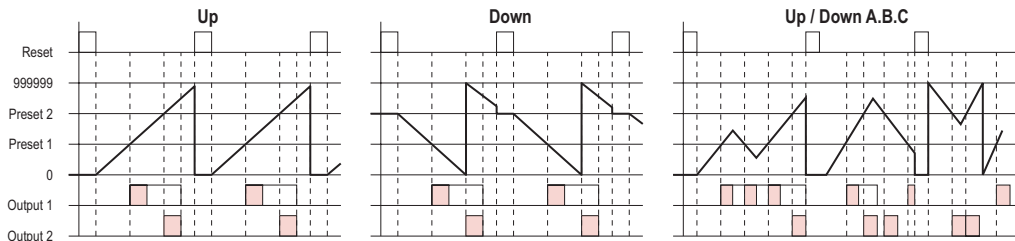
Mode C Present value is placed in reset start status as soon as count up is reached. The count up is not displayed. Outputs are 1-shot and operate repeatedly. Output 1 is self-holding, and goes off after expiration of the 1-shot period for Output 2. One -shot time periods for Output 1 and 2 are independent.



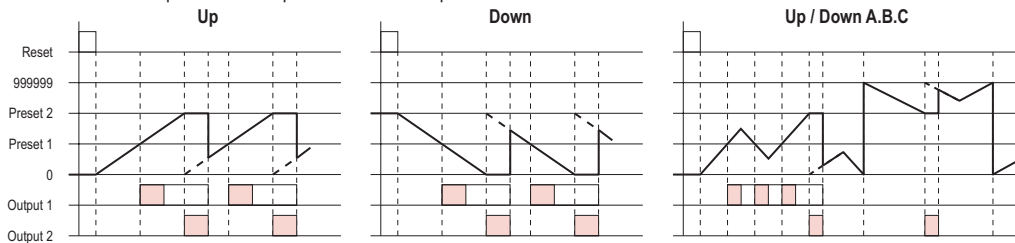
Mode R Present value is placed in reset start status as soon as count up is reached. Outputs are 1-shot and operate repeatedly. Output 1 is self-holding, and goes off after expiration of the 1-shot period for Output 2. One -shot time periods for Output 1 and 2 are independent.



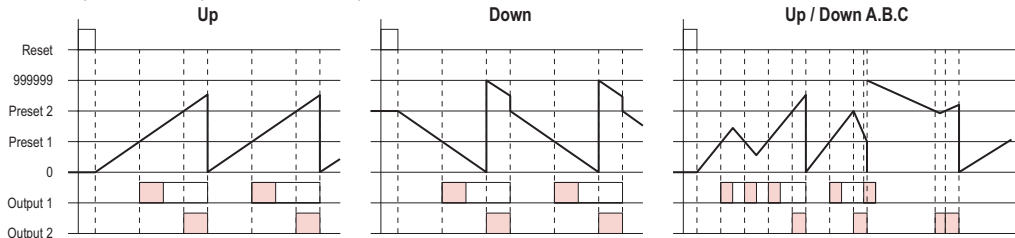
Mode K Present value runs continuously. Output 1 is self-holding, and goes off after expiration of the 1-shot period for Output 2. One-shot time periods for Output 1 and 2 are independent.



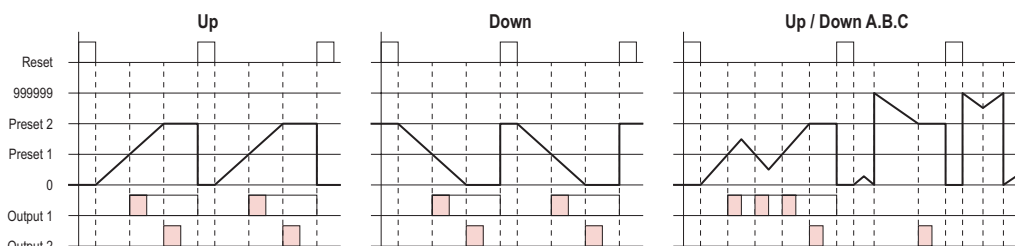
Mode P Present value display does not change during 1-shot time period, but reset start status is returned to as soon as count is reached. Outputs are 1-shot and operate repeatedly. Output 1 is self-holding, and goes off after expiration of the 1-shot period for Output 2. One -shot time periods for Output 1 and 2 are independent.



Mode Q Present value runs continuously through 1-shot time period and returns to reset start status immediately afterward. Outputs are 1-shot and operate repeatedly. Output 1 is self-holding, and goes off after expiration of the 1-shot period for Output 2. One -shot time periods for Output 1 and 2 are independent.

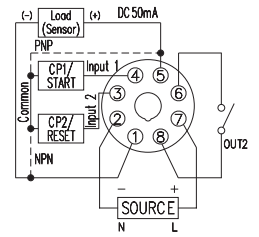


Mode A Present value and output 1 maintain status until reset. Output 1 and 2 operate independently.

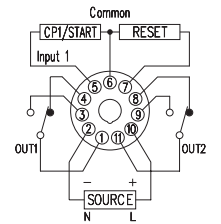


CONNECTION

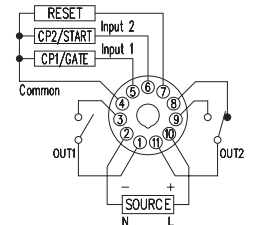
H5DA-8M



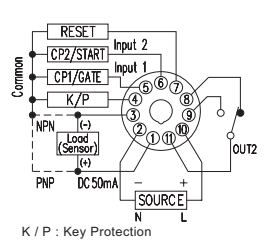
H5DA-11



H5DA-11D

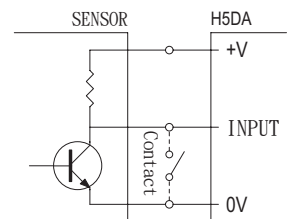


H5DA-11M

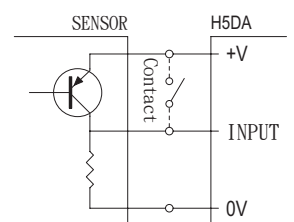


Schematic of H5DA-8M & H5DA-11M with sensor or contact.

NPN type



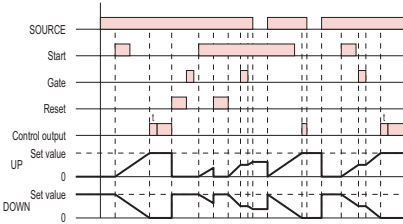
PNP type



TIMING CHART(TIMER)

A Signal ON delay 1

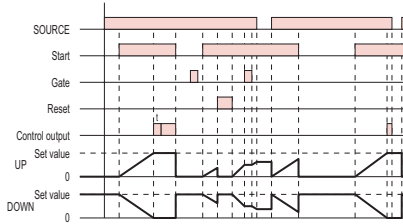
(Timer resets when power comes ON.)



Timing starts when the start signal goes ON. *Note1
The control output is controlled using a sustained or one-shot time period.

A-1 Signal ON delay 2

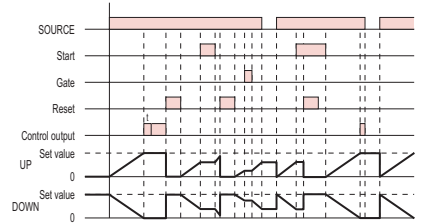
(Timer resets when power comes ON.)



Timing starts when the start signal goes ON, and is reset when the start signal goes OFF. *Note1
The control output is controlled using a sustained or one-shot time period.

A-2 Power ON delay 1

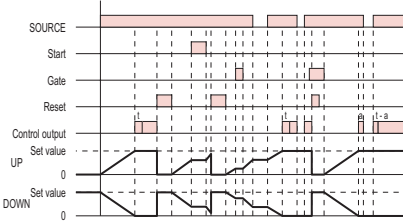
(Timer resets when power comes ON.)



Timing starts when the reset input goes OFF. The start signal disables the timing function (ie., same function as the gate input).
The control output is controlled using a sustained or one-shot time period.

A-3 Power ON delay 2

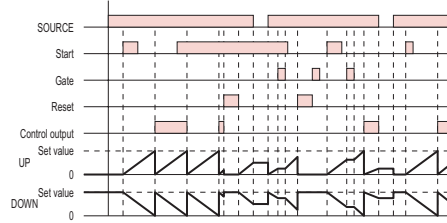
(Timer dose not reset when power comes ON.)



Timing starts when the reset input goes OFF. The start signal disables the timing function (ie., same function as the gate input).
The control output is controlled using a sustained or one-shot time period.

B Repeat cycle 1

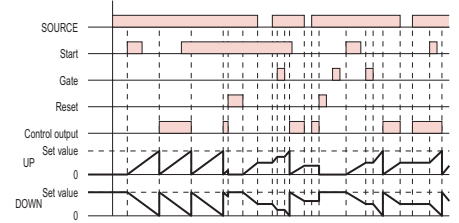
(Timer resets when power comes ON.)



Timing starts when the start signal goes ON. *Note1
The status of the control output is reversed when time is up (OFF at start).

B-1 Repeat cycle 2

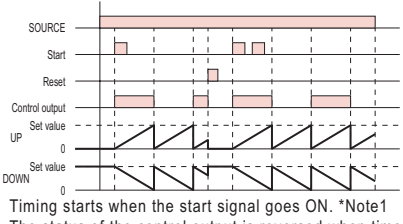
(Timer dose not reset when power comes ON.)



Timing starts when the start signal goes ON. *Note1
The status of the control output is reversed when time is up (OFF at start).

B-2 Repeat cycle ON start

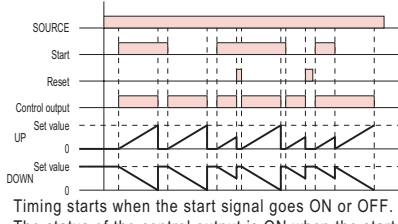
(Timer resets when power comes ON.)



Timing starts when the start signal goes ON. *Note1
The status of the control output is reversed when time is up (OFF at start).

C Signal ON/OFF delay

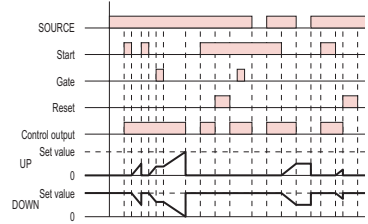
(Timer resets when power comes ON.)



Timing starts when the start signal goes ON or OFF. The status of the control output is ON when the start signal goes ON or OFF.

D Signal OFF delay

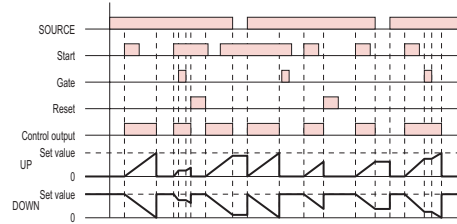
(Timer resets when power comes ON.)



The control output is ON when the start signal is ON (except when the power is OFF or the reset is ON).
The timer is reset when the time is up.

E Interval

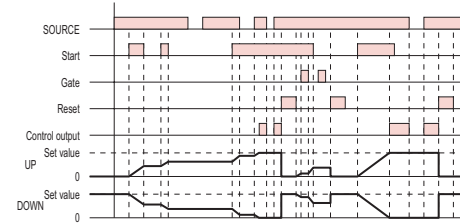
(Timer resets when power comes ON.)



Timing starts when the start signal comes ON. *Note1
The control output is reset when time is up.

F Cumulative

(Timer does not reset when power comes ON.)

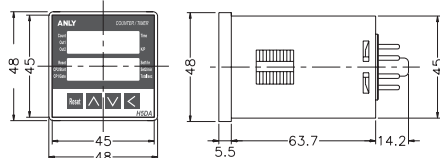


Start signal enables timing (timing is stopped when the start signal is OFF or when the power is OFF)
A sustained control output is used.

*Note1. While the start signal is ON, the timer starts when power comes ON or when the reset input goes OFF.

DIMENSION(mm)

H5DA



H5DA + Y-50 + US-08

