2-stage Digital Timer
H5CX-B

2-Stage Digital Timer with 6-digit Display and Forecast Output

- Wide time setting range from 0.01 s to 99,999.9 h (over 4 time ranges).
- 6-digit display enables cumulative or on-delay timing functions.
- NPN/PNP switchable DC-voltage input.
- Forecast output and 2-stage settings are ideal for maintenance applications.
- Programmable display color to alert any output status change.
- Supply voltage only available in 12-24 VDC.
- NEMA4/IP66 front.

Model Number Structure

■ Model Number Legend

H5CX-BWSD
1 2 3 4

1. **Type classifier**
   B: 6-digit display type
2. **Stage setting**
   W: 2-stage setting
3. **Output type**
   S: Transistor output
4. **Supply voltage**
   D: 12 to 24 VDC

Ordering Information

■ List of Models

Stock Note: Shaded models are normally stocked.

Output type	Supply voltage	6-digit display
		Screw terminals
Transistor	12 to 24 VDC	**H5CX-BWSD**

■ Accessories (Order Separately)

Stock Note: Shaded models are normally stocked.

Item	Model
Flush Mounting Adapter (See note.)	**Y92F-30**
Waterproof Packing (See note.)	**Y92S-29**
Hard Cover	**Y92A-48**
Soft Cover	**Y92A-48F1**

Note: Supplied with H5CX-BWSD.

Specifications

■ Ratings

Item	H5CX-BWSD
Classification	Digital timer
Rated supply voltage	12 to 24 VDC (permissible ripple: 20% (p-p) max.)
Operating voltage range	90% to 110% rated supply voltage
Power consumption (See note 1.)	Approx. 2.3 W at 12 VDC
Mounting method	Flush mounting
External connections	Screw terminals
Terminal screw tightening torque	0.5 N·m max.
Display (See note 2.)	7-segment, negative transmissive LCD; Present value: 9-mm-high characters, red Set value: 6-mm-high characters, green
Digits	6 digits
Time ranges	9999.99 s (0.01-s unit), 99 h 59 min 59 s (1-s unit), 99999.9 min (0.1-min unit), 99999.9 h (0.1-h unit)
Timer mode	Elapsed time (Up)
Input signals	Signal, reset, gate
Input method	No-voltage input/voltage input (switchable) No-voltage Input ON impedance: 1 kΩ max. (Leakage current: 5 to 20 mA when 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)
Signal, reset, gate	Minimum input signal width: 1 or 20 ms (selectable, same for all input)
Reset system	Power resets (only for A mode), external and manual reset
Power reset	Minimum power-opening time: 0.5 s (except for F-1 mode)
Sensor waiting time	250 ms max. (Control output is turned OFF and no input is accepted during sensor waiting time.)
Output modes	A, F-1
Control output	Transistor output: NPN open collector, 100 mA at 30 VDC max. residual voltage: 1.5 VDC max. (Approx. 1 V) Leakage current: 0.1 mA max.
	Output category according to EN60947-5-2 (DC-13; 30 V 100 mA)
Key protection	Yes
Memory backup	EEPROM (overwrites: 100,000 times min.) that can store data for 10 years min.
Ambient temperature	Operating: −10 to 55°C (−10 to 50°C if timers are mounted side by side) (with no icing or condensation) Storage: −25 to 65°C (with no icing or condensation)
Ambient humidity	25% to 85%
Case color	Black (N1.5)
Attachments	Waterproof packing, flush mounting adapter, unit label

Note: 1. Inrush current will flow for a short time when the power supply is turned ON. Refer to *Inrush Current (Reference Values)* on page 3.

2. The display is lit only when the power is ON.

■ Characteristics

Item	H5CX-BWSD
Accuracy of operating time and setting error (including temperature and voltage influences) (See note 1.)	Power-ON start: ±0.02% ±0.05 s max. Rated against set value Signal start (minimum pulse width of 20 ms): ±0.01% ±0.03 s max. Rated against set value Signal start (minimum pulse width of 1 ms): ±0.01% ±3 ms max. If the set value is within the sensor waiting time at startup the control output of the H5CX will not turn ON until the sensor waiting time passes.
Insulation resistance	100 MΩ min. (at 500 VDC) between current-carrying terminal and exposed non-current-carrying metal parts
Dielectric strength	2,000 VAC, 50/60 Hz for 1 min between current-carrying metal parts and non-current-carrying metal parts 1,000 VAC, 50/60 Hz for 1 min between control output, power supply, and input circuit
Impulse withstand voltage	1.0 kV (between power terminals) 1.5 kV (between current-carrying terminal and exposed non-current-carrying metal parts)
Noise immunity	±480 V (between power terminals) and ±600 V (between input terminals), square-wave noise by noise simulator (pulse width: 100 ns/1 μs, 1-ns rise)
Static immunity	Destruction: 15 kV Malfunction: 8 kV
Vibration resistance	Destruction: 10 to 55 Hz with 0.75-mm single amplitude each in three directions, four cycles each (8 min per cycle) Malfunction: 10 to 55 Hz with 0.35-mm single amplitude each in three directions, four cycles each (8 min per cycle)
Shock resistance	Destruction: 294 m/s^2 each in three directions Malfunction: 98 m/s^2 each in three directions
Approved safety standards (See note 2.)	UL508/Listing, UL50 Type 4X for indoor use (enclosure rating), CSA C22.2 No. 14, conforms to EN61010-1 (Pollution degree 2/overvoltage category II) Conforms to VDE0106/P100 (finger protection).
EMC	(EMI) EN61326 Emission Enclosure: EN55011 Group 1 class A (EMS) EN61326 Immunity ESD: EN61000-4-2: 4 kV contact discharge (level 2); 8 kV air discharge (level 3) Immunity RF-interference: EN61000-4-3: 10 V/m (Amplitude-modulated, 80 MHz to 1 GHz) (level 3); 10 V/m (Pulse-modulated, 900 MHz ±5 MHz) (level 3) Immunity Conducted Disturbance: EN61000-4-6: 10 V (0.15 to 80 MHz) (level 3) Immunity Burst: EN61000-4-4: 2 kV power-line (level 3); 1 kV I/O signal-line (level 4) Immunity Surge: EN61000-4-5: 1 kV line to lines (power and output lines) (level 3); 2 kV line to ground (power and output lines) (level 3)
Degree of protection	Panel surface: IP66 and NEMA4 (indoors), and UL Type 4X (indoors) (See note 2.)
Weight	Approx. 140 g

Note: 1. The values are based on the set value.

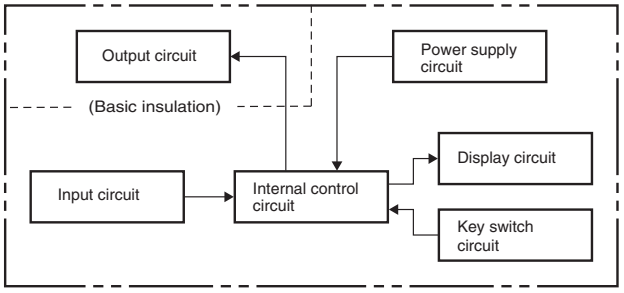
2. The Y92S-29 Waterproof Packing and Y92F-30 Flush Mounting Adapter are necessary to ensure IP66, NEMA4, and UL Type 4X waterproofing between the H5CX and installation panel.

■ Inrush Current (Reference Values)

Voltage	Applied voltage	Inrush current (peak value)	Time
12 to 24 VDC	26.4 VDC	6 A	1.2 ms

Connections

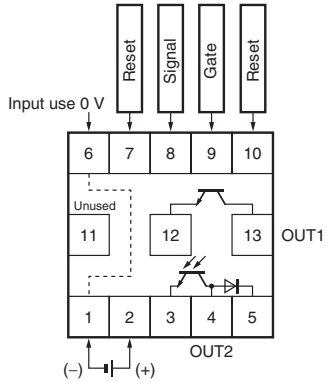
■ Block Diagram



■ I/O Functions

Inputs	**Start signal**		Starts timing.
	Reset		Resets present value. (The present value returns to 0.) Timing stops and control output turns OFF while reset input is ON. Reset indicator is lit while reset input is ON.
	Gate		Inhibits timer operation.
Outputs	**Forecast value setting**	**Control output (OUT2)**	Turns ON when the present value reaches the set value.
		Forecast output (OUT1)	Turns ON when the present value reaches the forecast value. The forecast value = set value − forecast set value
	Absolute value setting	**Control output 2 (OUT2)**	Turns ON when the present value reaches set value 2.
		Control output 1 (OUT1)	Turns ON when the present value reaches set value 1.

■ Terminal Arrangement



Note: 1. Do not connect unused terminals as relay terminals.

2. The power supply and input circuit are not isolated.

3. Terminals 1 and 6 are connected internally.

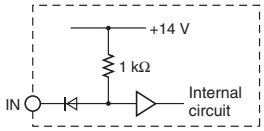
4. Terminals 7 and 10 have the same reset function. The same function will be performed whichever terminal is connected. Terminals 7 and 10 are not connected internally, however, so do not use them for cross-over wiring.

5. Recommended lead wires: AWG18 to AWG24 (cross-sectional area: 0.205 to 0.823 mm^2), single line or twisted-pair cable, made of copper or aluminum.

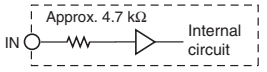
■ Input Circuits

Signal, Reset, and Gate Input

No-voltage Input (NPN Inputs)



Voltage Inputs (PNP Inputs)



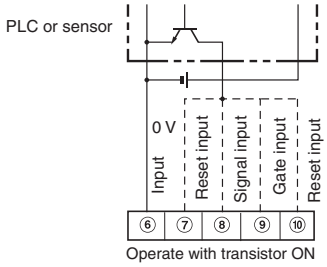
■ Input Connections

The inputs of the H5CX-B are no-voltage (short-circuit or open) inputs or voltage inputs.

No-voltage Inputs (NPN Inputs)

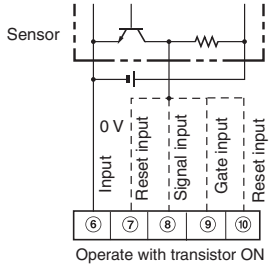
Open Collector

(Connection to NPN open collector output sensor)

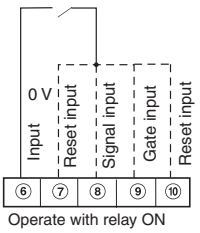


Voltage Output

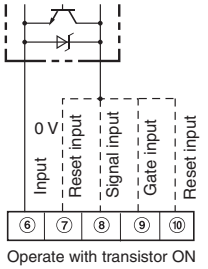
(Connection to a voltage output sensor)



Contact Input



DC Two-wire Sensor



Applicable Two-wire Sensor

Leakage current: 1.5 mA max.
Switching capacity: 5 mA min.
Residual voltage: 3.0 VDC max.
Operating voltage: 10 VDC

No-voltage Input Signal Levels

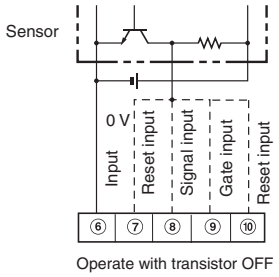
No-contact input	Short-circuit level Transistor ON Residual voltage: 3 V max. Impedance when ON: 1 kΩ max. (the leakage current is 5 to 20 mA when the impedance is 0 Ω)
	Open level Transistor OFF Impedance when OFF: 100 kΩ min.
Contact input	Use contact which can adequately switch 5 mA at 10 V

Note: The DC voltage must be 30 VDC max.

Voltage Inputs (PNP Inputs)

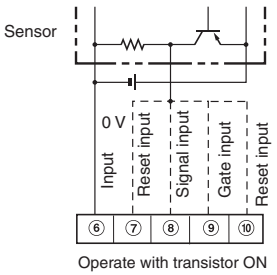
No-contact Input (NPN Transistor)

(Connection to NPN open collector output sensor)

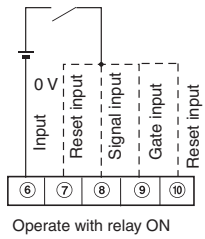


No-contact Input (PNP Transistor)

(Connection to PNP open collector output sensor)



Contact Input



Voltage Input Signal Levels

High level (Input ON): 4.5 to 30 VDC
Low level (Input OFF): 0 to 2 VDC
Input resistance: Approx. 4.7 kΩ

Note: The DC voltage must be 30 VDC max.

Nomenclature

Indicator

① Reset Indicator (orange)
Lit when the reset input or Reset Key is ON.

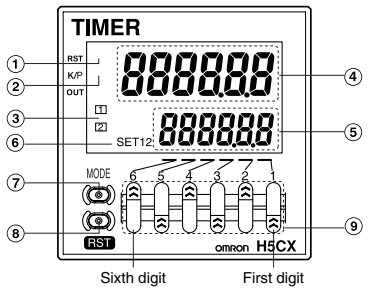
② Key Protection Indicator (orange)
Lit when the Key-protect Switch is ON.

③ Control Output Indicator (orange)
Forecast value setting:
Forecast output ON: 1 is lit
Control output ON: 2 is lit
Absolute value setting:
Control output 1 ON: 1 is lit
Control output 2 ON: 2 is lit

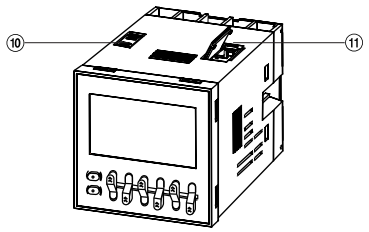
④ Present Value (red)
Character height: 9 mm
If the time range is 0.0 min or 0.0 h, the decimal point flashes to indicate timing operation.

⑤ Set Value (green)
Character height: 6 mm

⑥ Set Value 1, 2 Display (green)



Front View



Operation Key

⑦ Mode Key
(Changes setting items)

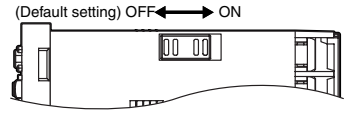
⑧ Reset Key
(Resets present value and output)

⑨ Up Keys 1 to 6

Switches

⑩ Key-protect Switch

When the Key-protect Switch is ON, key operations are prohibited according to the settings for DIP switch pins 6 to 8, thus preventing setting errors. The Key-protect Switch can be turned ON and OFF while the power is ON. The Key Protection Indicator is lit orange when the Key-protect Switch is ON.



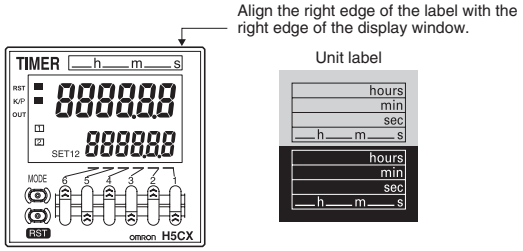
⑪ DIP Switch

Refer to *DIP Switch Settings* on page 45 for details on setting the DIP switch.

(Default setting)

■ Unit Label

The unit label is included with the Unit. Affix the unit label in the position shown in the following diagram to match the time range to be used.

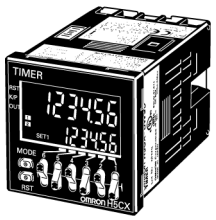


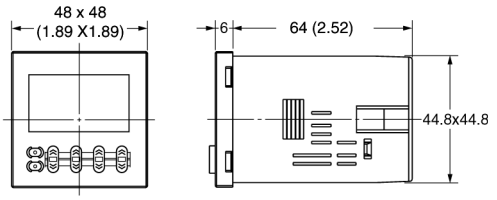
Dimensions

Unit: mm (inch)

■ Dimensions without Flush Mounting Adapter

H5CX-BWSD (Flush Mounting Models)

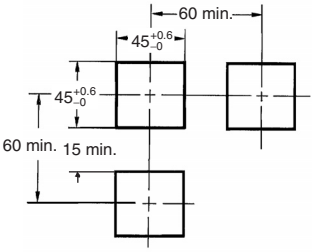




Note: M3.5 terminal screw (effective length: 6mm)

Panel Cutouts

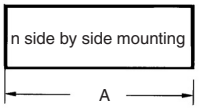
Panel cutouts areas shown below. (according to DIN43700).



Note 1. The mounting panel thickness should be 1 to 5 mm.

2. To allow easier operability, it is recommended that Adapters are mounted so that the gap between sides with hooks is at least 15 mm.

3. It is possible to mount timers side by side, but only in the direction without the hooks.



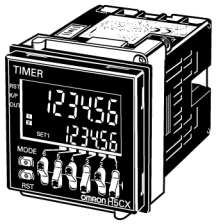
$A = (48n - 2.5)\ ^{+1}_{0}$

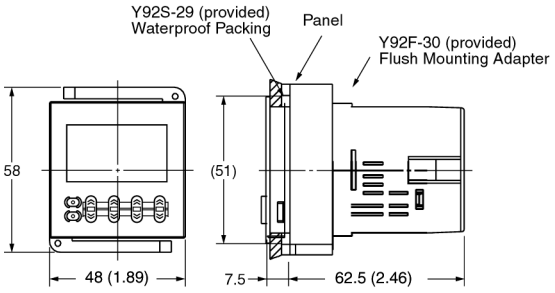
With Y92A-48F1 attached.
$A = \{48n - 2.5 + (n-1) \times 4\}\ ^{+1}_{0}$

With Y92A-48 attached.
$A = (51n - 5.5)\ ^{+1}_{0}$

■ Dimensions with Flush Mounting Adapter

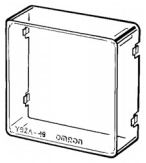
H5CX-BWSD (Provided with Adapter and Waterproof Packing)





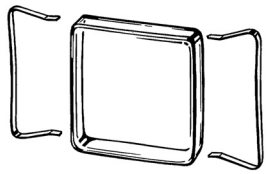
■ Accessories (Order Separately)

Hard Cover
Y92A-48



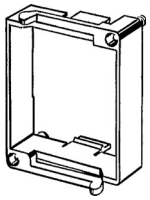
Note: 1. Depending on the operating environment, the condition of resin products may deteriorate, and may shrink or become harder. Therefore, it is recommended that resin products are replaced regularly.

Soft Cover
Y92A-48F1



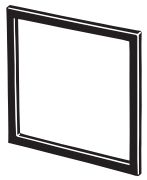
2. The H5CX's panel surface is water-resistive (conforming to IP66) and so even if drops of water penetrate the gaps between the keys, there will be no adverse effect on internal circuits. If, however, there is a possibility of oil being present on the operator's hands, use the Soft Cover. The Soft Cover ensures protection equivalent to IP54F against oil. Do not, however, use the H5CX in locations where it would come in direct contact with oil.

Flush Mounting Adapter (provided with H5CX-BWSD)
Y92F-30



Note: Order the Flush Mounting Adapter separately if it is lost or damaged.

Waterproof Packing (provided with H5CX-BWSD)
Y92S-29

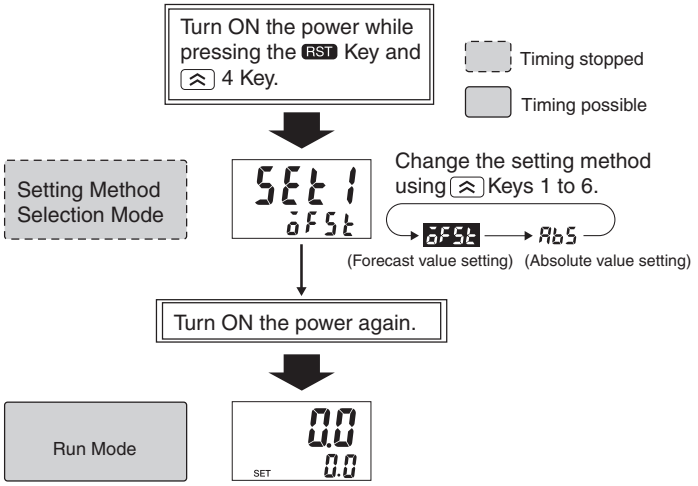


Note: Use waterproof packing to provide a level of water protection that complies with NEMA4, UL Type 4X, or IP66 standards. Order the waterproof packing separately if it is lost or damaged. Depending on the operating environment, the waterproof packing may deteriorate, contract, or harden and so regular replacement is recommended.

Operating Procedures

■ Setting Set Values

Set values can be set either as offset values (forecast value setting) or absolute values. Set values are factory-set to forecast value setting.



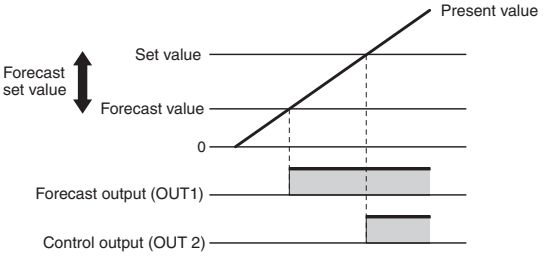
- Move to Setting Method Selection Mode by turning ON the power while pressing both the RST Key and ⌃ 4 Key at the same time.
- Select forecast value setting (oFSt) or absolute value setting (AbS) using the ⌃ Keys.
- When the power is turned ON again, the Timer will start with the selected setting method.

Note: 1. In Setting Method Selection Mode, outputs are OFF and the timer is stopped.

2. When the setting method is changed, the set values and present value are reset to 0, and outputs are OFF.

Forecast Value Setting

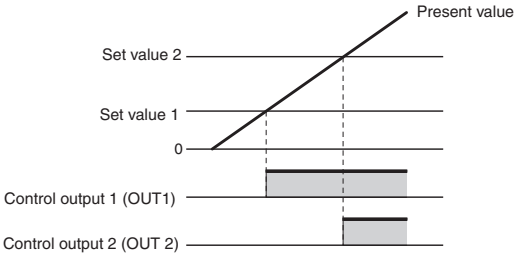
Example: F-1 Mode



- OUT1 (forecast output) turns ON when the present value reaches the forecast value.
  The forecast value = set value − forecast set value
  The forecast set value is used to set the deviation for the set value.
- OUT2 (control output) turns ON when the present value reaches the set value.
- If the forecast set value ≥ set value, OUT1 (forecast output) will turn ON as soon as timing starts.

Absolute Value Setting

Example: F-1 Mode



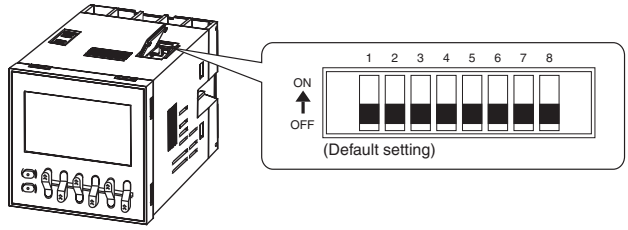
- OUT1 (control output 1) turns ON when the present value reaches set value 1.
- OUT2 (control output 2) turns ON when the present value reaches set value 2.

■ DIP Switch Settings

All functions are set using the DIP switch.

	Item	OFF	ON
1	Time range	Refer to the table on the right.	
2			
3	Output mode	F-1 mode	A mode
4	Input signal width	20 ms	1 ms
5	NPN/PNP input mode	NPN	PNP
6	Reset Key protection	Disabled	Enabled
7	Up Key protection	Disabled	Enabled
8	Mode Key protection	Disabled	Enabled

Pin 1	Pin 2	Time range
OFF	OFF	0.1 h to 99999.9 h
ON	OFF	0.01 s to 9999.99 s
OFF	ON	0 h 00 min 01 s to 99 h 59 min 59 s
ON	ON	0.1 min to 99999.9 min



Note: 1. All the pins are factory-set to OFF.

2. DIP switch settings are effective when the power is turned ON again. (Set the DIP switch before installation and power-up.)

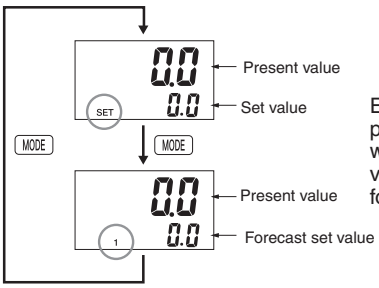
3. The shaded characters are the default settings.

■ Operation in Run Mode

Set each digit for the set value using the corresponding ⌃⌃ Keys.

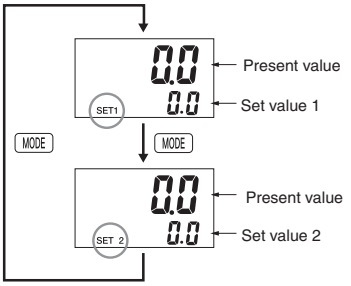
0 → 1 → 2 → 3 → 4 → 5 → 6 → 7 → 8 → 9

Forecast Value Setting



Each time the MODE Key is pressed, the sub-display will switch between the set value ("SET" is lit) and the forecast set value ("1" is lit).

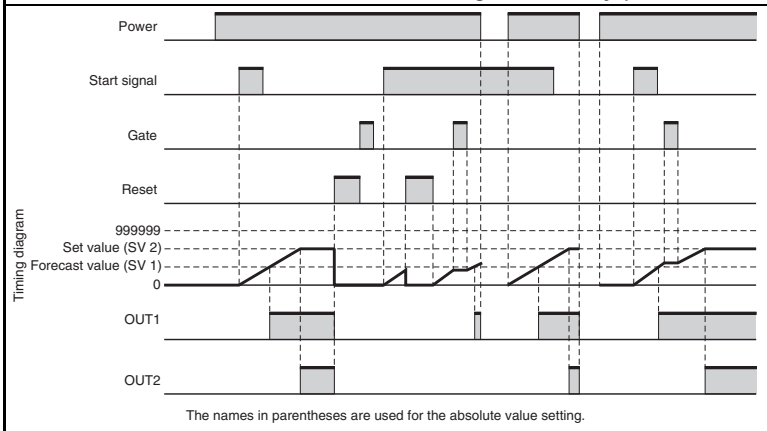
Absolute Value Setting



Each time the MODE Key is pressed, the sub-display will switch between set value 1 ("SET 1" is lit) and set value 2 ("SET 2" is lit).

■ Timing Charts

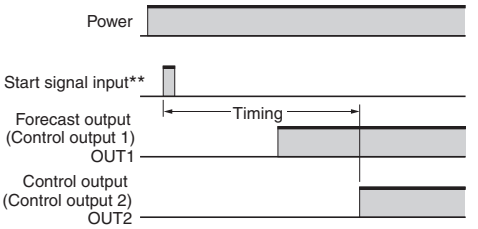
A Mode: Signal ON delay (Timer resets when power comes ON.)



The names in parentheses are used for the absolute value setting.

- Timing starts when the start signal turns ON.
- While the start signal is ON, the timer starts when the power turns ON or when the reset input turns OFF.
- A sustained control output is used.
- Timing stops when the time is up.

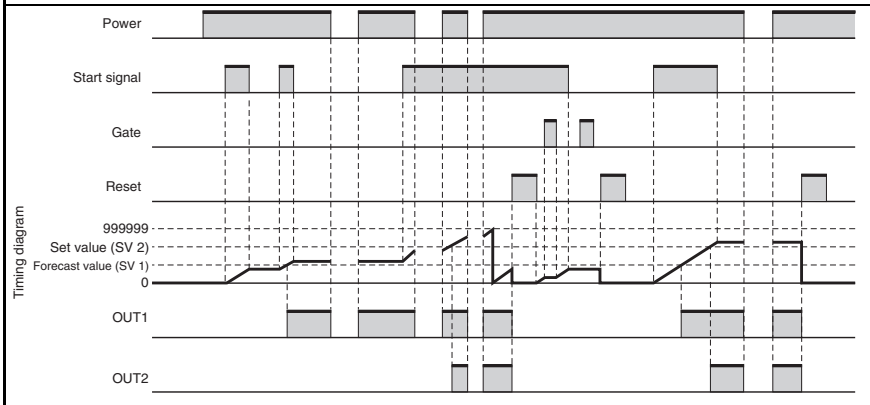
Basic Operation



The names in parentheses are used for the absolute value setting.

* Output is instantaneous when the set value is 0.
** Start signal input is disabled during timing.

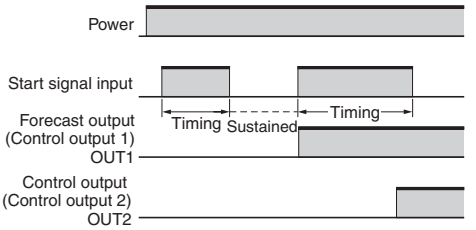
F-1 mode: Cumulative (Timer does not reset when power comes ON.)



The names in parentheses are used for the absolute value setting.

- 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.
- Timing continues even after the time is up.

Basic Operation



The names in parentheses are used for the absolute value setting.

* Output is instantaneous when the set value is 0.

Note: Forecast Value = Set Value − Forecast Set Value
The forecast set value is used to set the deviation for the set value.

■ Self-diagnostic Function

The following displays will appear if an error occurs.

Main display	Sub-display	Error	Output status	Correction method	Set value after reset
E1	Not lit	CPU	OFF	Either press the reset key or reset the power supply.	No change
E2	Not lit	Memory error (RAM)	OFF	Reset the power supply.	No change
E2	SUM	Memory error (EEP) (See note)	OFF	Reset to the factory settings using the reset key.	0

Note: This includes times when the life of the EEPROM has expired.

Safety Precautions (Common)

Note: The following precautions are common for all H5CX models.

— ! Caution —

This may occasionally cause electric shock, fire or malfunction. Do not allow metal fragments or lead wire scraps to fall inside this product.

— ! Caution —

Loose screws may occasionally result in fire or malfunction. Tighten the terminal screws securely. The recommended tightening torque is 0.5 N·m.

— ! Caution —

There may occasionally be a risk of explosion. Do not use the product where flammable or combustion gases are present.

— ! Caution —

This may occasionally cause electric shock, fire or malfunction.

— ! Caution —

Never disassemble, repair or modify the product.

— ! Caution —

This may occasionally cause electric shock, fire or malfunction. Do not allow metal fragments or lead wire scraps to fall inside this product.

— ! Caution —

If both the power supply for the input device and that for the timer are not insulated, unwanted current from the AC power supply may occasionally burn out or damage the internal parts. Always use an insulated power supply for the timer.

■ Precautions for Safe Use

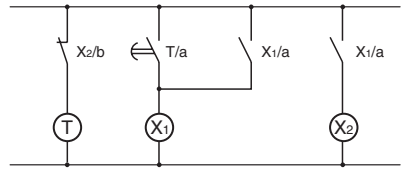
The following precautions must be observed to ensure safety.

Operating and Storage Conditions

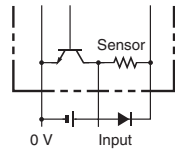
- Do not use in locations affected by excessive vibration or shock, or in locations subject to exposure to water or oil.
- Do not use the product in locations subject to dust, corrosive gases, or direct sunlight.
- Separate the input signal devices, input signal cables, and the product from the source of noise or high-tension cables producing noise.
- Separate the product from the source of static electricity when using the product in an environment where a large amount of static electricity is produced (e.g., forming compounds, powders, or fluid materials being transported by pipe).
- Organic solvents (such as paint thinner), as well as very acidic or basic solutions might damage the outer casing of the H5CX.
- Use the product within the ratings specified for temperature and humidity.
- Do not use the product in locations where condensation may occur due to high humidity or where temperature changes are severe.
- Store at the specified temperature. If the H5CX has been stored at a temperature of less than –10°C, allow the H5CX to stand at room temperature for at least 3 hours before use.

Usage Precautions

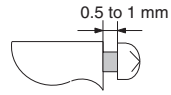
- Make sure that the voltage applied is within the specified range, otherwise the internal elements of the counter may be damaged.
- The load current must be within the rated current.
- Ensure that the power is turned OFF before changing DIP switch settings. Changing DIP switch settings with the power turned ON may result in electric shock due to contact with terminals subject to high voltages.
- Pay attention to terminal polarity to ensure correct wiring.
- Make sure that the fluctuation of the supply voltage is within the permissible range.
- Apply the power supply voltage through a relay or switch in such a way that the voltage reaches the rated value within 2 s. If the voltage is applied gradually, the power may not be reset or unstable output operations may result.
- Leaving the H5CX with outputs ON at a high temperature for a long time may hasten the degradation of internal parts (such as electrolytic capacitors). Therefore, use the product in combination with relays and avoid leaving the product as long as more than 1 month with the output turned ON.



- When the product is operated with no-voltage input (NPN input), approximately 14 V is output from the input terminals, so connect a diode if the external power supply is less than 14 V.



- Install a switch or circuit-breaker that allows the operator to immediately turn OFF the power, and make sure it is labeled clearly.
- The H5CX's panel surface is water-resistive (conforming to NEMA 4, UL Type 4X, and IP66). In order to prevent the internal circuit from water penetration through the space between the H5CX and operating panel, attach a waterproof packing (Y92S-29) between the H5CX and installation panel and secure the waterproof packing with the Y92F-30 Flush-mounting Adapter.



It is recommended that the space between the screw head and the adapter should be 0.5 to 1 mm.

- Tighten the two mounting screws on the Adapter. Tighten them alternately, a little at a time, so as to keep them at an equal tightness. If the panel screws are tightened unequally, water may ingress inside the panel.

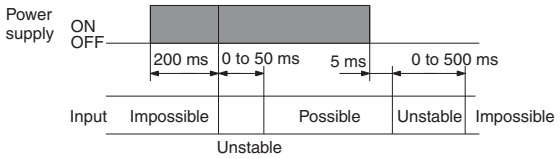
■ Precautions for Correct Use

Power Supplies

Turn the power ON and OFF using a relay with a rated capacity of 10 A minimum to prevent contact deterioration due to inrush current caused by turning the power ON and OFF.

Be sure that the capacity of the power supply is large enough, otherwise the Timer may not start due to inrush current that may flow for an instant when the Timer is turned on.

When turning the power ON and OFF, input signal reception is possible, unstable, or impossible as shown in the diagram below.



Timer Control with Power Start

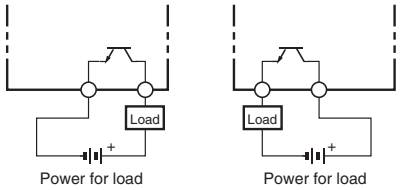
To allow for the startup time of peripheral devices (sensors, etc.), the H5CX starts timing operation between 200 ms to 250 ms after power is turned ON. For this reason, in operations where timing starts from power ON, the time display will actually start from 250 ms. If the set value is 249 ms or less, the time until output turns ON will be a fixed value between 200 and 250. (Normal operation is possible for set value of 250 ms or more.) In applications where a set value of 249 ms or less is required, use start timing with signal input.

When the H5CX is used with power start in F-1 mode (i.e., accumulative operation with output on hold), there will be a timer error (approximately 100 ms each time the H5CX is turned ON) due to the characteristics of the internal circuitry. Use the H5CX with signal start if timer accuracy is required.

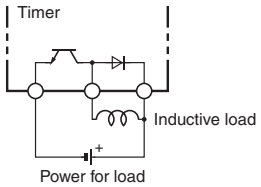
Transistor Output

The transistor output of the H5CX is insulated from the internal circuitry by a photocoupler, so the transistor output can be used as both NPN and PNP output.

NPN Output **PNP Output**



The diode connected to the collector of the output transistor is used to absorb inverted voltage that is generated when an inductive load is connected to the H5CX.



Response Delay Time When Resetting (Transistor Output)

The following table shows the delay from when the reset signal is input until the output is turned OFF.

(Reference value)

Minimum reset signal width	Output delay time
1 ms	0.8 to 1.2 ms
20 ms	15 to 25 ms

Power Failure Backup

All data is stored in the EEPROM when there is a power failure. The EEPROM can be overwritten more than 100,000 times.

Operating mode	Overwriting timing
F-1 mode	When power is turned OFF.
A mode	When settings are changed.

■ Conformance to EN/IEC Standards

There is no insulation between power supply and input terminals.

Basic insulation between power supply and output terminals, and between input terminals and output terminals.

Input and output terminals are connected to devices without exposed charged parts.

Input and output terminals are connected to devices with basic insulation that is suitable for the maximum operating voltage.

Safety Precautions (H5CX-B)

■ Precautions for Safe Use

Changing the Set Value

When changing the set value during a timing operation, the output will turn ON if the set value is changed as follows because of the use of a constant read-in system:

Forecast Value Setting

When the present value ≥ the set value, OUT2 (control output) turns ON. When the present value ≥ the forecast value (forecast value = set value − forecast set value) OUT1 (forecast output) turns ON.

Absolute Value Setting

When the present value ≥ set value 2, OUT2 (control output 2) turns ON. When the present value ≥ set value 1, OUT1 (control output 1) turns ON.

■ Precautions for Correct Use

Operation with a Set Value of 0

When the set value is 0, the output turns ON the moment the signal is input. The reset operation turns OFF the output.

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