H3YN 型

外型與 H3Y 相同，展現多重時間範圍及多元化動作模態。
而且也適合 EMC 規格

- 長短時間範圍及動作模態的多元化功能
- 自時長現電源電壓的半多元化。
- MY 型可互繼電器及插鞘的相容性。
- 對省空間極有貢獻的輕巧尺寸。
- 取得UL、CSA安全規格認證。以 EMC 規格 (EN50081-2、50082-2) 及 VDE(TUV)0435/P2021 爲準。可因應 CE 標誌。

種類

限時接點	2c	4c	4c (雙接點)
短時間型 (0.1s ～ 10min)	H3YN-2 型	H3YN-4 型	H3YN-4-Z 型 *
長時間型 (0.1min ～ 10hr)	H3YN-21 型	H3YN-41 型	H3YN-41-Z 型 *

註：H3YN 型可附連接插座及支撐金屬 (另售)

※電壓規格僅限於 DC24V。

● 2c 型

型式	H3YN-2/21 型							
電源電壓	AC 100~120V	AC 200~230V	AC 24V	DC 12V	DC 24V	DC 48V	DC 100~110V	DC 125V
短時間型 (0.1s~10min)	◎	◎	◎	◎	◎	◎	◎	
長時間型 (0.1min~10hr)	◎	◎		◎	◎			

● 4c 型

型式	H3YN-4/41 型								H3YN-4/41-Z 型
電源電壓	AC 100~120V	AC 200~230V	AC 24V	DC 12V	DC 24V	DC 48V	DC 100~110V	DC 125V	DC 24V
短時間型 (0.1s~10min)	◎	◎	◎	◎	◎		◎		◎
長時間型 (0.1min~10hr)	◎	◎			◎				

額定

項目	型式	H3YN-2/4 型	H3YN-21/41 型
時間規格		短時間型 0.1s ~ 10min (1s、10s、1min、10min 共 4 種範圍之切換)	長時間型 0.1min ~ 10hr (1min、10min、1h、10h 共 4 種範圍之切換)
電源電壓		AC 100 ~ 120V 50/60Hz・AC 200 ~ 230V 50/60Hz・AC 24V 50/60Hz DC 12V・DC 24V・DC 48V・DC 100 ~ 110V・DC 125V ＊	
動作模態		On-Delay、區間、OFF 閃爍起動、ON 閃爍起動等 4 種模態以切換開關 (Dip switch) 進行切換	
容許電壓變動範圍		電源電壓的 85~110%(然而唯有 DC12V 規格的電源電壓爲 90 ~ 110%) ＊＊	
消耗電力 (參考)	AC 100~120V	繼電氣 ON 時約 1.5VA(1.3W)，繼電器 OFF 時約 0.8VA(0.5W)(AC120V 60Hz 時)	
	AC 200~230V	繼電氣 ON 時約 1.8VA(1.5W)，繼電器 OFF 時約 1.2VA(0.9W)(AC230V 60Hz 時)	
	AC 24V	繼電氣 ON 時約 1.5VA(1.1W)，繼電器 OFF 時約 0.2VA(0.1W)(AC24V 60Hz 時)	
	DC 12V	繼電氣 ON 時約 0.9W，繼電器 OFF 時約 0.07W)(DC12V 時)	
	DC 24V	繼電氣 ON 時約 0.9W，繼電器 OFF 時約 0.07W)(DC24V 時)	
	DC 48V	繼電氣 ON 時約 1.0W，繼電器 OFF 時約 0.2W)(DC48V 時)	
	DC 100~110V	繼電氣 ON 時約 1.3W，繼電器 OFF 時約 0.3W)(DC110V 時)	
	DC 125V	繼電氣 ON 時約 1.3W，繼電器 OFF 時約 0.3W)(DC125V 時)	
復歸電壓		電源電壓在 10% 以上＊＊＊	
控制輸出		兩極：AC250V 5A 電阻負載（cos φ=1） 四極：AC250V 3A 電阻負載（cos φ=1）	
使用周圍溫度		-10~+50℃（但不結冰）	
保存溫度		-25~+65℃（但不結冰）	
使用周圍濕度		35~85%RH	

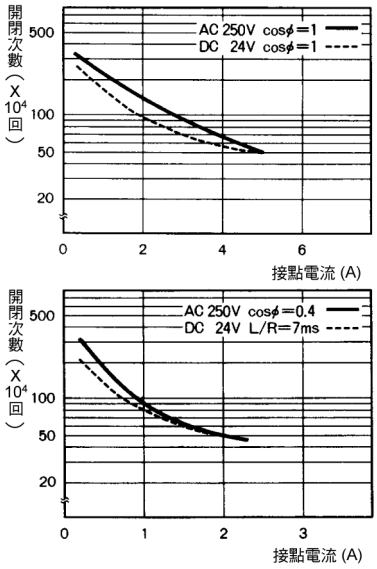
＊連單相全波整流電源均可使用。
＊＊周圍溫度為 50℃連續使用時，請採用 90 ~ 110% 的電源電壓 (DC12V 為 95 ~ 110%)。
＊＊＊為能確實復歸，AC100 ~ 120V 時請使用 AC10V 以下的規格，AC200 ~ 230V 時使用 AC20V，DC100 ~ 110V 時使用 DC10V 以下。

性能

項目	型式	H3YN-2/4 型	H3YN-21/41 型
動作時間的偏差		±1% 以下（以最大的刻度時間）（在 1s 範圍時爲 ±1%±10ms 以下）	
設定誤差		±10%±50ms 以下（最大刻度時間）	
復歸時間		0.1s 以下（包含中途復歸）	
電壓影響		±2% 以下（以最大刻度時間）＊	
溫度影響		±2% 以下（以最大刻度時間）＊	
絕緣電阻		100MΩ 以上（以 DC500VM 測試）	
耐電壓		AC2000V 50/60Hz 1min（在導電部端子及露出的非充電金屬之間，但是端子螺絲除外） AC2000V 50/60Hz 1min（在操作電源回路及控制輸出之間） AC2000V 50/60Hz 1min（在異極接點之間　兩極型式） AC1500V 50/60Hz 1min（在異極接點之間　四極型式） AC1000V 50/60Hz 1min（在非連續接點之間）	
振動	持久性	10 ~ 55Hz 單振幅 0.75mm	
	錯誤動作	10 ~ 55Hz 單振幅 0.5mm	
衝擊	持久性	1,000m/s^2 {約 100G}	
	錯誤動作	100m/s^2 {約 10G}	
壽命	機械性	1000 萬次以上（無負載、開閉頻率 1800 次 /h）	
	電氣性	2 極 50 萬次以上 (AC250V 5A 電阻負載、開閉頻率 1800 次 /h)(常溫時) 4 極 20 萬次以上 (AC250V 5A 電阻負載、開閉頻率 1800 次 /h)(常溫時)	
脈衝電壓		電源端子之間 3kV，但是 DC12V、DC24V、DC48V 型爲 1kV，導電端子及露出的非充電金屬之間爲 4.5kV，然而 DC12V、DC24V、DC48V 爲 1.5kV	
耐雜訊		由雜訊模擬器產生方形波雜訊（脈波寬度 100ns/1μs 升至 1ns）±1.5kV	
抗靜電		4kV（錯誤動作）8kV（破壞）	
保護結構		IP40	
重量		約 50g	
取得規格		詳情請查閱安全規格認證機種一覽表	

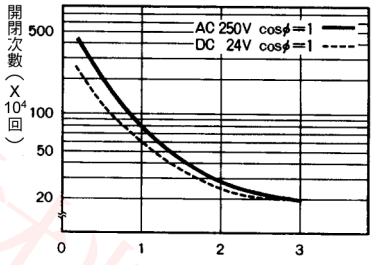
電氣的壽命曲線 (參考值)

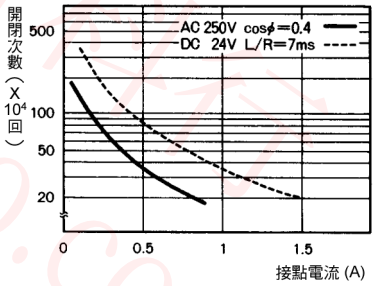
● H3YN-2/21 型



註：最小適用負載 DC5V 1mA (P 水準參考值)
DC125V cos φ=1 時可開閉 0.6A max.
(壽命 10 萬次)
L/R=7ms 時可開閉 0.2A max.
(壽命 10 萬次)

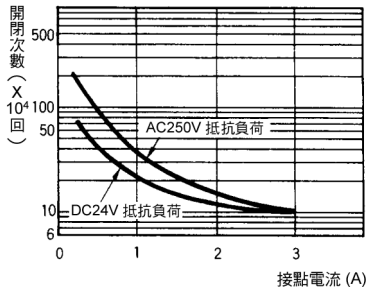
H3YN-4/41 型





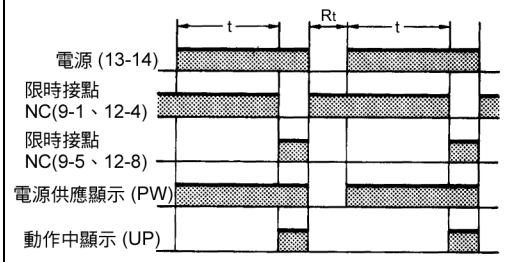
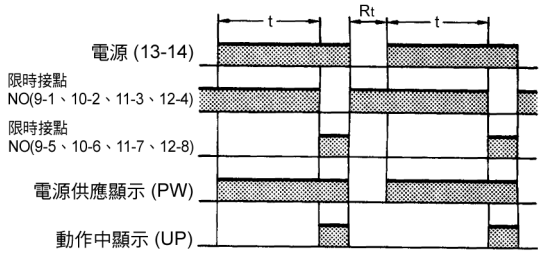
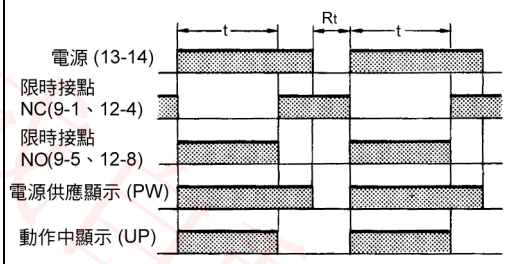
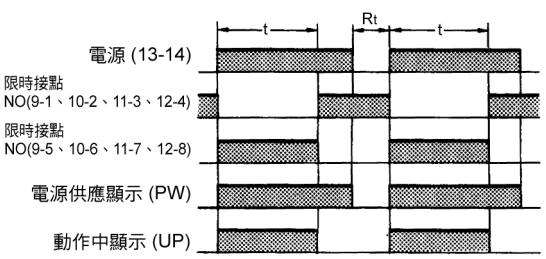
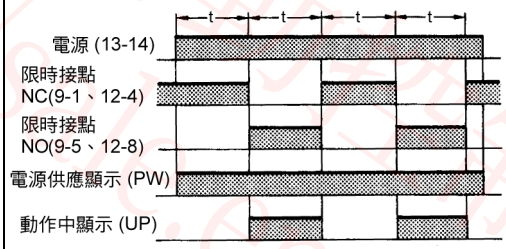
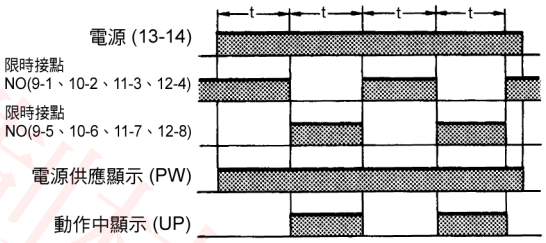
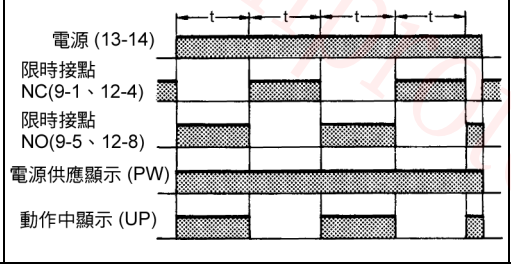
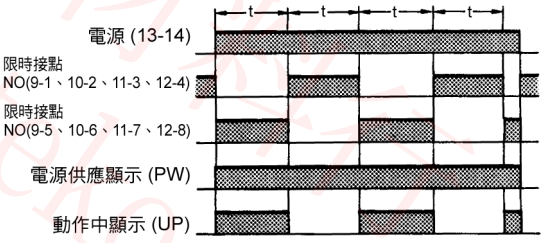
註：最小適用負載 DC5V 1mA (P 水準參考值)
DC125V cos φ=1 時可開閉 0.6A max.
(壽命 10 萬次)
L/R=7ms 時可開閉 0.2A max.
(壽命 10 萬次)

● H3YN-4/41-Z 型



註：最小適用負載 DC5V 1mA (P 水準參考值)
DC125V cos φ=1 時可開閉 0.6A max.
(壽命 10 萬次)
L/R=7ms 時可開閉 0.2A max.
(壽命 10 萬次)

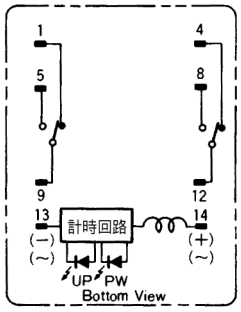
動作圖表

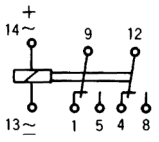
型號	時序表	
動作模態	H3YN-2/21 型	H3YN-4/41(-Z)
On-Delay 基本動作 電源 t 輸出		
區間 基本動作 電源 t 輸出		
閃爍 OFF 起動 基本動作 電源 t t t t 輸出		
閃爍 ON 起動 基本動作 電源 t t t t 輸出		

註：t 表示設定時間、Rt 表示復歸時間（0.1s 以上）。

內部連接

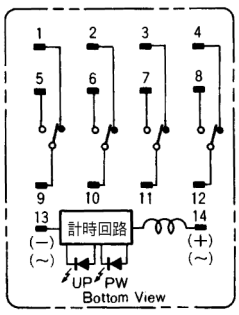
H3YN-2/21 型

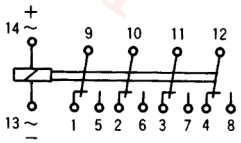




（DIN 顯示）

H3YN-4/41 型

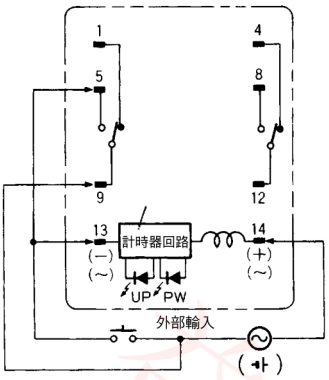


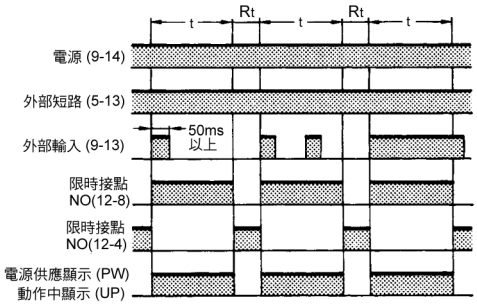


（DIN 顯示）

● 脈波動作(請在區間設定動作模態，並使用下圖連線)。
利用隨意 (Random) 外部信號輸入即可在規定的時間內取得脈波輸出。

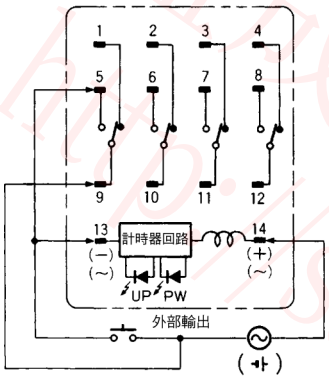
H3YN-2/21 型

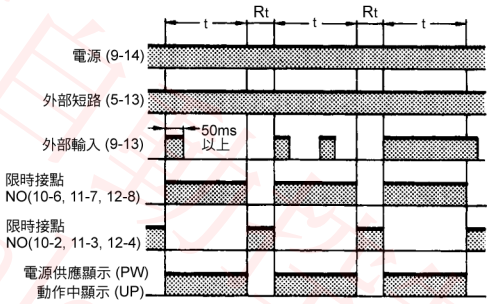




註：t 為設定時間，Rt 為復歸時間（0.1s 以上）。

H3YN-4/41 型





註：t 為設定時間，Rt 為復歸時間（0.1s 以上）。

● 請注意脈波動作與區間動作時的電源連接端子 No 相異。
● 使用脈波動作的電源連接時，請連接在端子 NO 9：⊖— ⑭：⊕。
此外，請在插座上將 ⑤— ⑬ 與外部短路相連，外部輸入端子是 ⑨— ⑬。
● 在區間動作上所使用的電源連接爲 ⑬：⊖— ⑭：⊕。

指撥開關 (Dip switch) 的設定方式

(出貨時 H3YN-2/4 型設定爲 1s On-Delay，H3YN-21/41 設定爲 1min 範圍的 On-Delay)。

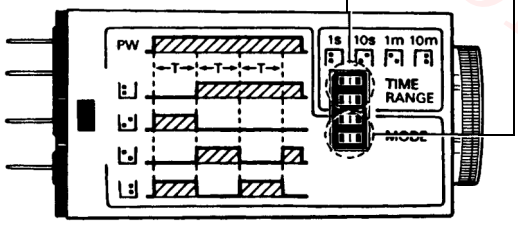
● 時間規格

型式	時間範圍	設定時間範圍	設定方式
H3YN-2 型 H3YN-4 型	1s ＊	0.1 ～ 1s	
	10s	1 ～ 10s	
	1min	0.1 ～ 1min	
	10min	1 ～ 10min	
H3YN-21 型 H3YN-41 型	1min ＊	0.1 ～ 1min	
	10min	1 ～ 10min	
	1h	0.1 ～ 1h	
	10h	1 ～ 10h	

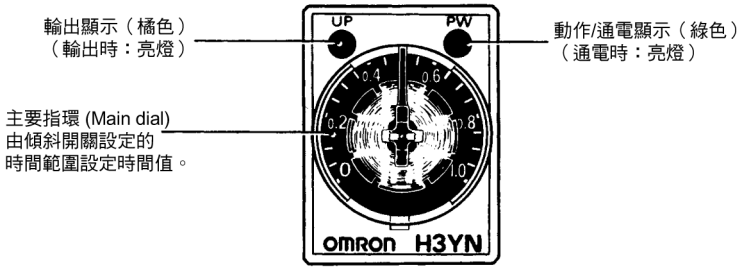
註：請以切換開關的上方 2 個鍵切換時間範圍。
＊出貨時的設定。

動作模態	設定方式
On-Delay ＊	
區間	
閃爍 (OFF) 起動	
閃爍 (ON) 起動	

註：請以切換開關的下方 2 個鍵進行動作模態的切換。
＊出貨時的設定。

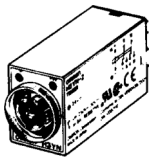


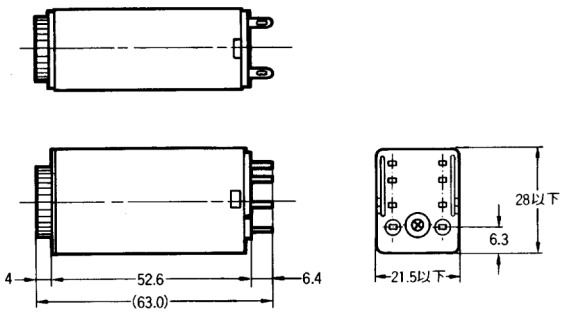
各部位名稱、機能



外型尺寸

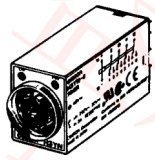
H3YN-2/21 型 表面安裝（嵌入端子）

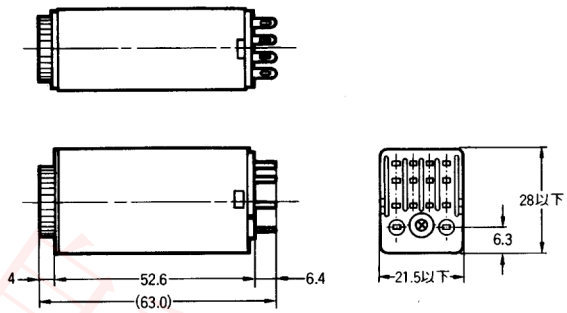




CAD：檔案	H3YN-01（與 PYF08A 型相組合）

H3YN-4/41 型 表面安裝（嵌入端子）
H3YN-4/41-Z 型

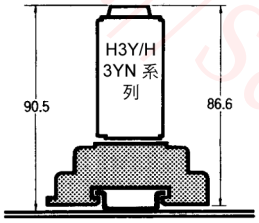




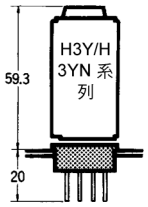
CAD：檔案	H3YN-02（與 PYF14A 型相組合）

H3Y、H3YN 型共用

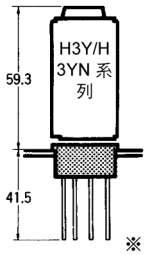
插座安裝高度



PYF08A 型
※（PYF14A 型）



PY08 型
※（PY14 型）



PY08QN 型
※（PY14QN 型）

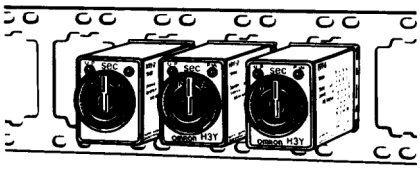
※（ ）內為連接 H3Y-4 型、H3Y-4/41 型、H3YN-4-Z/41-Z 型的插座。

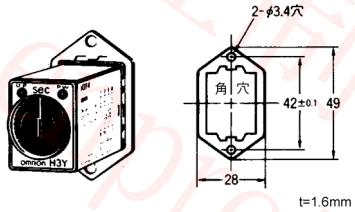
連接插座

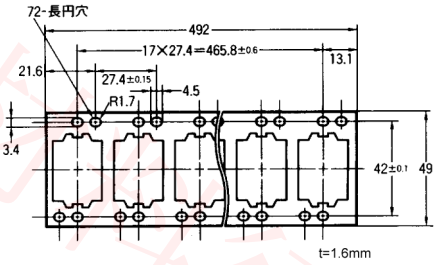
連接插座時請使用 PYF □ A 型、PY □型 PY □ -02 型、PY □ QN(2)(-Y3) 型。(□內爲 08 或 14)。

連接插座安裝板（另售）

請在數個連接插座並連安裝時使用。插座有組裝 1 個 (PYP-1 型) 及組裝 18 個 (PYP-18 型) 兩種型號，組裝 18 個的插座可任意裁剪長度。





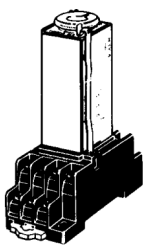


型式
PYP-1 型

型式
PYP-18 型

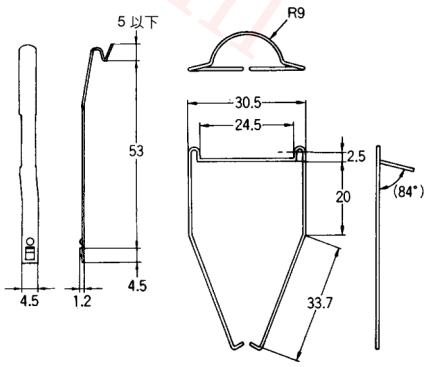
支撐金屬（另售）

確實固定計時器，以免因震動、衝擊而產生脫落情形。



Y92H-3 型
※（PY □型專用）

Y92H-4 型
※ PY □型專用



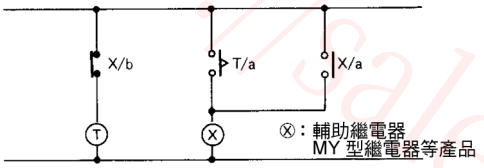
插座	金屬型式	
PYF □ A 型專用	Y92H-3 型	
PY □ A 型專用	Y92H-4 型	

H3Y/H3YN型共同注意事項

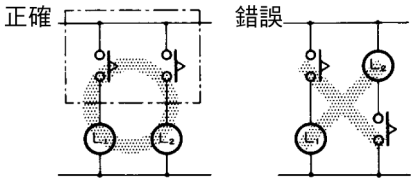
請正確使用

正確用法

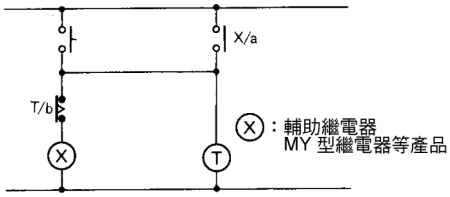
- 選擇控制輸出時請選擇 H3Y-2 型及 H3YN-2 型的系列產品以作爲電源開關之用，選擇 H3Y-4 型及 H3YN-4 型系列產品以作爲微小負載開閉之用。
- 連接電源時請連接在端子 No.13-14 上。DC 電源時請連接在端子 No.13：⊖ 14：⊕上。
- 在周圍溫度 +45~+50℃的範圍內持續增加電壓時動作電壓變高，因此請使用額定 90~110%(DC12V 的規格爲 95~110%) 的電壓。
- 在高溫中長期以時間截止的狀態放置時，恐會縮短其內部零件 (鋁製電解電容器) 的壽命。爲能延長 H3Y/H3YN 型的壽命，請避免與繼電器組合使用及長時間 (例如 1 個月以上) 放置至時間截止。參考實例 (請如下列使用之)。



- 以 H3YN 型操作切換開關時，請自插座拆下。接觸高電壓的供電端子容易發生危險。
- 以下列方式連接時，在計時器內部的異極接點之間會產生偶而短路 (Rare short) 現象，所以請避免如此連接。



- 組合 H3Y/H3YN 型與輔助繼電器，製造「自行保持、自行復歸回路」時，請使用下列回路。



此外，由於動作與脈波動作相同，因此如果與 1155 頁所示之處相連，就不需要輔助繼電器。

- 請避免在多塵、容易產生腐蝕氣體之處及陽光直射之處使用。
- 如密接安裝，恐會縮短內部零件的壽命。由於 H3Y/H3YN 型的壽命延長，因此安裝時請盡量提高 5min 以上以利散熱。
- 在額定電源電壓之外增加電壓恐會破壞內部元件。尤其當 DC12V 及 DC24V 增加AC100V以上的電壓時，內部元件 (可變電阻) 會發生破損現象。
- 以閃爍模態所作的最小設定可能會傷及接點，請避免之。

注意可因應 VDE(TUV) 規格之相關事宜

身爲控制盤內藏用的 H3Y/H3YN 型計時器以 VDE（TUV）0435/P2021 爲準則，但還是請遵守下列操作方式以吻合本規格需求。

● 操作相關事宜

- 使用 H3YN 型時，通電中請勿接觸切換開關。
- 在確認所有端子並未輸入電壓之後再從插座拆下。

● 關於配線

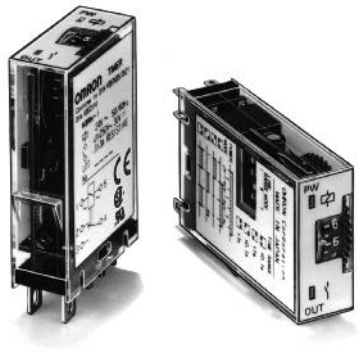
- 輸入的電源請由 VDE 認定過的過電流保護裝置保護之。
- 請將與輸出接點相接的負載接在被根本絕緣的物品上。確認 H3Y/H3YN 型的根本絕緣，並配合負載的根本絕緣才能達到 VDE 所要求的雙重絕緣。根本絕緣：過電壓概念 II
  污染度 2
  （絕緣距離爲 AC240V 時，空間 1.5mm、沿面 2.5mm）
- 在 H3Y-4/-4-0 型、H3YN-4/41 型、H3YN-4/41-Z 型時，請將輸出接點 (異極接點之間) 相連形成同電位。

OMRON

Solid-state timer
H3RN

Ultra-slim Timer for G2R Relay Socket

- Pin configuration compatible with G2R Relay and mounts to the P2R/P2RF Socket.
- Standard multiple time ranges and multiple operating modes.
- Conforms to EN61812-1 and IEC60664-1 4 kV/2 for Low Voltage, and EMC Directives.



Model Number Structure

■ Model Number Legend

H3RN-□□
1 2

1. Output
1: SPDT
2: DPST-NO

2. Time Range
None: Short-time range (0.1 s to 10 min)
1: Long-time range (0.1 min to 10 hrs)

Ordering Information

■ List of Models

Supply voltage	Time-limit contact	Short-time range model (0.1 s to 10 min)	Long-time range model (0.1 min to 10 h)
24 VAC; 12, 24 VDC	SPDT	H3RN-1	H3RN-11
	DPST-NO	H3RN-2	H3RN-21

Note: Specify both the model number and supply voltage when ordering.
Example: H3RN-1 24 VAC
Supply voltage

■ Accessories (Order Separately)

Connecting Socket

Timer	Track mounting/Front connecting socket	Back connecting socket
H3RN-1/-11	P2RF-05-E	P2R-057P
H3RN-2/-21	P2RF-08-E	P2R-087P

Specifications

■ Ratings

Item	H3RN-1/H3RN-2	H3RN-11/H3RN-21
Time ranges	0.1 s to 10 min (1 s, 10 s, 1 min, or 10 min max. selectable)	0.1 min to 10 h (1 min, 10 min, 1 h, or 10 hrs max. selectable)
Rated supply voltage	24 VAC (50/60 Hz); 12, 24 VDC	
Pin type	Plug-in	
Operating mode	ON-delay, interval, flicker OFF-start, or flicker-ON start selectable by DIP switch	
Operating voltage range	85% to 110% of rated supply voltage (12 VDC: 90% to 110% of rated supply voltage) (see note)	
Reset voltage	10% max. of rated supply voltage	
Power consumption	24 VAC: Relay ON: approx. 0.8 VA (0.6 W) at 24 VAC, 60 Hz Relay OFF: approx. 0.6 VA (0.4 W) at 24 VAC, 60 Hz 12 VDC: Relay ON: approx. 0.5 W at 12 VDC Relay OFF: approx. 0.2 W at 12 VDC 24 VDC: Relay ON: approx. 0.6 W at 24 VDC Relay OFF: approx. 0.3 W at 24 VDC	
Control outputs	3 A at 250 VAC, resistive load ($\cos\phi$ = 1) (G6B-2□14P-FD-US used) The minimum applicable load is 10 mA at 5 VDC (P reference value).	

Note: When using the H3RN in any place where the ambient temperature is more than 50°C, supply 90% to 110% of the rated voltages (12 VDC: 95% to 110% of the rated voltage).

■ Characteristics

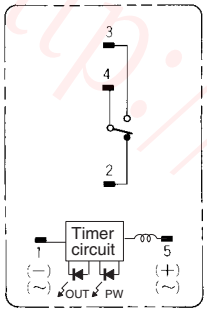
Item	H3RN-1/H3RN-2	H3RN-11/H3RN-21
Accuracy of operating time	±1% FS max. (1 s range: ±1%±10 ms max.)	
Setting error	±15%±50 ms FS max.	
Reset time	Min. power-opening time: 12, 24 VDC: 0.1 s max. (including halfway reset) 24 VAC: 0.5 s max. (including halfway reset)	
Influence of voltage	±2% FS max.	
Influence of temperature	±2% FS max.	
Insulation resistance	100 MΩ min. (at 500 VDC)	
Dielectric strength	2,000 VAC, 50/60 Hz for 1 min (between operating circuit and control output, or contacts of different poles) 1,000 VAC, 50/60 Hz for 1 min (between non-continuous contacts)	
Vibration resistance	Destruction: 10 to 55 Hz, 0.75-mm single amplitude for 1 h each in 3 directions Malfunction: 10 to 55 Hz, 0.5-mm single amplitude for 10 min each in 3 directions	
Shock resistance	Destruction: 300 m/s^2 Malfunction: 100 m/s^2	
Ambient temperature	Operating: −10°C to 55°C (with no icing) Storage: −25°C to 65°C (with no icing)	
Ambient humidity	Operating: 35% to 85%	
Life expectancy	Mechanical: 10,000,000 operations min. (under no load at 1,800 operations/h) Electrical: 100,000 operations min. (3 A at 250 VAC, resistive load at 1,800 operations/h)	
Impulse withstand voltage	Between power terminals: 1 kV	
Noise immunity	±1.5 kV, square-wave noise by noise simulator (pulse width: 100 ns/1 μs, 1-ns rise)	
Static immunity	Destruction: 8 kV Malfunction: 4 kV	
Degree of protection	IP40 (Terminal screw sections are excluded.)	
Weight	Approx. 18 g	

Item	H3RN-1/H3RN-2	H3RN-11/H3RN-21
EMC	(EMI) EN61812-1 Emission Enclosure: EN55011 Group 1 class A Emission AC Mains: EN55011 Group 1 class A (EMS) EN61812-1 Immunity ESD: EN61000-4-2: 6 kV contact discharge (level 3) 8 kV air discharge (level 3) Immunity RF-interference from AM Radio Waves: IEC61000-4-3:10 V/m (80 MHz to 1 GHz) (level 3) Immunity Burst: EN61000-4-4: 2 kV power-line (level 3) 2 kV I/O signal-line (level 4) Immunity Surge: IEC51000-4-5: 1 kV line to line (level 3) 2 kV line to ground (level 3)	
Approved standards	UL508, CSA C22.2 No. 14 Conforms to EN61812-1, IEC60664-1 4 kV/2. Output category according to IEC60947-5-1.	

Connections

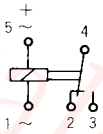
■ Connection

H3RN-1/H3RN-11

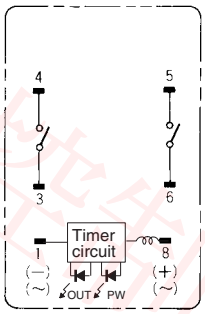


Bottom View

DIN Indication

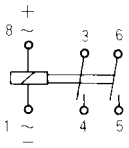


H3RN-2/H3RN-21



Bottom View

DIN Indication

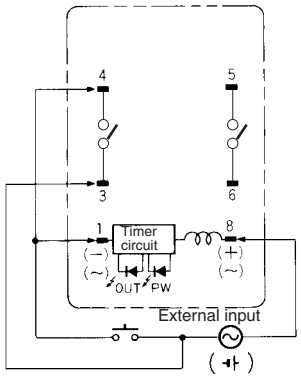


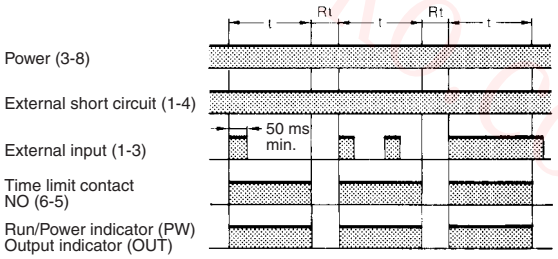
Pulse Operation

A pulse output for a certain period can be obtained with a random external input signal.

Use the H3RN in interval mode as shown in the following timing charts.

H3RN-2/H3RN-21





Note: t: Set time
Rt: Reset time

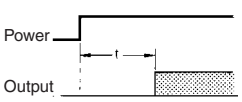
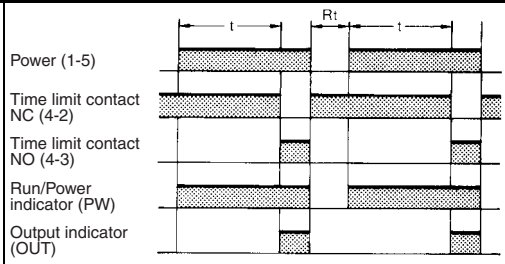
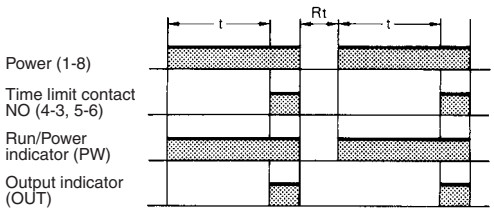
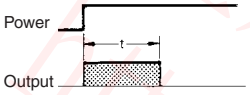
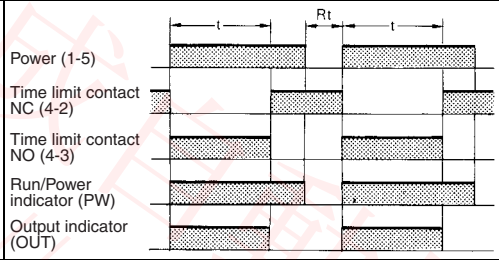
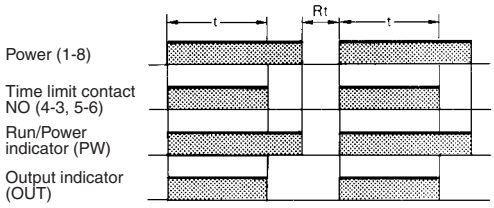
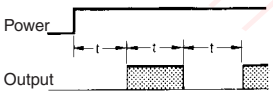
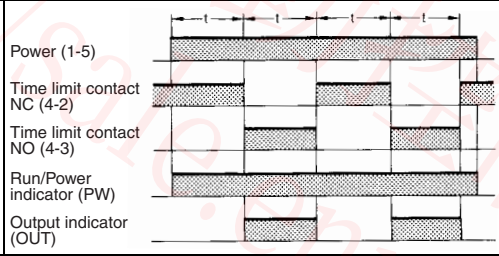
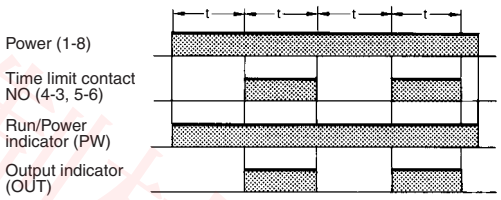
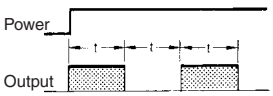
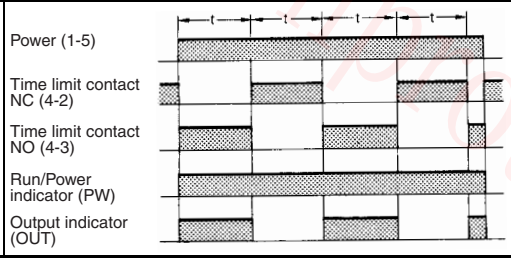
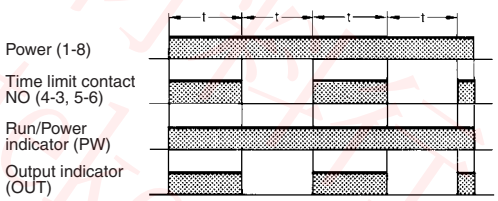
⚠ Caution

Be careful when connecting wires.

Mode	Terminals
Pulse operation	Power supply between 3 and 8 Short-circuit between 4 and 1 Input signal between 3 and 1
Operating mode; interval and all other modes	Power supply between 1 and 8

Operation

■ Timing Chart

Operating mode	Timing chart	
	H3RN-1/H3RN-11	H3RN-2/H3RN-21
ON-delay 		
Interval 		
Flicker OFF-start 		
Flicker ON-start 		

Note: t: Set time
Rt: Reset time

■ DIP Switch Settings

The 1-s range and ON-delay mode for H3RN-1/-2, 1-min range and ON-delay mode for H3RN-11/-21 are factory-set before shipping.

Time Ranges

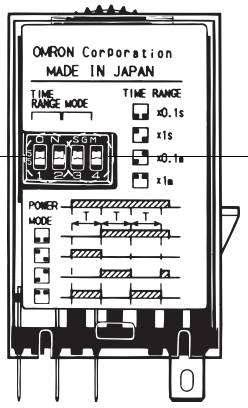
Model	Time range	Time setting range	Setting	Factory-set
H3RN-1, H3RN-2	1 s	0.1 to 1 s		Yes
	10 s	1 to 10 s		No
	1 min	0.1 to 1 min		No
	10 min	1 to 10 min		No
H3RN-11, H3RN-21	1 min	0.1 to 1 min		Yes
	10 min	1 to 10 min		No
	1 h	0.1 to 1 h		No
	10 h	1 to 10 h		No

Note: The left two DIP switch pins are used to select the time ranges.

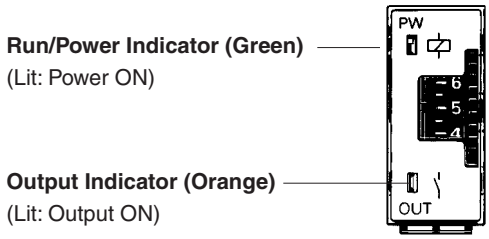
Operating Modes

Operating mode	Setting	Factory-set
ON-delay		Yes
Interval		No
Flicker OFF-start		No
Flicker ON-start		No

Note: The right two DIP switch pins are used to select the operating modes.



Nomenclature



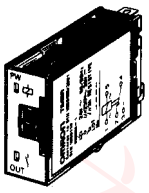
OMRON

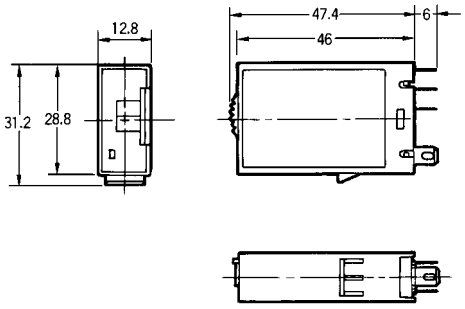
Dimensions

Note: All units are in millimeters unless otherwise indicated.

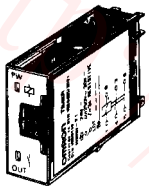
■ Timers

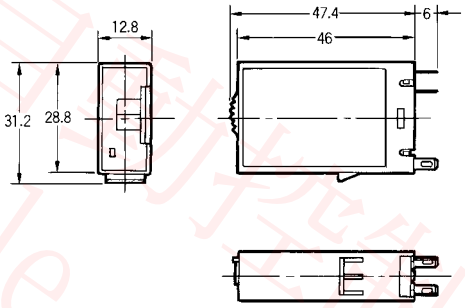
H3RN-1/H3RN-11 Front Mounting





H3RN-2/H3RN-21 Front Mounting

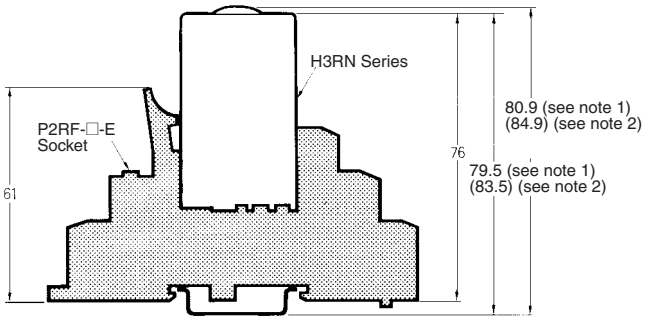




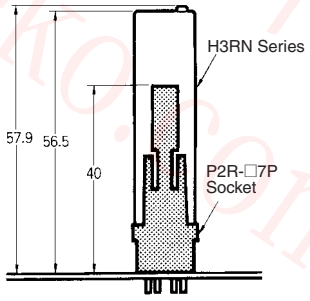
Mounting Height

Use the P2RF-□-E or P2R-□7P to mount the H3RN. When ordering any one of these sockets, replace "□" with "05" for SPDT or "08" for DPST-NO.
The P2RF-□ cannot be used because the hook is a different shape.

P2RF-□-E



P2R-□7P



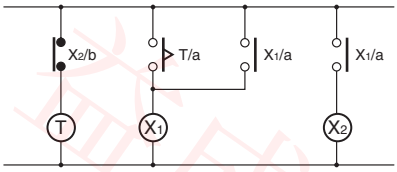
Note: 1. The value shown indicates the dimension for the P2RF-05-E with the PFP-□N Mounting Rail.
The value is 71.5 mm when using the PFP-N□2.
2. The value shown in parentheses indicates the dimension for the P2RF-08-E with the PFP-□N Mounting Rail.
The value is 75.5 mm when using the PFP-N□2.

Precautions

■ Correct Use

When using the H3RN in any place where the ambient temperature is more than 50°C, supply 90% to 110% of the rated voltages (at 12 VDC: 95% to 110%).

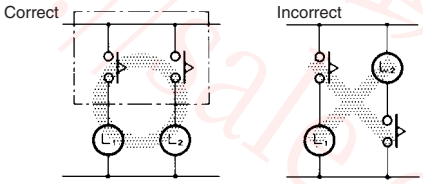
Do not leave the H3RN in time-up condition for a long period of time (for example, more than one month in any place where the ambient temperature is high), otherwise the internal parts may become damaged. Therefore, the use of the H3RN with a relay as shown in the following circuit diagram is recommended.



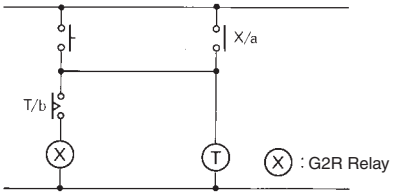
Ⓧ : Auxiliary relay such as G2R Relay

The H3RN must be disconnected from the socket when setting the DIP switch, otherwise the user may touch a terminal imposed with a high voltage and get an electric shock.

Do not connect the H3RN as shown in the following circuit diagram on the right hand side, otherwise the H3RN's internal contacts different from each other in polarity may become short-circuited.

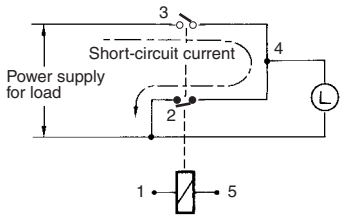


Use the following safety circuit when building a self-holding circuit with the H3RN and an auxiliary relay, such as a G2R Relay, in combination.



In the case of the above circuit, the H3RN will be in pulse operation. Therefore, if the circuit shown on page 3 is used, no auxiliary relay will be required.

Do not use the SPDT contact in a circuit which may cause short-circuiting at three points (otherwise, short-circuiting of the power supply may occur) because the SPDT contact of H3RN-1/-11 is composed of an SPST-NC contact.



Do not set to the minimum setting in the flicker modes, otherwise the contact may be damaged.

Do not use the H3RN in places where there is excessive dust, corrosive gas, or direct sunlight.

Make sure that there is a space of 3 mm or more between any H3RN Models next to each other. (When using the P2RF-□-E Socket, a space of 3 mm or more will be secured.) If a space of 3 mm or more is not secured, the ambient temperature must be less than 50°C.

The internal parts may become damaged if a supply voltage other than the rated ones is imposed on the H3RN.

■ Precautions for EN61812-1 Conformance

The H3RN as a built-in timer conforms to EN61812-1 provided that the following conditions are satisfied.

Handling

Do not touch the DIP switch while power is supplied to the H3RN.

Before dismounting the H3RN from the socket, make sure that no voltage is imposed on any terminal of the H3RN.

Wiring

Basic insulation is ensured between the H3RN's operating circuit and control output.

Basic insulation: Overvoltage category III, pollution degree 2 (with a clearance of 3.0 mm and a creepage distance of 3.0 mm at 240 VAC)

The clearance from the edge of the P2R-087P Socket to internal, current-carrying metal parts is 1.3 mm. Position the H3RN to provide the necessary clearance for the voltage used.
When using the P2RF-□-E or P2R-057P Socket, basic insulation is ensured in the mounted condition for a voltage of 250 VAC max.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

Cat. No. L090-E1-02

In the interest of product improvement, specifications are subject to change without notice.

H3AM 型類比計時器

具有 96 × 96 尺寸的大型顯示裝置、使用者可用可撥指針進行操作並因應監視功能的需求

- 具有 96 × 96 尺寸的大型顯示裝置及可撥指針的類比計時器確保其優質的視覺辨識特性。
- 由電源電壓及時間單位的多元化，提升其簡易的選擇性。
- 排除馬達計時器特有的多樣方向限制。
- 確保防水性 (IP65)。
- 由「馬達」+「電子回路」的特性而減輕重量。
- 取得 UL、CSA 等全規格認證，也可因應 CE 標誌需求。

種類

電源電壓	復歸方式	控制輸出	型號 時間範圍	H3AM 型 (30s、3min、30min、3h、30h)	(60s、6min、60min、6h、60h)	(12s、120s、12min、12h)
AC100~240V	自行復歸	接點輸出 2c (限時 2c 或 限時 1c+ 瞬時 1c)	型號	H3AM-NS-A 型	H3AM-NS-B 型	H3AM-NS-C 型
	電氣復歸	接點輸出 2c (限時 1c+ 瞬時 1c)	型號	H3AM-NSR-A 型	H3AM-NSR-B 型	H3AM-NSR-C 型

時間規格

型號	刻度數字	時間單位	s(秒)	10s(秒)	min(分)	10min(分)	h(小時)	10h(小時)
H3AM-( )-A 型	3	時間範圍設定	—	0.5 ～ 30	0.05 ～ 3	0.5 ～ 30	0.05 ～ 3	0.5 ～ 30
H3AM-( )-B 型	6		—	1 ～ 60	0.1 ～ 6	1 ～ 60	0.1 ～ 6	1 ～ 60
H3AM-( )-C 型	12		0.2 ～ 12	2 ～ 120	0.2 ～ 12	2 ～ 120	0.2 ～ 12	—

註：將刻度轉切至 0 的方向使其瞬間輸出。

額定

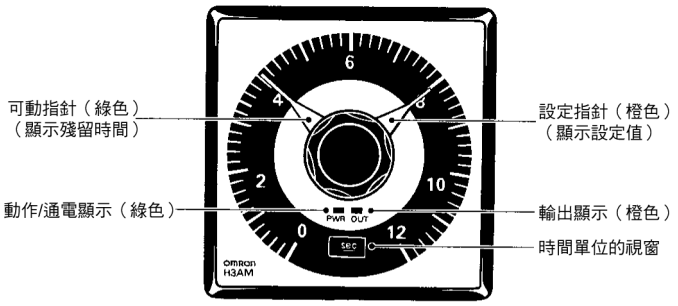
電源電壓	AC100 ～ 240V 50/60Hz
容許電壓變動範圍	85 ～ 110% 之電源電壓
電源復歸 (H3AM-NS 型)	最小電源開放時間 0.5s
增加復歸時間 (H3AM-NSR 型)	最小輸入信號寬度 0.5s
復歸電壓範圍 (H3AM-NSR 型)	H 準位：AC85 ～ 264V L 準位：AC0 ～ 10V
消耗電力	約 9VA(約 5W)
控制輸出	接點輸出：AC250V 5A 電阻負載 (cosφ=1)
使用溫度範圍	-10~+55℃ （但不結冰）
使用保證濕度	35 ～ 85%RH
保存溫度範圍	-25~+65℃ （但不結冰）

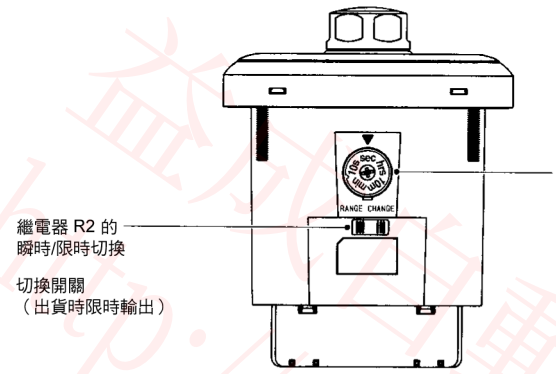
性能

動作時間的偏差		±0.7%（相對於最大刻度比例）以下
設定誤差		±2%（相對於最大刻度比例）以下
復歸時間		0.5s 以下
電壓影響		±1%（相對於最大刻度比例）以下
溫度影響		±2%（相對於最大刻度比例）以下
絕緣電阻		100MΩ 以上（以 DC500VM 測試）
耐電壓		AC2,000V 50/60Hz 1min（在導電端子及露出的非充電金屬之間） AC2,000V 50/60Hz 1min（在操作回路及控制輸出回路之間） AC1,000V 50/60Hz 1min(在操作電源回路及復歸輸入回路之間)(僅限於 H3AM-NSR 型) AC1,000V 50/60Hz 1min（在非連續接點之間） AC2,000V 50/60Hz 1min（在異極接點之間）
脈衝電壓		3kV(在電源端子之間)、4.5Kv(在導電端子及露出的非充電金屬之間)
耐雜訊		由雜訊模擬器所產生的方形波雜訊（脈波寬度 100ns/1μs 升至 1ns）±1.5kV（在電源端子之間）
抗靜電		8kV（錯誤動作）1.5kV（破壞）
振動	耐久性	10 ～ 55Hz 單振幅 0.75mm
	錯誤動作	10 ～ 55Hz 單振幅 0.5mm
衝擊	耐久性	300m/s^2｛約 30G｝
	錯誤動作	150m/s^2｛15G｝（前後方向爲 100m/s2｛約 10G｝）
壽命	機械性	500 萬次以上（無負載、開閉頻率 1,800 次 /h）
	電氣性	10 萬次以上（AC250V、5A、電阻負載、開閉頻率 1,800 次 /h）
EMC EN50081-2 EN50082-2 EN61812-1		（EMI） 放射妨害磁場強度 EN55022 Class A 雜訊端子電壓　EN55022 Class A （EMS） 靜電放驗模擬　EN61000-4-2：4kV 接觸（準位 2）8kV 氣中（準位 3） 磁場模擬（AM 異常）ENV50140：10V/m（80MHz ～ 1GHz）（準位 3） 磁場模擬（脈波異常）ENV50204：10V/m（900MHz ～ 5MHz）（準位 3） 電源頻率磁場 EN61000-4-8：30A/m（50Hz）（準位 4） 傳導雜訊模擬 ENV50141：10V（0.15 ～ 80GHz）（準位 3） 載色訊號 (Burst) 之雜訊模擬 EN61000-4-4：2kV 電源線 (準位 3)2kV I/O 信號線 (準位 4) 突波模擬　EN61000-4-5：線間 1kV 大地間 2kV（準位 3）
保護結構		IP65（僅限於顯示部份）＊、IP20（端子部）
重量		約 350g
取得規格		詳情請查閱規格認定機種一覽表

＊為了確保本體與面板間的防水性 (IP65)，絕對需要另售的填料 (Y92S-35 型)(請參考下一頁)。

各部位的名稱與功能

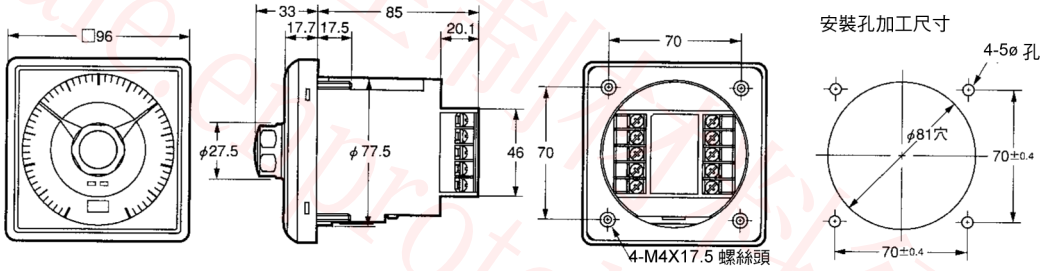




型號	時間單位 時間範圍	s （秒）	10s （秒）	min （分）	10min （分）	h （時間）	10h （時間）
H3AM- （ ）-A 型	3	—	○	○	○	○	○
H3AM- （ ）-B 型	6	—	○	○	○	○	○
H3AM- （ ）-C 型	12	○	○	○	○	○	—

外型尺寸

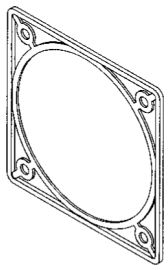
H3AM 型 嵌入式安裝



註：安裝在面板上
鎖緊力矩：300mN·m±50mN·m
(3kgf·cm±0.5kgf·cm)

防水填料 (Packing)(另售)

● 避免水滲入本體與面板之間



（關於交貨期，請洽詢交易廠商）

型號	最小訂單單位（個）
Y92S-35 型	1

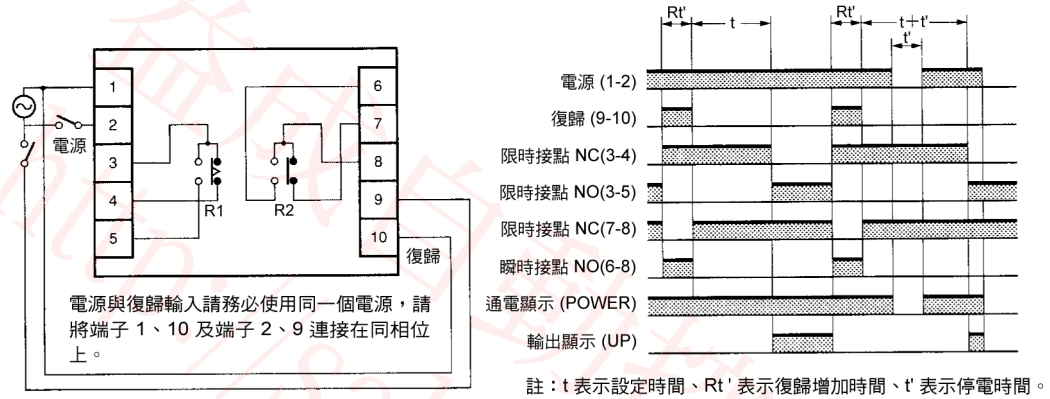
P
H3AM

動作內部連接 / 時序圖

H3AM-NS 型

註：t 表示設定時間、Rt 表示復歸時間。

H3AM-NSR 型



註：t 表示設定時間、Rt ' 表示復歸增加時間、t' 表示停電時間。

＊1. 繼電器 R2(接點 6-8、7-8 的動作) 的瞬時 / 限時接點可由本體下方的開關進行切換。

＊2. 由於繼電器 R2 可將限時接點及瞬時接點互相切換，因此以 代表接點符號。

請正確使用

正確使用法

● 關於開關的切換方式

- 計時動作中，切換時間單位及限時 / 瞬時的切換開關是引發錯誤動作或故障的主要因素，因此切換時請務必關掉電源。

● 關於電源

- 請驟然增加電源電壓使其通過開關及繼電器等接點。如緩慢增加電壓，電源無法復歸，且會讓時間截止 (Time up)。

● 關於動作時間的設定

- 設定動作時間時，請勿將旋鈕轉出刻度範圍之外。需要較爲正確的時間限制時，請在使用前測試動作時間並以旋鈕調整之。
- 使用H3AM-NSR型前，請在復歸時(端子之間 ⑨-⑩ 增加電壓，進行復歸動作。
- 變更延長 H3AM-NSR 型的設定時間時，請在端子之間的 ⑨-⑩ 供應電源，在輸入復歸的狀態中進行。
- 安裝在面板上時，請採用規定的力矩值均衡鎖緊。尤其使用防水填料時，如採用規定之外的力矩值無法達到防水效果。

● 關於使用環境

- 在雜訊多的環境下使用計時器是造成雜訊的主要因素，因此請盡量將計時器本體與配線隔離。
- 請注意計時器本體的外包裝容易受到有機溶劑 (稀釋劑、揮發油)、強鹼及強酸物質的侵蝕。
- 請避免置放於灰塵多的地區、容易產生腐蝕氣體的地區及陽光直射的地區。
- 請避免在下列環境中使用。
  1. 溫度變化激烈之處
  2. 濕度高、有結霜之虞的場所
  3. 恐受水、油沫及藥品波及之處

● 其他

- 在組入控制盤的狀態下，進行電氣回路及非充電金屬之間的耐壓測試時，請將計時器從回路中拆下或短接。(因恐計時器的內部回路有破損之虞。)
- 增加額定電源電壓以外的電壓時，恐會破壞內部元件。

注意可因應 VDE 規格之相關事宜

H3AM 型以 VDE0435/P2021 爲基準，並將其視爲控制盤內藏的計時器使用，但是請遵守下列操作方式以符合本規格需求。

● 關於配線方法

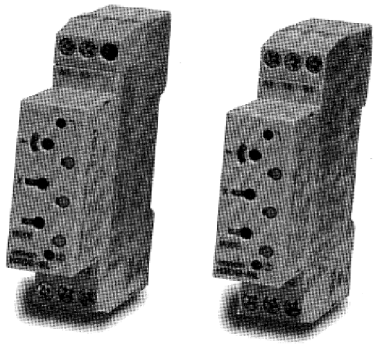
- H3AM 型的輸出部份得確實做到基本絕緣。請確保負載處的基本絕緣以確實達到 VDE 的強化絕緣 (雙重絕緣) 需求。

過電壓概念 III
污染度 2
絕緣
操作部份：強化絕緣 (雙重絕緣)
(絕緣距離在 AC240V 時，空間 5.5m、沿面 5.5mm)
輸出部份：基本絕緣
(絕緣距離在 AC240V 時，空間 3.0m、沿面 3.0mm)

H3DS/H3DE 型固態多功能計時器

H3DS 型固態多功能計時器

DIN 鋁軌安裝，17.5mm 寬幅盤內用標準計時器



・AC/DC 自由共用，AC24 ～ 230V，DC24 ～ 48V 大幅降低庫存壓力。
・H3DS-M 型有 8 種動作模態／H3DS-S 型有 4 種動作模態，符合廣泛運用。
・時間設定範圍 0.10 秒～ 120 小時。
・鎖機構，防止他人更改設定，可用特殊鎖型工具來解除。
・手指保護 (finger protection) 符合 VDE0106/P100。
・符合 EN61812-1(VDE0435/P2021) 及 (EN50081-1,EN50082-2) 規範。

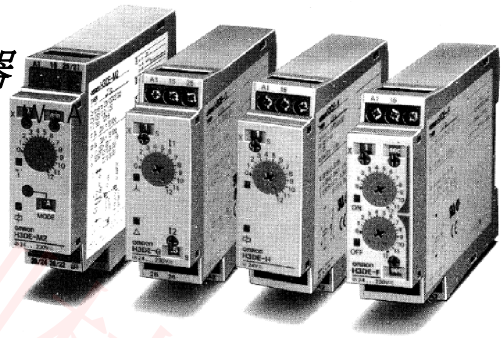
■機種

供應電壓	控制輸出	輸入型	模態	型式
24 ～ 230VAC (50/60HZ) 24 ～ 48VDC	接點輸出 SPDT	接電壓輸入	A/B/B2/C/D/E/G/J	H3DS-ML 型
		無輸入	A/B2/E/J	H3DS-SL 型
			A	H3DS-AL 型

註：8 個動作模態
A：ON-delay　B：閃爍OFF start　B2：閃爍ON start　C：信號ON/OFF delay　D：OFF delay　E：間歇　G：信號ON/OFF delay　J：信號One shot

H3DE 型固態多功能計時器

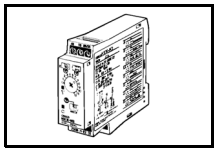
DIN22.5mm 寬幅般內用鋁軌安裝的標準計時器



・AC/DC 自由電源化（AC/DC24 ～ 230V）和大幅降低庫存壓力。
・取得 UL、CSA，依 EN61812-1（VDE0435P2021）基準。
・依 EN50081-1、EN50082-2 之 EMC 規格基準，除可用於工業環境上，亦可在住宅、商業、輕工業環境內使用。（H3DE-H 除外：依 EN50082-2 爲基準）
・注重環保，採用無鎘（AgNi）接點的繼電器。（H3DE-H 除外）
・備有特定之客戶用的名牌（name plate）。
・「小螺絲不掉落」「手指不誤觸」的端小構造（VDE0106/P100 基準）。

H3DE 系列

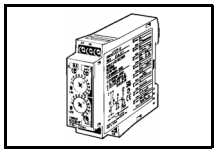
H3DS-M/S 型多功能計時
■ 8 動作多功能　H3DE-M1/M2



・動作模式
A：ON-delay
B：閃爍OFF 啓動
B2：閃爍ON 啓動
C：信號 ON/OFF 延遲
D：信號 OFF 延遲
E：間歇
G：信號 ON/OFF 延遲
J：觸發輸出（ON 延遲）

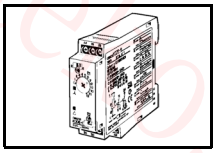
■ 4 動作多功能 H3DE-S1/S2
・動作模式
A：ON-delay
B2：閃爍ON 啓動
E：間歇
J：觸發輸出（ON 延遲）

H3DS-F 型
雙時間計時器



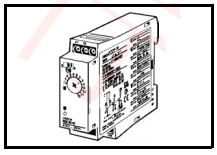
・動作模式
閃爍OFF 啓動
閃爍ON 啓動

H3DS-G 型
Y-△計時器



・動作模式
星形・三角形計時器

H3DS-H 型
電源OFF 延遲計時器



・動作模式
電源關閉延遲計時器

■ 型式基準

H3DE-□□
①②

① 型號

記號	含意
M	8 動作多功能
S	4 動作多功能
F	雙時間
G	星狀三角形
H	電源關閉延遲

② 輸出控制

記號	含意
1	1C 接點
2	2C 接點＊

＊只使用於 M、S 型

OMRON

Solid-state Timers
H3DK

DIN Track-mounted, 22.5-mm-width Standard Timer Series

- **A wide AC/DC power supply range (24 to 240 VAC/DC).*1**
- **All sub-series include models with 12-VDC power supply.*1**
- **G-type Models (H3DK-G) now include model with 240 to 440-VAC power supply.**
- **UL*3, CSA, and CCC*2 certification and EN 61812-1 compliance. CE Marking.**
- **EMC (EN 61812-1) compliance for application in heavy industrial, residential, commercial, or light industrial environments.**
- **Finger-safe terminal block and captive screws according to EN 50274.**

*1. Except for the H3DK-H.
*2. Certification for the H3DK-GE is scheduled to be obtained in the near future.
*3. Except for the H3DK-GE.

Model Number Structure

■ The Entire H3DK Series

H3DK Series

H3DK-M/-S Multi-range, Multi-mode Timers

Page 2

■ Eight-mode Timer
H3DK-M1/M2

● Operating Modes
A: ON Delay
B: Flicker OFF Start
B2: Flicker ON Start
C: Signal ON/OFF Delay
D: Signal OFF Delay
E: Interval
G: Signal ON/OFF Delay
J: One-shot Output

■ Four-mode Timer
H3DK-S1/S2

● Operating Modes
A: ON Delay
B2: Flicker ON Start
E: Interval
J: One-shot Output

H3DK-F Twin Timers

Page 11

● Operating Modes
Flicker-OFF Start/
Flicker-ON Start

H3DK-G Star-delta Timers

Page 15

● Operating Modes
Star-delta Timer

H3DK-H Power OFF-delay Timers

Page 21

● Operating Modes
Power OFF-delay Timer

■ Model Number Legend (Not all models that can be represented with the model number legend can necessarily be produced.)

H3DK-□□□□
1 2 3 4

1. Type

Symbol	Meaning
M	Eight-mode Timer
S	Four-mode Timer
F	Twin Timer
G	Star-delta Timer
H	Power OFF-delay Timer

2. Control Output

Symbol	Meaning
1	SPDT
2	DPDT

* M- and S-type models only.

3. Supply Voltage

Symbol	Meaning
Blank	24 to 240 VAC/DC
A	12 VDC
B	24 to 48 VAC/DC
C	100 to 120 VAC
D	200 to 240 VAC
E	240 to 440 VAC *

* G-type models only.

4. Time Ranges (H-type Models Only)

Symbol	Meaning
S	0.1 to 1.2 s or 1 to 12 s
L	1 to 12 s or 10 to 120 s

OMRON

Multi-range, Multi-mode Timer
H3DK-M/H3DK-S

- **Multiple time ranges and operating modes let you cover a wide range of applications.**
- **The time-limit DPDT output contacts can be changed to time-limit SPDT and instantaneous SPDT output contacts using a switch.**
- **Sequence checks are easily performed by setting an instantaneous output to 0.**
- **Start signal control for the H3DK-M.**

Ordering Information

■ List of Models

Supply voltage	Control output		Eight-mode Timer	Four-mode Timer
24 to 240 VAC/DC	Contact output, DPDT (time-limit DPDT, or time-limit SPDT + instantaneous SPDT) Changed using a switch.	Model	**H3DK-M2**	**H3DK-S2**
	Contact output, SPDT (time-limit SPDT)	Model	**H3DK-M1**	**H3DK-S1**
12 VDC	Contact output, DPDT (time-limit DPDT, or time-limit SPDT + instantaneous SPDT) Changed using a switch.	Model	**H3DK-M2A**	**H3DK-S2A**
	Contact output, SPDT (time-limit SPDT)	Model	**H3DK-M1A**	**H3DK-S1A**

■ Accessories (Order Separately)

Item	Specification	Model
Mounting Track	50 cm (l) x 7.3 mm (t)	**PFP-50N**
	1 m (l) x 7.3 mm (t)	**PFP-100N**
	1 m (l) x 16 mm (t)	**PFP-100N2**
End Plate	---	**PFP-M**
Spacer	---	**PFP-S**

■ Model Structure

Model	Operating modes	Terminal block	Input type	Output type	Mounting method	Safety standards	Accessories
H3DK-M2	A: ON Delay B: Flicker OFF start B2: Flicker ON start C: Signal ON/OFF Delay D: Signal OFF Delay E: Interval G: Signal ON/OFF Delay J: One-shot Output	9 terminals	Voltage input	Relay, DPDT	DIN Track mounting	cURus (UL 508 CSA C22.2 No. 14) EN 61812-1 IEC 60664-1 4 kV/2 EN 50274	User label
H3DK-M1				Relay, SPDT			
H3DK-S2	A: ON Delay B2: Flicker ON start E: Interval J: One-shot Output		---	Relay, DPDT			
H3DK-S1		6 terminals		Relay, SPDT			

Specifications

■ Time Ranges

Time range setting	0.1 s	1 s	10 s	1 min	10 min	1 h	10 h	100 h
Set time range	0.1 to 1.2 s	1 to 12 s	10 to 120 s	1 to 12 min	10 to 120 min	1 to 12 h	10 to 120 h	100 to 1,200 h
Scale numbers	12							

■ Ratings

Power supply voltage *1		• 24 to 240 VAC/DC, 50/60 Hz *2 • 12 VDC *2
Allowable voltage fluctuation range		• 24 to 240 VAC/DC: 85% to 110% of rated voltage • 12 VDC: 90% to 110% of rated voltage
Power reset		Minimum power-OFF time: 0.1 s
Reset voltage		10% of rated voltage
Voltage input		• 24 to 240 VAC/DC High level: 20.4 to 264 VAC/DC, Low level: 0 to 2.4 VAC/DC • 12 VDC High level: 10.8 to 13.2 VDC, Low level: 0 to 1.2 VDC
Power consumption *3	H3DK-M2/-S2	At 240 VAC: 6.6 VA max. *4
	H3DK-M1/-S1	At 240 VAC: 4.5 VA max. *4
	H3DK-M2A/-S2A	At 12 VDC: 0.9 W max.
	H3DK-M1A/-S1A	At 12 VDC: 0.6 W max.
Control output		Contact output, 5 A at 250 VAC with resistive load (cosϕ = 1), 5 A at 30 VDC with resistive load *4, *5
Ambient operating temperature		–20 to 55°C (with no icing)
Storage temperature		–40 to 70°C (with no icing)
Ambient operating humidity		25% to 85%

*1. When using a 24-VDC power supply voltage, there will be an inrush current of approximately 0.25 A. Allow for this inrush current when turning ON and OFF the power supply to the Timer with device with a solid-state output, such as a sensor.
*2. DC ripple: 20% max.
*3. The power consumption is for mode A after the Timer times out.
For the H3DK-M□, the maximum power consumption is given, including the current consumed by the input circuit.
*4. Refer to *DC Power Consumptions (Reference Information)* on page 27 for DC power consumptions.
*5. The control output ratings are for one H3DK operating alone. If you operate two or more Timers side by side, refer to *Installation Pitch and Output Switching Capacity (Reference Values)* on the next page.
*6. 125 VDC: 0.15 A max. with resistive load, 125 VDC: 0.1 A with L/R of 7 ms.
Minimum load: 10 mA at 5 VDC (P level, reference value)

■ Characteristics

Accuracy of operating time		±1% of FS max. (±1% ±10 ms max. at 1.2-s range)*
Setting error		±10% of FS ±0.05 s max.*
Minimum input signal width		50 ms* (start input)
Influence of voltage		±0.5% of FS max. (±0.5% ±10 ms max. at 1.2-s range)
Influence of temperature		±2% of FS max. (±2% ±10 ms max. at 1.2-s range)
Insulation resistance		100 MΩ min. at 500 VDC
Dielectric strength		Between current-carrying metal parts and exposed non-current-carrying metal parts: 2,000 VAC 50/60 Hz for 1 min. Between control output terminals and operating circuit: 2,000 VAC 50/60 Hz for 1 min. Between contacts not located next to each other: 1,000 VAC 50/60 Hz for 1 min.
Impulse withstand voltage		24 to 240 VAC/VDC: 3 kV between power terminals, 4.5 kV between current-carrying metal parts and exposed non-current-carrying metal parts 12 VDC: 1 kV between power terminals, 1.5 kV between current-carrying metal parts and exposed non-current-carrying metal parts
Noise immunity		Square-wave noise generated by noise simulator (pulse width: 100 ns/1 µs, 1-ns rise): ±1.5 kV
Static immunity		Malfunction: 4 kV, Destruction: 8 kV
Vibration resistance	Destruction	0.75-mm single amplitude at 10 to 55 Hz for 2 h each in 3 directions
	Malfunction	0.5-mm single amplitude at 10 to 55 Hz for 10 min each in 3 directions
Shock resistance	Destruction	1,000 m/s² 3 times each in 6 directions
	Malfunction	100 m/s² 3 times each in 6 directions
Life expectancy	Mechanical	10 million operations min. (under no load at 1,800 operations/h)
	Electrical	100,000 operations min. (5 A at 250 VAC, resistive load at 360 operations/h)
Degree of protection		IP30 (Terminal block: IP20)
Weight		Approx. 120 g

* With the H3DK-M□, if the voltage exceeds 26.4 VAC/DC in mode C, D, or G, the OFF trigger signal characteristics are as follows:
Accuracy of operating time: ±1% ±50 ms max.
Setting error: ±10% $^{+100\ ms}_{-50\ ms}$ max.
Minimum input signal width: 100 ms

■ Applicable standards

Safety standards	cURus: UL 508/CSA C22.2 No. 14 EN 50274: Finger protection, back-of-hand proof EN 61812-1: Pollution degree 2, Overvoltage category III CCC: Pollution degree 2, Overvoltage category II, section DB14048.5-2008 part 5-1 LR: Test Specification No. 1-2002 Category ENV 1.2	
EMC	(EMI)	EN61812-1
	Radiated Emissions:	EN 55011 class B
	Emission AC Mains:	EN 55011 class B
	Harmonic Current:	EN 61000-3-2
	Voltage Fluctuations and Flicker:	EN61000-3-3
	(EMS)	EN61812-1
	ESD Immunity:	EN 61000-4-2: 6 kV contact discharge, 8 kV air discharge
	Radiated Radio-Frequency Electromagnetic Field Immunity (AM Radio Waves):	
		EN 61000-4-3: 10 V/m (80 MHz to 1 GHz)
	Burst Immunity:	EN 61000-4-4: 2 kV power line, 1 kV I/O signal line
	Surge Immunity:	EN 61000-4-5: 2 kV common mode, 1 kV differential mode

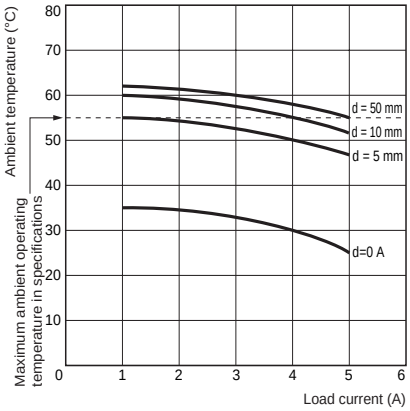
■ I/O

Item	Model	H3DK-M1/-M2	H3DK-S1/-S2
Input	Start	Functions to start timing.	There is no start input.
Output	Control output	The output is turned ON/OFF according to the operating mode when the value that is set on the dial is reached. *	

* If the INST/TIME switch on the front of the Timer is set to INST on the H3DK-M2/-S2, relay R2 will operate as instantaneous contacts and will turn ON/OFF in synchronization with the power supply.

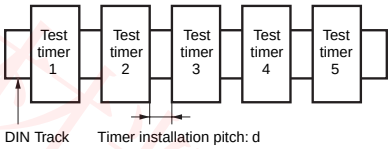
● Installation Pitch and Output Switching Capacity (Reference Values)

The relation between the installation pitch and the load current is shown in the following graph. (Except for the H3DK-GE)
If Timer is used under load conditions that exceed the specified values, the temperature inside the Timer will increase, reducing the life expectancy of internal parts.



Testing Method

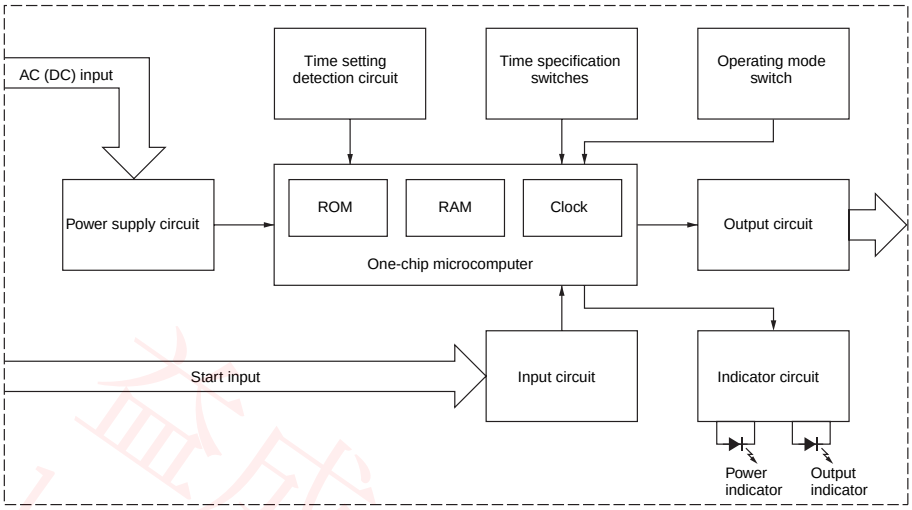
Tested Timer: H3DK-M/-S
Applied voltage: 240 VAC
Installation pitch: 0, 5, 10, and 50 mm



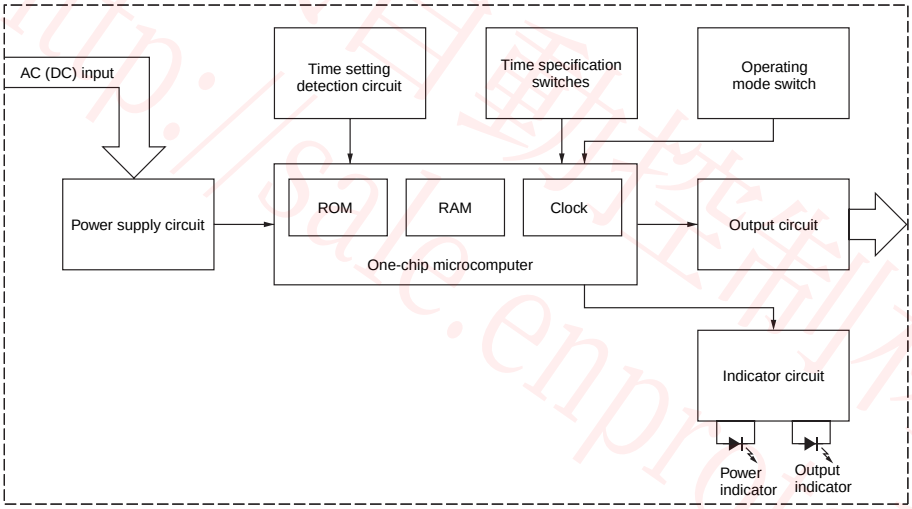
Connections

■Block Diagrams

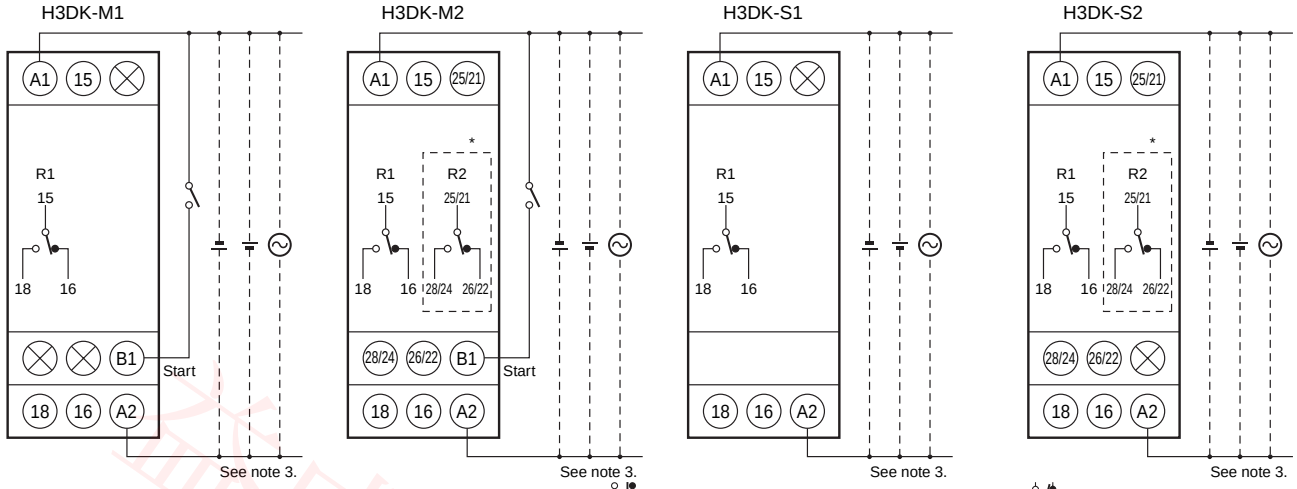
H3DK-M1/-M2



H3DK-S1/-S2



■ Terminal Arrangement



Note 1: The time-limit contact symbol for previous models of Timers was . The time-limit contact symbol for the H3DK is . A different symbol is used because the H3DK supports multiple operating modes.

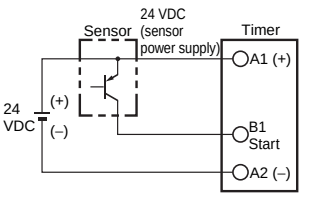
Note 2: *The relay R2 can be set to either instantaneous or time-limit contacts using the switch on the front of the Timer.

Note 3: The power supply terminals do not have polarity.

■ Input Connections

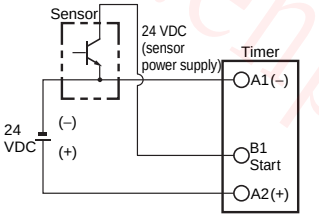
The start input of the H3DK-M1/-M2 is a voltage input.

PNP Transistor Input



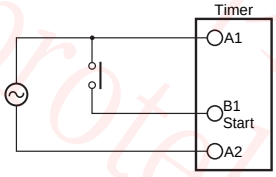
Operates when PNP transistor turns ON.

NPN Transistor Input



Operates when NPN transistor turns ON.

Relay Input



Operates when relay turns ON.

Consider the minimum load of the relay. (See signal levels on the right.)

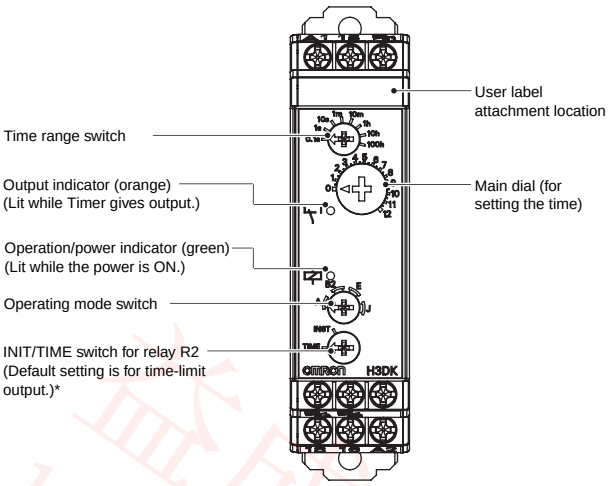
Voltage Input Signal Levels

Transistor input	1. Transistor ON • Residual voltage: 1 V max. Voltage between terminals B1 and A2 must be equal to or higher than the rated high level voltage (20.4 VDC min.).
	2. Transistor OFF • Leakage current: 0.01 mA max. Voltage between terminals B1 and A2 must be equal to or below the rated low level voltage (2.4 VDC min.).
Relay input	Use relays that can adequately switch 0.1 mA at the imposed voltage. When the relay is ON or OFF, the voltage between terminals B1 and A2 must be within the following ranges: • 24 to 240 VAC/DC When relay is ON: 20.4 to 264 VAC/DC When relay is OFF: 0 to 2.4 V • 12 VDC When relay is ON: 10.8 to 13.2 V When relay is OFF: 0 to 1.2 V

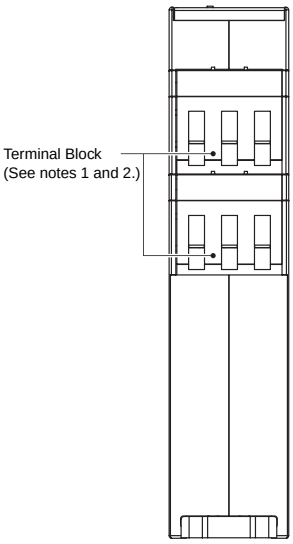
Nomenclature

H3DK-M2
H3DK-S2

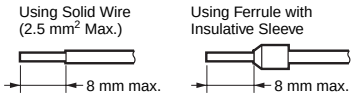
Front View



Bottom View



Note 1. Use solid wire (2.5 mm² max.) or ferrules with insulative sleeves to connect to the terminals.
To maintain the withstand voltage after connecting the terminals, insert no more than 8 mm of exposed conductor into the terminal.



Recommended Ferrules
Phoenix Contact
- AI□□□ Series
- AI-TWIN□□□ Series

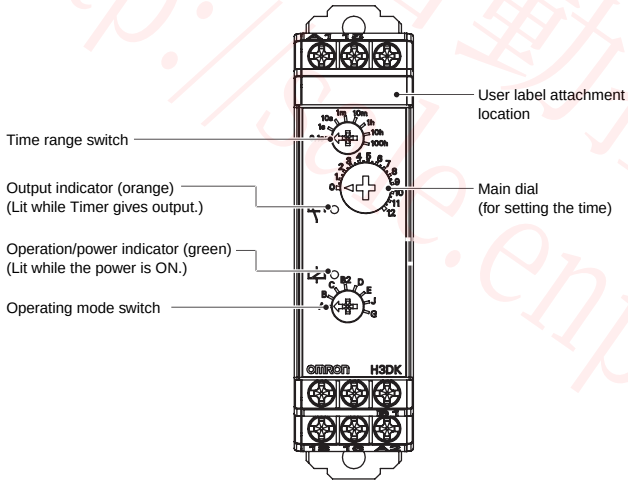
Note 2. Screw Tightening Torque
Recommended torque: 0.49 N·m
Maximum torque: 0.98 N·m

*If the switch is left between settings, proper operation may not be possible. Make sure that the switch is set properly.

Note: The default settings are for 0.1 s in mode A.

H3DK-M1

Front View

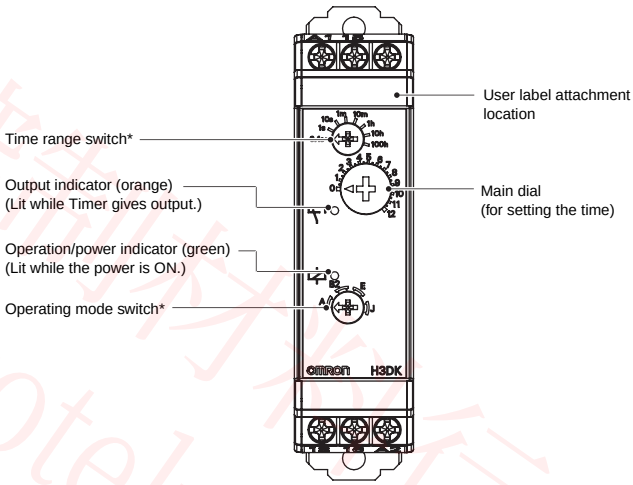


*If the switch is left between settings, proper operation may not be possible. Make sure that the switch is set properly.

Note: The default settings are for 0.1 s in mode A.

H3DK-S1

Front View



*If the switch is left between settings, proper operation may not be possible. Make sure that the switch is set properly.

Note: The default settings are for 0.1 s in mode A.

Dimensions

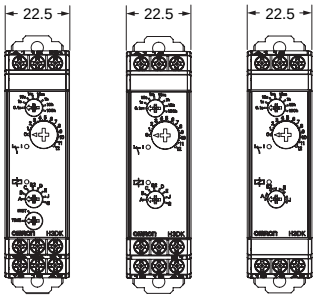
(Unit: mm)

■ Timers

H3DK-M
H3DK-S

H3DK-M2
H3DK-S2

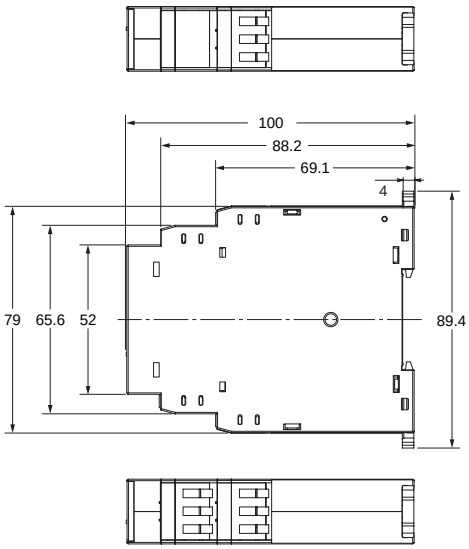
H3DK-M1
H3DK-S1



H3DK-M2
H3DK-S2

H3DK-M1

H3DK-S1



■ Track Mounting Products (Sold Separately)

Refer to page 28 for details.

Operating Procedures

■ Basic Operation

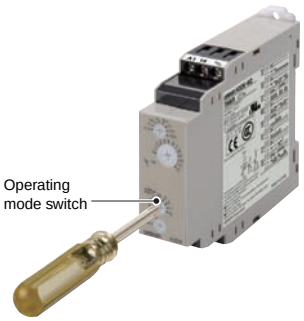
● Setting Switches

- Each switch has a snap mechanism that secures the switch at given positions. Set the switch to one of these positions. Do not set it midway between two positions. Malfunction could result from an improper setting.

Setting the Operating Mode

● Setting the Operating Mode

The H3DK-M can be set to any of eight operating modes. The H3DK-S can be set to any of four operating modes. Turn the operating mode switch with a flat-blade or Phillips screwdriver. The H3DK-M can be set to any of eight modes; the H3DK-S, to any of four modes.



Setting the INIT/TIME Switch

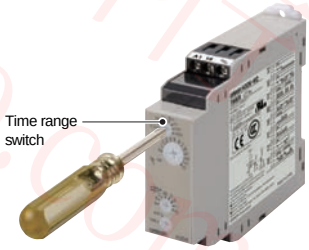
● Switching Relay R2 between Instantaneous and Time-limit Contacts (H3DK-M2/-S2 Only)

The INIT/TIME switch can be used to switch relay R2 between instantaneous and time-limit operation.

Setting the Time Range

● Setting the Time Range

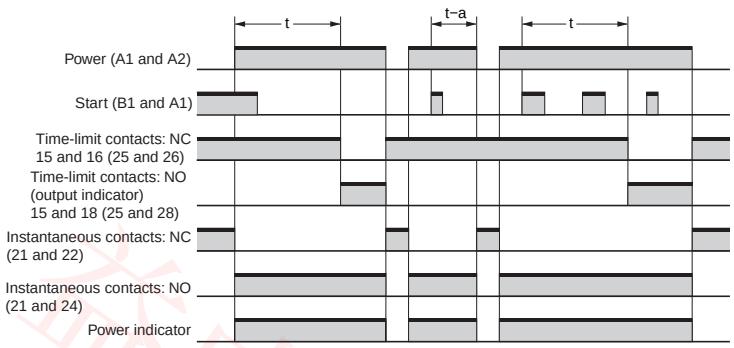
The time range switch can be used to set the time range. Turn the switch with a flat-blade or Phillips screwdriver.



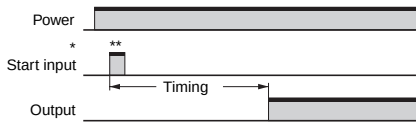
■ Timing Charts

- There is no start input with the H3DK-S. Timer operation starts when the power is turned ON.
- There is no instantaneous output with the H3DK-□1.

A: ON Delay

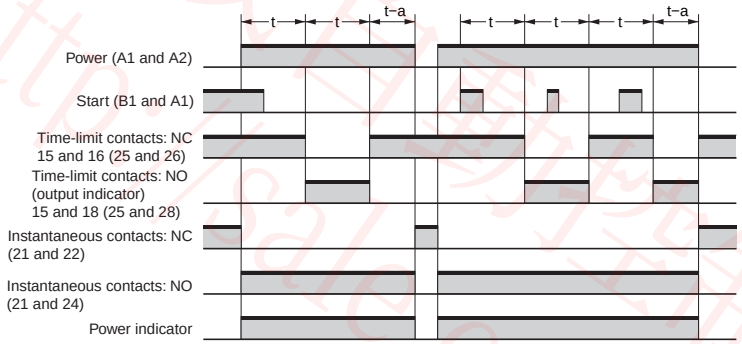


Basic Operation

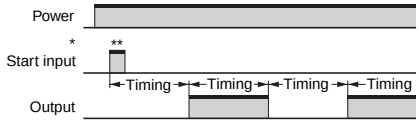


* For power ON-delay operation, connect start input terminals B1 and A1. The Timer starts operating as soon as the power turns ON.
** The start input is ignored while the Timer is in operation.

B: Flicker OFF Start

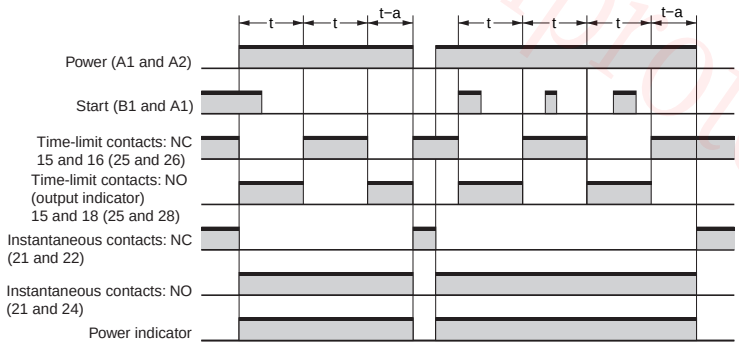


Basic Operation

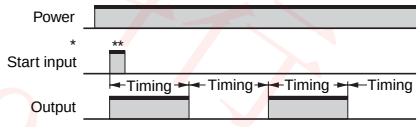


* To start with the power supply, connect start input terminals B1 and A1. The Timer starts operating as soon as the power turns ON.
** The start input is ignored while the Timer is in operation.

B2: Flicker ON start

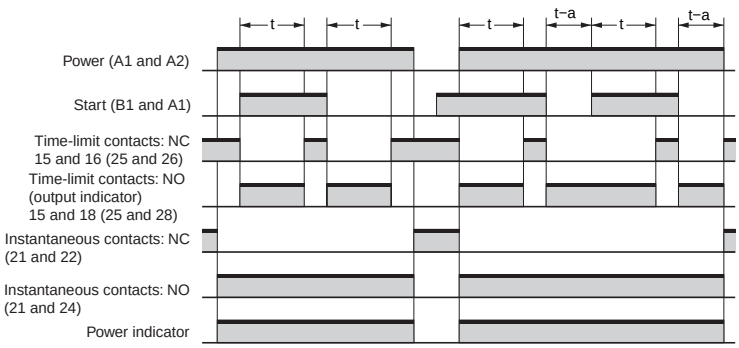


Basic Operation

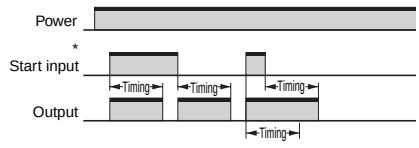


* To start with the power supply, connect start input terminals B1 and A1. The Timer starts operating as soon as the power turns ON.
** The start input is ignored while the Timer is in operation.

C: Signal ON/ OFF Delay



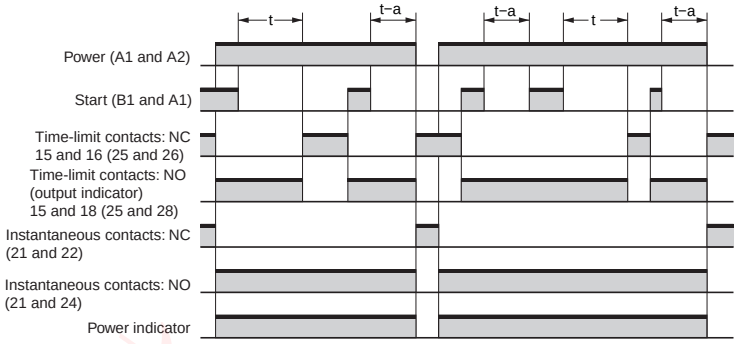
Basic Operation



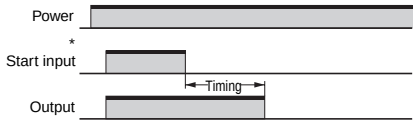
* The start input is valid while the Timer is in operation.

Note 1.The reset time is 0.1 s min. Make sure the signal input time is 0.05 s or longer.
Note 2.“t” is the set time. “t–a” is a time that is less that the set time.

D: Signal OFF delay

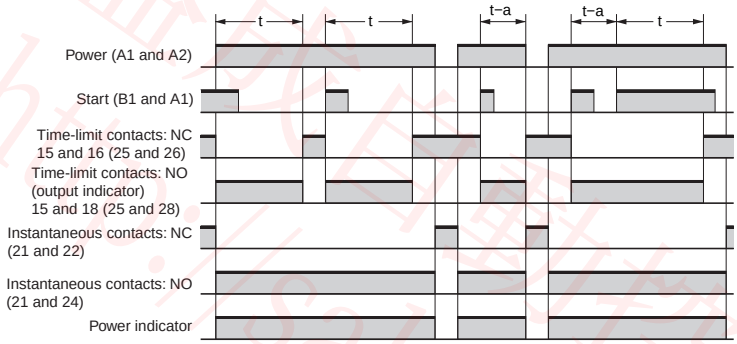


Basic Operation

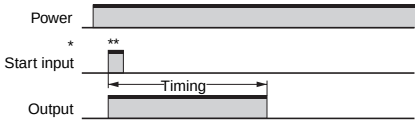


* The start input is valid while the Timer is in operation.

E: Interval

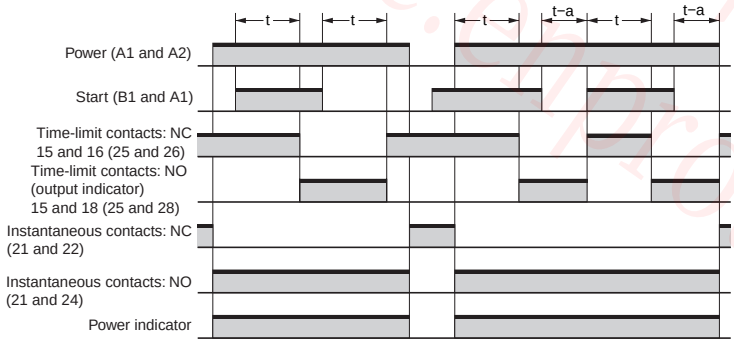


Basic Operation

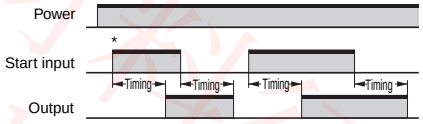


* For power ON-delay operation, connect start input terminals B1 and A1. The Timer starts operating as soon as the power turns ON.
** The start input is valid while the Timer is in operation.

G: Signal ON/ OFF Delay

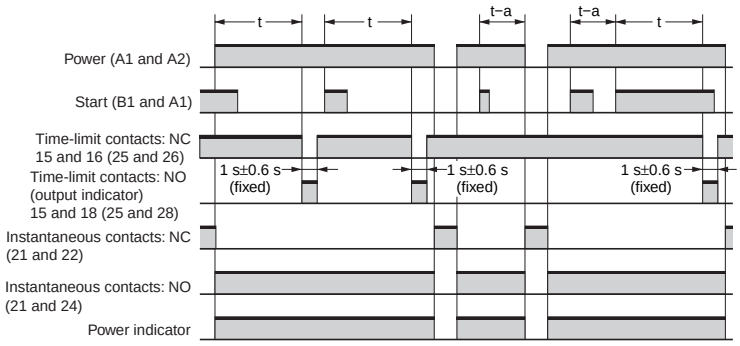


Basic Operation

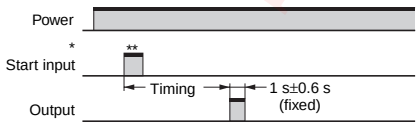


* The start input is valid while the Timer is in operation.

J: One-shot Output (ON delay)



Basic Operation



* To start with the power supply, connect start input terminals B1 and A1. The Timer starts operating as soon as the power turns ON.
** The start input is valid while the Timer is in operation.

Note 1.The reset time is 0.1 s min. Make sure the signal input time is 0.05 s or longer.
Note 2."t" is the set time. "t–a" is a time that is less that the set time.

OMRON

Twin Timer
H3DK-F

- **Switch between flicker-OFF or flicker-ON start mode.**
- **Independent ON time and OFF time settings.**
- **Eight time ranges from 0.1 s to 1,200 h.**

Ordering Information

■ List of Models

Operating modes	Supply voltage	Control output		H3DK-F
Flicker OFF start/flicker ON start	24 to 240 VAC/DC	Contact output: SPDT	Model	**H3DK-F**
	12 VDC	Contact output: SPDT	Model	**H3DK-FA**

■ Accessories (Order Separately)

Item	Specification	Model
Mounting Track	50 cm (l) x 7.3 mm (t)	**PFP-50N**
	1 m (l) x 7.3 mm (t)	**PFP-100N**
	1 m (l) x 16 mm (t)	**PFP-100N2**
End Plate	---	**PFP-M**
Spacer	---	**PFP-S**

■ Model Structure

Model	Operating modes	Terminal block	Output type	Mounting method	Safety standards	Accessories
H3DK-F	Flicker OFF start/flicker ON start	6 terminals	Relay, SPDT	DIN Track mounting	cURus (UL508 CSA C22.2 No. 14) EN 61812-1 IEC 60664-1 4 kV/2 EN 50274	User label

Specifications

■ Time Ranges

Time range setting	0.1 s	1 s	10 s	1 min	10 min	1 h	10 h	100 h
Set time range	0.1 to 1.2 s	1 to 12 s	10 to 120 s	1 to 12 min	10 to 120 min	1 to 12 h	10 to 120 h	100 to 1,200 h
Scale numbers	12							

■ Ratings

Power supply voltage *1		• 24 to 240 VAC/DC, 50/60 Hz *2 • 12 VDC *2
Allowable voltage fluctuation range		• 24 to 240 VAC/DC: 85% to 110% of rated voltage • 12 VDC: 90% to 110% of rated voltage
Power reset		Minimum power-OFF time: 0.1 s
Reset voltage		10% of rated voltage
Power consumption	H3DK-F	At 240 VAC: 4.5VA max. *3
	H3DK-FA	At 12 VDC: 0.6 W max.
Control output		Contact output (SPDT): 5 A at 250 VAC with resistive load ($\cos\phi$ = 1) 5 A at 24 VDC with resistive load *3, *4
Ambient operating temperature		–20 to 55°C (with no icing)
Storage temperature		–40 to 70°C (with no icing)
Ambient operating humidity		25% to 85%

*1. When using a 24-VDC power supply voltage, there will be an inrush current of approximately 0.25 A. Allow for this inrush current when turning ON and OFF the power supply to the Timer with device with a solid-state output, such as a sensor.
*2. DC ripple: 20% max.
*3. Refer to *DC Power Consumptions (Reference Information)* on page 27 for DC power consumptions.
*4. The control output ratings are for one H3DK operating alone. If you operate two or more Timers side by side, refer to *Installation Pitch and Output Switching Capacity (Reference Values)* on the next page.
*5. 125 VDC: 0.15 A max. with resistive load, 125 VDC: 0.1 A with L/R of 7 ms.
Minimum load: 10 mA at 5 VDC (P level, reference value)

■ Characteristics

Accuracy of operating time		±1% of FS max. (±1% ±10 ms max. at 1.2-s range)
Setting error		±10% of FS ±0.05 s max.
Influence of voltage		±0.5% of FS max. (±0.5% ±10 ms max. at 1.2-s range)
Influence of temperature		±2% of FS max. (±2% ±10 ms max. at 1.2-s range)
Insulation resistance		100 MΩ min. at 500 VDC
Dielectric strength		Between current-carrying metal parts and exposed non-current-carrying metal parts: 2,000 VAC 50/60 Hz for 1 min. Between control output terminals and operating circuit: 2,000 VAC 50/60 Hz for 1 min. Between contacts not located next to each other: 1,000 VAC 50/60 Hz for 1 min.
Impulse withstand voltage		24 to 240 VAC/VDC: 3 kV between power terminals, 4.5 kV between current-carrying metal parts and exposed non-current-carrying metal parts 12 VDC: 1 kV between power terminals, 1.5 kV between current-carrying metal parts and exposed non-current-carrying metal parts
Noise immunity		Square-wave noise generated by noise simulator (pulse width: 100 ns/1 µs, 1-ns rise): ±1.5 kV
Static immunity		Malfunction: 4 kV, Destruction: 8 kV
Vibration resistance	Destruction	0.75-mm single amplitude at 10 to 55 Hz for 2 h each in 3 directions
	Malfunction	0.5-mm single amplitude at 10 to 55 Hz for 10 min each in 3 directions
Shock resistance	Destruction	1,000 m/s² 3 times each in 6 directions
	Malfunction	100 m/s² 3 times each in 6 directions
Life expectancy	Mechanical	10 million operations min. (under no load at 1,800 operations/h)
	Electrical	100,000 operations min. (5 A at 250 VAC, resistive load at 360 operations/h)
Degree of protection		IP30 (Terminal block: IP20)
Weight		Approx. 110 g

■ Applicable standards

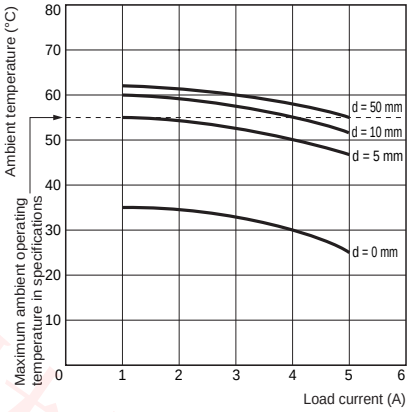
Safety standards	cURus: UL 508/CSA C22.2 No. 14 EN 50274: Finger protection, back-of-hand proof EN 61812-1: Pollution degree 2, Overvoltage category III CCC: Pollution degree 2, Overvoltage category II, section DB14048.5-2008 part 5-1 LR: Test Specification No. 1-2002 Category ENV 1.2
EMC	(EMI) EN61812-1 Radiated Emissions: EN 55011 class B Emission AC Mains: EN 55011 class B Harmonic Current: EN 61000-3-2 Voltage Fluctuations and Flicker: EN61000-3-3 (EMS) EN61812-1 ESD Immunity: EN 61000-4-2: 6 kV contact discharge, 8 kV air discharge Radiated Radio-Frequency Electromagnetic Field Immunity (AM Radio Waves): EN 61000-4-3: 10 V/m (80 MHz to 1 GHz) Burst Immunity: EN 61000-4-4: 2 kV power line, 1 kV I/O signal line Surge Immunity: EN 61000-4-5: 2 kV common mode, 1 kV differential mode

■ I/O

Input		None
Output	Control output	Output is turned ON/OFF according to the time set on the ON time setting dial and OFF time setting dial.

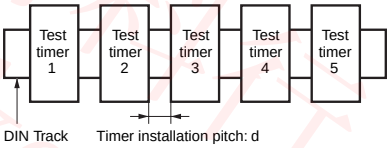
● Installation Pitch and Output Switching Capacity (Reference Values)

The relation between the installation pitch and the load current is shown in the following graph. (Except for the H3DK-GE)
If Timer is used under load conditions that exceed the specified values, the temperature inside the Timer will increase, reducing the life expectancy of internal parts.



Testing Method

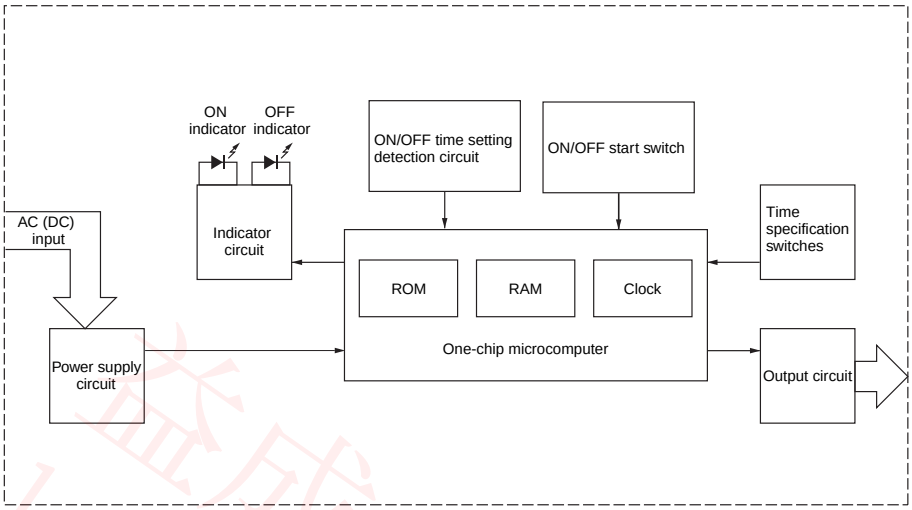
Tested Timer: H3DK-F
Applied voltage: 240 VAC
Installation pitch: 0, 5, 10, and 50 mm



Connections

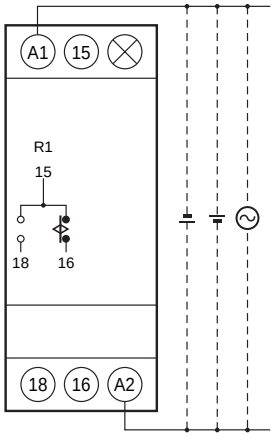
■ Block Diagrams

H3DK-F

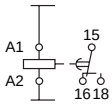


■ Terminal Arrangement

H3DK-F



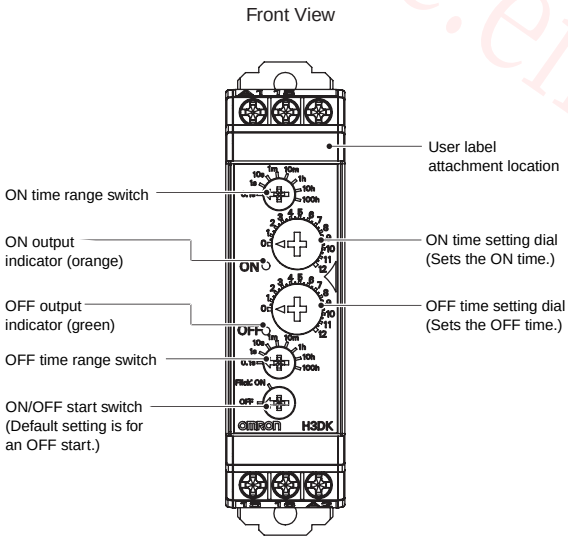
(DIN notation)

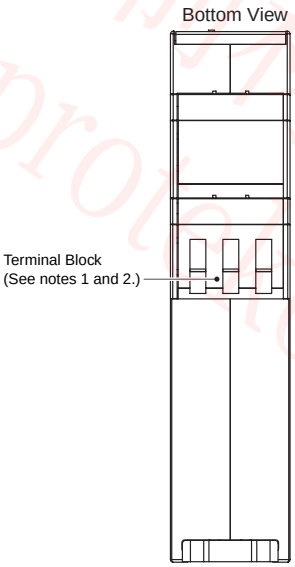


Note: The power supply terminals do not have polarity.

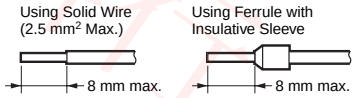
Nomenclature

H3DK-F





Note 1. Use solid wire (2.5 mm² max.) or ferrules with insulative sleeves to connect to the terminals.
To maintain the withstand voltage after connecting the terminals, insert no more than 8 mm of exposed conductor into the terminal.



Recommended Ferrules
Phoenix Contact
- AI□□□ Series
- AI-TWIN□□□ Series

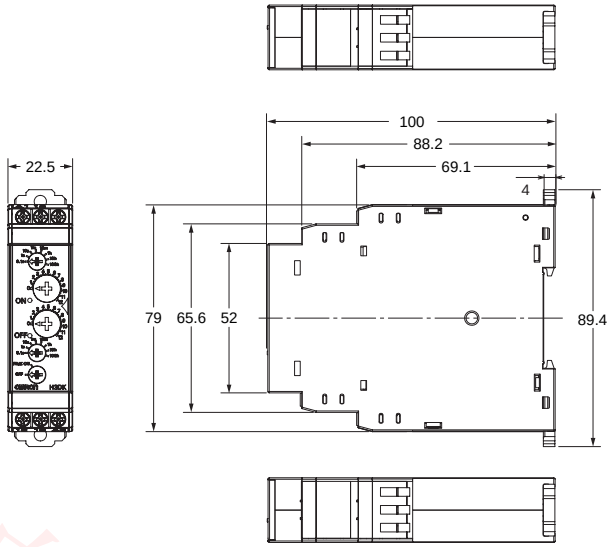
Note 2. Screw Tightening Torque
Recommended torque: 0.49 N·m
Maximum torque: 0.98 N·m

Dimensions

(Unit: mm)

■ Timers

H3DK-F



■ Track Mounting Products (Sold Separately)

Refer to page 28 for details.

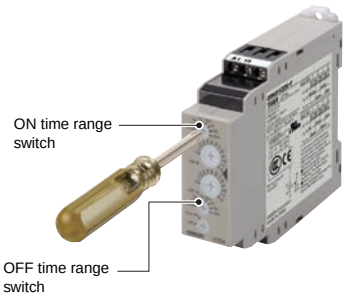
Operating Procedures

■ Basic Operation

Setting the Time Ranges

● Setting the Time Ranges

Use the ON time range switch to set the ON time range and the OFF time range switch to set the OFF time range. Turn the switches with a flat-blade or Phillips screwdriver.



Setting the ON/OFF Start Switch

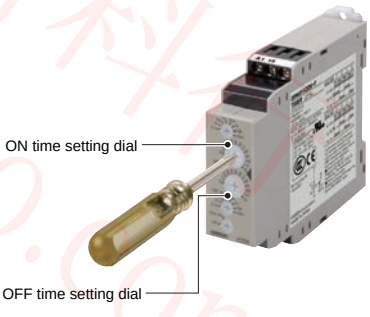
● Setting an ON Start or OFF Start

The ON/OFF start switch can be used to switch between ON-start and OFF-start operation.

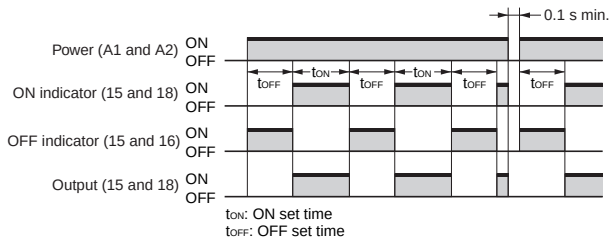
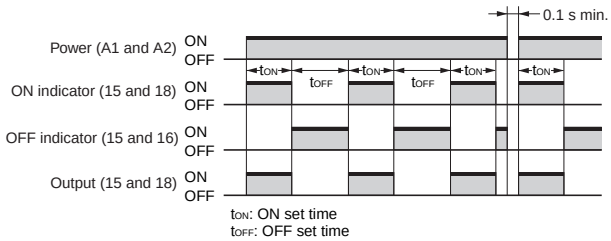
Setting the Times

● Setting the Times

Use the ON time setting dial and the OFF time setting dial to set the ON time and OFF time.



■ Timing Charts

Flicker OFF start	Flicker ON start
	

Note 1. The reset time is 0.1 s min.
Note 2. When power is supplied in flicker ON start mode, the OFF indicator lights momentarily. This, however, has no effect on the performance of the Timer.

OMRON

Star-delta Timer
H3DK-G

- **Set two time ranges between 1 and 120 s with one Timer.**
- **Models with 240 to 440-VAC power supply added to series.**

Ordering Information

■ List of Models

Operating modes	Supply voltage	Control output		H3DK-G
Star-delta Timer	24 to 240 VAC/DC	Contact outputs Delta circuit: SPDT, Star circuit: SPDT	Model	**H3DK-G**
	12 VDC		Model	**H3DK-GA**
	240 to 440 VAC		Model	**H3DK-GE**

■ Accessories (Order Separately)

Item	Specification	Model
Mounting Track	50 cm (l) x 7.3 mm (t)	**PFP-50N**
	1 m (l) x 7.3 mm (t)	**PFP-100N**
	1 m (l) x 16 mm (t)	**PFP-100N2**
End Plate	---	**PFP-M**
Spacer	---	**PFP-S**

■ Model Structure

Model	Terminal block	Operating/resetting method	Output type	Mounting method	Safety standards	Accessories
H3DK-G	9 terminals	Time-limit operation/self-resetting	Time-limit (relay) Star circuit: SPDT Delta circuit: SPDT	DIN Track mounting	cURus*1 (UL 508 CSA C22.2 No. 14) EN 61812-1 IEC 60664-1 4 kV/2 EN 50274	User label

*1. Except for the H3DK-GE.

Specifications

■ Time Ranges

Time range setting	t1x1	t1x10
Star set time (t1) range	1 to 12 s	10 to 120 s

Star-Delta transfer time (t2)	Select from 0.05, 0.1, 0.25, or 0.5 s.

■ Ratings

		H3DK-G, -GA	H3DK-GE
Power supply voltage *1		• 24 to 240 VAC/DC, 50/60 Hz *2 • 12 VDC *2	• 240 to 440 VAC (50/60 Hz) *6
Allowable voltage fluctuation range		• 24 to 240 VAC/DC: 85% to 110% of rated voltage • 12 VDC: 90% to 110% of rated voltage	80 % to 110% of rated voltage
Power reset		Minimum power-OFF time: 0.5 s	
Reset voltage		10% of rated voltage	
Power consumption	H3DK-G	At 240 VAC: 6.6 VA max. *3	At 440 VAC: 34 VA max.
	H3DK-GA	At 12 VDC: 0.9 W max.	
Control output		Contact output (Time-limit output: relay, Star output: SPDT, Delta output: SPDT): 5 A at 250 VAC with resistive load ($\cos\phi$ = 1) 5 A at 24 VDC with resistive load *3, *4	Ith 2 A AC-15 120 VAC: 1.5 A AC-15 240 VAC: 1 A AC-15 440 VAC: 0.3 A
Ambient operating temperature		–20 to 55°C (with no icing)	
Storage temperature		–40 to 70°C (with no icing)	
Ambient operating humidity		25% to 85%	

*1. When using a 24-VDC power supply voltage, there will be an inrush current of approximately 0.25 A. Allow for this inrush current when turning ON and OFF the power supply to the Timer with device with a solid-state output, such as a sensor.
*2. DC ripple: 20% max.
*3. Refer to *DC Power Consumptions (Reference Information)* on page 27 for DC power consumptions.
*4. The control output ratings are for one H3DK operating alone. If you operate two or more Timers side by side, refer to *Installation Pitch and Output Switching Capacity (Reference Values)* on the next page.
*5. 125 VDC: 0.15 A max. with resistive load, 125 VDC: 0.1 A with L/R of 7 ms.
Minimum load: 10 mA at 5 VDC (P level, reference value)
*6. For the H3DK-GE, approx. 6 A of inrush current will flow when the power supply is turned ON. When selecting the device connected to the Timer, allow leeway in the current ratings.

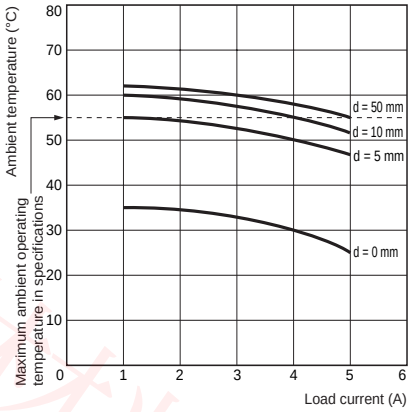
■ Characteristics

		H3DK-G, -GA	H3DK-GE
Accuracy of operating time		±1% of FS max.	
Setting error		±10% of FS ±0.05 s max.	
Transfer time		Total error ± (25% of transfer time + 5 ms) max.	
Influence of voltage		±0.5% of FS max.	
Influence of temperature		±2% of FS max.	
Insulation resistance		100 MΩ min. at 500 VDC	
Dielectric strength		Between current-carrying metal parts and exposed non-current-carrying metal parts: 2,000 VAC 50/60 Hz for 1 min. Between control output terminals and operating circuit: 2,000 VAC 50/60 Hz for 1 min. Between contacts not located next to each other: 1,000 VAC 50/60 Hz for 1 min.	Between current-carrying metal parts and exposed non-current-carrying metal parts: 2,500 VAC 50/60 Hz for 1 min. Between control output terminals and operating circuit: 2,500 VAC 50/60 Hz for 1 min. Between contacts not located next to each other: 1,000 VAC 50/60 Hz for 1 min.
Impulse withstand voltage		H3DK-G: 24 to 240 VAC/VDC: 3 kV between power terminals, 4.5 kV between current-carrying metal parts and exposed non-current-carrying metal parts H3DK-GA: 12 VDC: 1 kV between power terminals, 1.5 kV between current-carrying metal parts and exposed non-current-carrying metal parts	---
Noise immunity		Square-wave noise generated by noise simulator (pulse width: 100 ns/1 µs, 1-ns rise): ±1.5 kV*	
Static immunity		Malfunction: 4 kV, Destruction: 8 kV	
Vibration resistance	Destruction	0.75-mm single amplitude at 10 to 55 Hz for 2 h each in 3 directions	
	Malfunction	0.5-mm single amplitude at 10 to 55 Hz for 10 min each in 3 directions	
Shock resistance	Destruction	1,000 m/s² 3 times each in 6 directions	
	Malfunction	100 m/s² 3 times each in 6 directions	
Life expectancy	Mechanical	10 million operations min. (under no load at 1,800 operations/h)	10 million operations min. (under no load at 1,800 operations/h)
	Electrical	100,000 operations min. (5 A at 250 VAC, resistive load at 360 operations/h)	100,000 operations min. (0.3 A at 440 VAC, resistive load at 1,800 operations/h)
Degree of protection		IP30 (Terminal block: IP20)	
Weight		Approx. 120 g	

* Except for the H3DK-GE

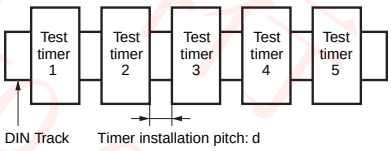
● Installation Pitch and Output Switching Capacity (Reference Values)

The relation between the installation pitch and the load current is shown in the following graph. (Except for the H3DK-GE)
If Timer is used under load conditions that exceed the specified values, the temperature inside the Timer will increase, reducing the life expectancy of internal parts.



Testing Method

Tested Timer: H3DK-G
Applied voltage: 240 VAC
Installation pitch: 0, 5, 10, and 50 mm



■ Applicable standards

Safety standards	cURus: UL 508/CSA C22.2 No. 14 *1 EN 50274: Finger protection, back-of-hand proof EN 61812-1: Pollution degree 2, Overvoltage category III *2 CCC: Pollution degree 2, Overvoltage category II, section DB14048.5-2008 part 5-1 LR: Test Specification No. 1-2002 Category ENV 1.2 *1
EMC	(EMI) EN61812-1 Radiated Emissions: EN 55011 class B Emission AC Mains: EN 55011 class B Harmonic Current: EN 61000-3-2 *1 Voltage Fluctuations and Flicker: EN61000-3-3 *1 (EMS) EN61812-1 ESD Immunity: EN 61000-4-2: 6 kV contact discharge, 8 kV air discharge Radiated Radio-Frequency Electromagnetic Field Immunity (AM Radio Waves): EN 61000-4-3: 10 V/m (80 MHz to 1 GHz) Burst Immunity: EN 61000-4-4: 2 kV power line, 1 kV I/O signal line Surge Immunity: EN 61000-4-5: 2 kV common mode, 1 kV differential mode

*1. This standard is not applicable to the H3DK-GE.
*2. This standard is not applicable if the output is used with a rating that exceeds 250 VAC.

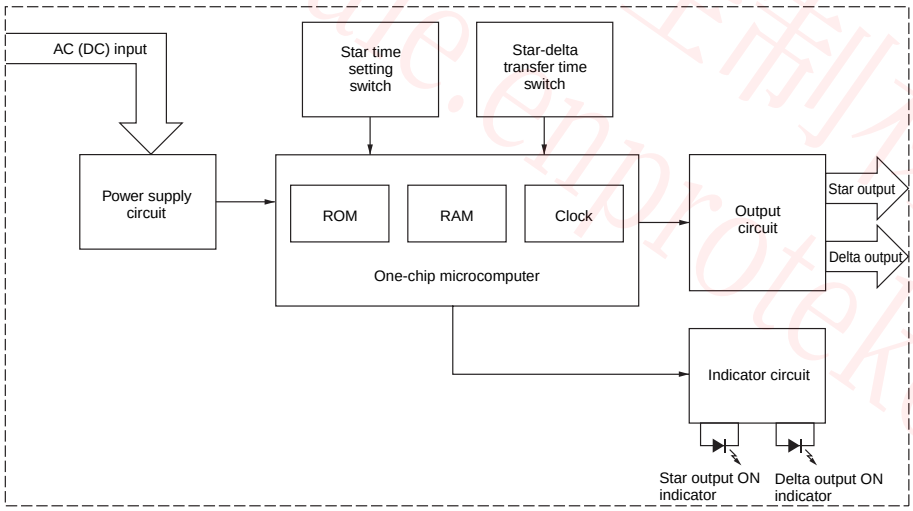
■ I/O

Input		None
Output	Control output	The star output is turned OFF when the dial set value is reached and the delta output is turned ON after the preset transfer time elapses.

Connections

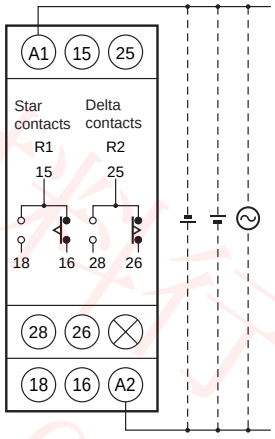
■ Block Diagrams

H3DK-G

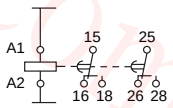


■ Terminal Arrangement

H3DK-G



(DIN notation)

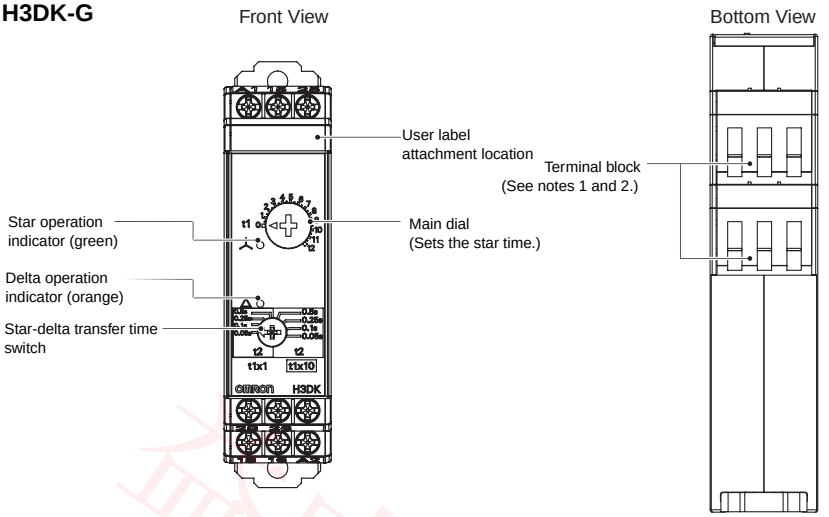


Note: The power supply terminals do not have polarity.

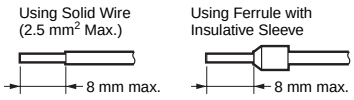
H3DK-G

Nomenclature

H3DK-G



Note 1. Use solid wire (2.5 mm² max.) or ferrules with insulative sleeves to connect to the terminals.
To maintain the withstand voltage after connecting the terminals, insert no more than 8 mm of exposed conductor into the terminal.

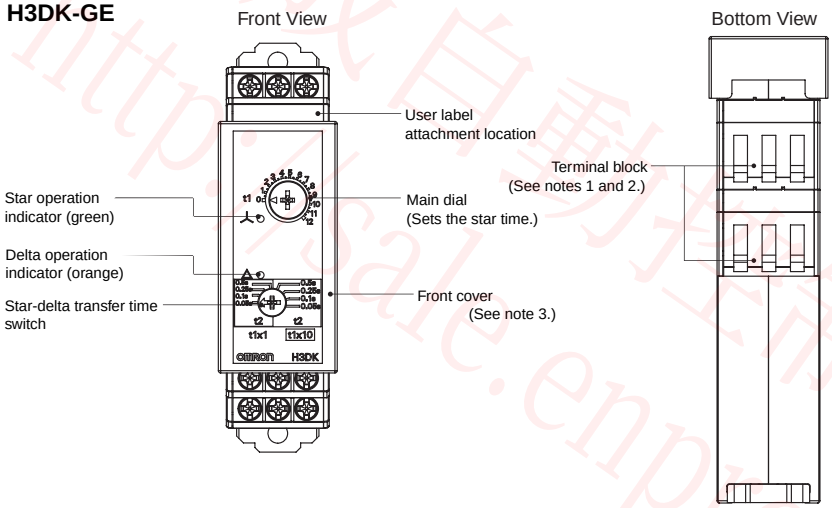


Recommended Ferrules
Phoenix Contact
- AI□□□ Series
- AI-TWIN□□□ Series

Note 2. Screw Tightening Torque
Recommended torque: 0.49 N·m
Maximum torque: 0.98 N·m

Note 3. Always keep the front cover mounted when using the Timer.

H3DK-GE

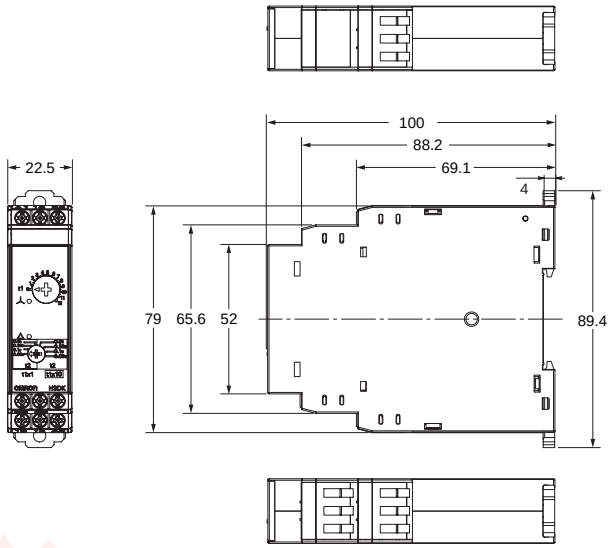


Dimensions

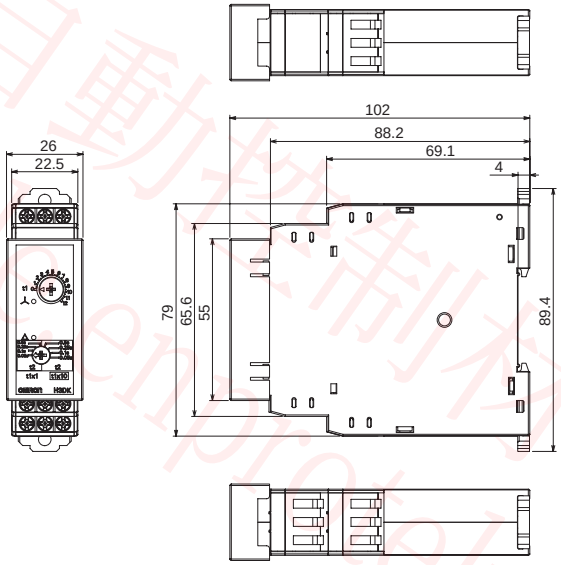
(Unit: mm)

■ Timers

H3DK-G



H3DK-GE



■ Track Mounting Products (Sold Separately)

Refer to page 28 for details.

Operating Procedures

■ Basic Operation

Setting the Time Ranges → **Setting the Time**

● Setting the Delta Time Range and the Star-delta Transfer Time (t2)

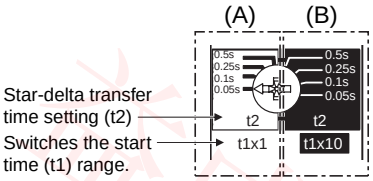
Star Time (t1) Range

Set the star-delta transfer time.

For ×1 (1 to 12 s), use side (A) (labeled “t1×1”).

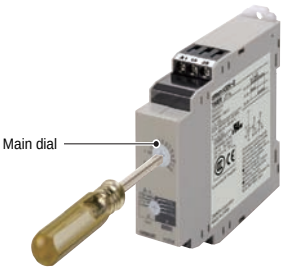
For ×10 (10 to 120 s), use side (B) (labeled “t10×1”).

(See following diagram.)

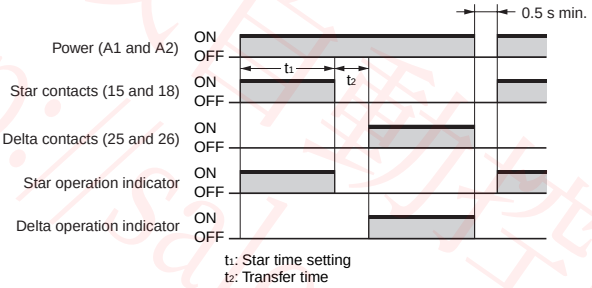


● Setting the Time

The start time is set with the main dial.



■ Timing Chart



Note: “t1” is the start set time. “t2” is the transfer time.

Power OFF-delay Timer
H3DK-H

- **Set two time ranges with each Timer, from 0.1 to 12 seconds for the S Series and from 1.0 to 120 seconds for the L Series.**

Ordering Information

■ List of Models

Operating modes	Supply voltage	Control output		H3DK-H S Series (time range: 0.1 to 12 s)	H3DK-H L Series (time range: 1.0 to 120 s)
Power OFF Delay	100 to 120 VAC	Contact output: SPDT	Model	**H3DK-HCS**	**H3DK-HCL**
	200 to 240 VAC	Contact output: SPDT	Model	**H3DK-HDS**	**H3DK-HDL**
	24 to 48 VAC/DC	Contact output: SPDT	Model	**H3DK-HBS**	**H3DK-HBL**

■ Accessories (Order Separately)

Item	Specification	Model
Mounting Track	50 cm (l) x 7.3 mm (t)	**PFP-50N**
	1 m (l) x 7.3 mm (t)	**PFP-100N**
	1 m (l) x 16 mm (t)	**PFP-100N2**
End Plate	---	**PFP-M**
Spacer	---	**PFP-S**

■ Model Structure

Model	Terminal block	Operating/resetting method	Output type	Mounting method	Safety standards	Accessories
H3DK-H	6 terminals	Instantaneous operation/ time-limit reset	Relay, SPDT	DIN Track mounting	cURus (UL 508 CSA C22.2 No. 14) EN 61812-1 IEC 60664-1 4 kV/2 EN 50274	User label

Specifications

■ Time Ranges

	S Series		L Series	
Time range setting	x0.1	x1	x1	x10
Set time range	0.1 to 1.2 s	1 to 12 s	1 to 12 s	10 to 120 s
Power ON time	0.1 s min.		0.3 s min.	
Scale numbers	12			

■ Ratings

Supply voltage		• 100 to 120 VAC, 50/60 Hz • 200 to 240 VAC, 50/60 Hz • 24 to 48 VAC/DC, 50/60 Hz *1
Allowable voltage fluctuation range		85% to 110% of rated voltage
Power consumption	H3DK-HCS/-HCL	At 120 VAC: 11.7 VA max.
	H3DK-HDS/-HDL	At 240 VAC: 29.5 VA max.
	H3DK-HBS/-HBL	At 48 VAC: 1.2 VA max. *2
Control output		Contact output, 5 A at 250 VAC with resistive load (cosϕ = 1), 5 A at 30 VDC with resistive load *2
Ambient operating temperature		–20 to 55°C (with no icing)
Storage temperature		–40 to 70°C (with no icing)
Ambient operating humidity		25% to 85%

*1. DC ripple: 20% max. (A single-phase, full-wave rectifying power supply can be connected.)
*2. Refer to *DC Power Consumptions (Reference Information)* on page 27 for DC power consumptions.
*3. The control output ratings are for one H3DK operating alone.
If you operate two or more Timers side by side, refer to *Installation Pitch and Output Switching Capacity (Reference Values)* on the next page.

■ Characteristics

Accuracy of operating time		±1% of FS max. (±1% ±10 ms max. at 1.2-s range)
Setting error		±10% of FS ±0.05 s max.
Influence of voltage		±0.5% of FS max. (±0.5% ±10 ms max. at 1.2-s range)
Influence of temperature		±2% of FS max. (±2% ±10 ms max. at 1.2-s range)
Insulation resistance		100 MΩ min. at 500 VDC
Dielectric strength		Between current-carrying metal parts and exposed non-current-carrying metal parts: 2,000 VAC 50/60 Hz for 1 min. Between control output terminals and operating circuit: 2,000 VAC 50/60 Hz for 1 min. Between contacts not located next to each other: 1,000 VAC 50/60 Hz for 1 min.
Impulse withstand voltage		Between power supply terminals: 1 kV for 24-VAC/DC and 48-VAC/DC models, 3 kV for all other models. Between current-carrying metal parts and exposed non-current-carrying metal parts): 1.5 kV for 24-VAC/DC and 48-VAC/DC models, 4.5 kV for all other models.
Noise immunity		Square-wave noise generated by noise simulator (pulse width: 100 ns/1 µs, 1-ns rise): ±1.5 kV (between power supply terminals)
Static immunity		Malfunction: 4 kV, Destruction: 8 kV
Vibration resistance	Destruction	0.75-mm single amplitude at 10 to 55 Hz for 2 h each in 3 directions
	Malfunction	0.5-mm single amplitude at 10 to 55 Hz for 10 min each in 3 directions
Shock resistance	Destruction	1,000 m/s² 3 times each in 6 directions
	Malfunction	100 m/s² 3 times each in 6 directions
Life expectancy	Mechanical	10 million operations min. (under no load at 1,200 operations/h)
	Electrical	100,000 operations min. (5 A at 250 VAC, resistive load at 1,200 operations/h)
Degree of protection		IP30 (Terminal block: IP20)
Weight		Approx. 120 g

■ Applicable standards

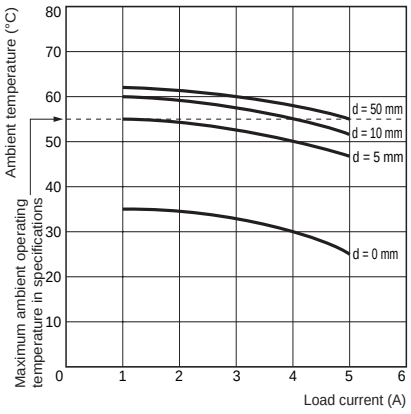
Safety standards	cURus: UL 508/CSA C22.2 No. 14 EN 50274: Finger protection, back-of-hand proof EN 61812-1: Pollution degree 2, Overvoltage category III CCC: Pollution degree 2, Overvoltage category II, section DB14048.5-2008 part 5-1 LR: Test Specification No. 1-2002 Category ENV 1.2
EMC	(EMI)EN61812-1 Radiated Emissions:EN 55011 class B Emission AC Mains:EN 55011 class B Harmonic Current:EN 61000-3-2 Voltage Fluctuations and Flicker:EN61000-3-3 (EMS)EN61812-1 ESD Immunity:EN 61000-4-2: 6 kV contact discharge, 8 kV air discharge Radiated Radio-Frequency Electromagnetic Field Immunity (AM Radio Waves): EN 61000-4-3: 10 V/m (80 MHz to 1 GHz) Burst Immunity:EN 61000-4-4: 2 kV power line, 1 kV I/O signal line Surge Immunity:EN 61000-4-5: 2 kV common mode, 1 kV differential mode

■ I/O

Input		None
Output	Control output	The Timer operates as soon as the Timer is turned ON. The Timer starts timing when the power is turned OFF and the output is turned OFF when the time set on the dial elapses.

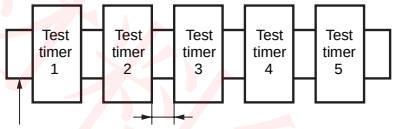
● Installation Pitch and Output Switching Capacity (Reference Values)

The relation between the installation pitch and the load current is shown in the following graph. (Except for the H3DK-GE)
If Timer is used under load conditions that exceed the specified values, the temperature inside the Timer will increase, reducing the life expectancy of internal parts.



Testing Method

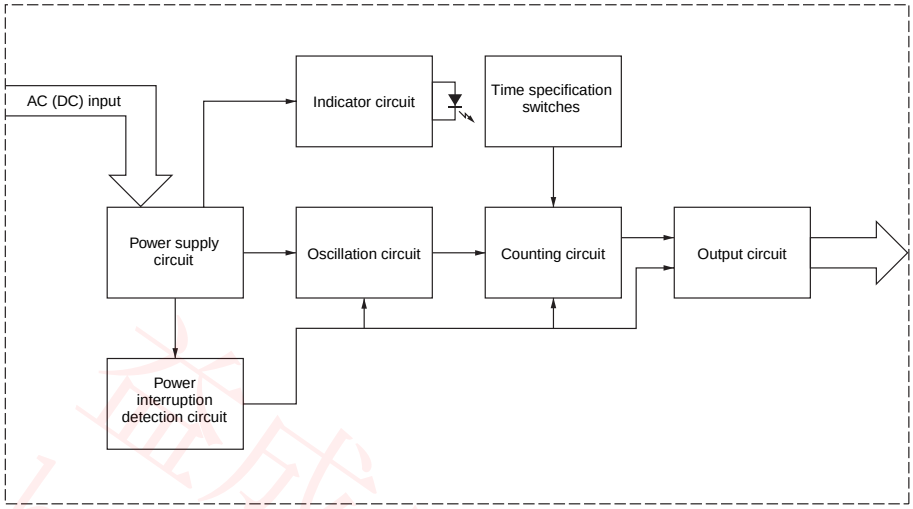
Tested Timer: H3DK-H
Applied voltage: 240 VAC
Installation pitch: 0, 5, 10, and 50 mm



Connections

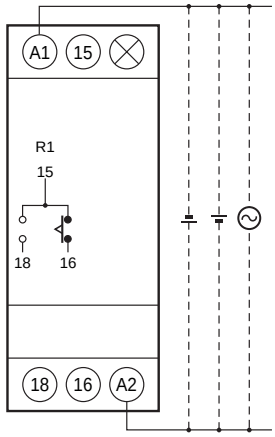
■ Block Diagrams

H3DK-H

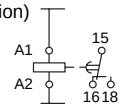


■ Terminal Arrangement

H3DK-H



(DIN notation)

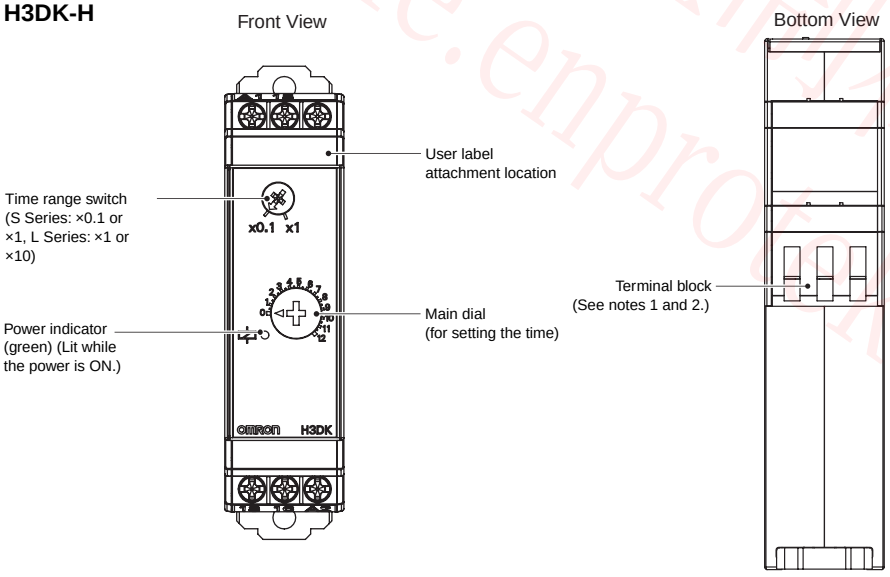


Note 1: The above figure shows the terminal arrangement for a 24 to 48-VAC/DC model. Models with 100 to 120-VAC or 200 to 240-VAC power input do not have a DC input.

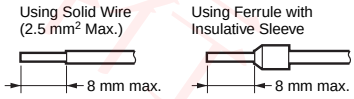
Note 2: The power supply terminals do not have polarity.

Nomenclature

H3DK-H



Note 1. Use solid wire (2.5 mm² max.) or ferrules with insulative sleeves to connect to the terminals.
To maintain the withstand voltage after connecting the terminals, insert no more than 8 mm of exposed conductor into the terminal.



Recommended Ferrules
Phoenix Contact
- AI□□□ Series
- AI-TWIN□□□ Series

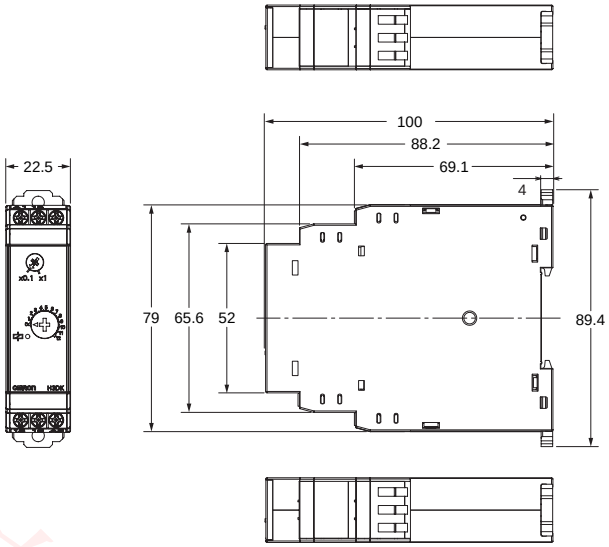
Note 2. Screw Tightening Torque
Recommended torque: 0.49 N·m
Maximum torque: 0.98 N·m

Dimensions

(Unit: mm)

■ Timers

H3DK-H



■ Track Mounting Products (Sold Separately)

Refer to page 28 for details.

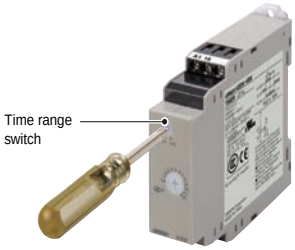
Operating Procedures

■ Basic Operation

Setting the Time Ranges

● **Setting the Time Ranges**

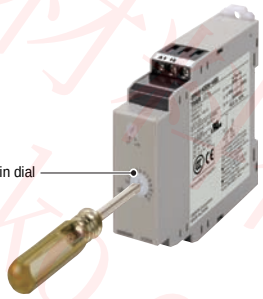
The scale multiplier can be changed with the timer range switch. It can be changed between ×0.1 s and ×1 s for an S-series Timer and between ×1 s and ×10 s for an L-series Timer.



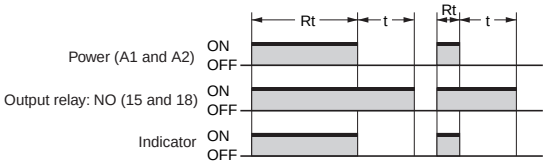
Setting the Time

● **Setting the Time**

The operation time is set with the main dial.



■ Timing Charts



t: Set time
Rt: Minimum power-ON time { S Series: 0.1 s min. / L Series: 0.3 s min.

(The output may never turn ON if the power is not ON for at least this time.)

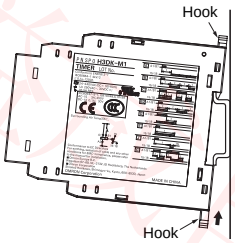
Precautions for Correct Use

● Changing Switch Settings

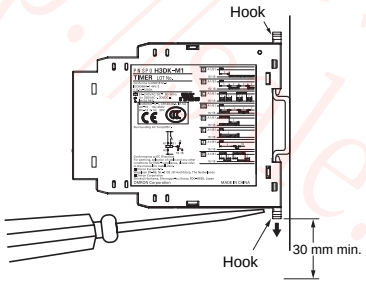
Do not change the time unit, time scale, operating mode, or INIT/TIME switch while the Timer is in operation. Doing so may result in malfunction. Turn OFF the power supply before changing the setting of any switch.

● Mounting and Dismounting

- Although there are no particular mounting restrictions, the Timer should be mounted as horizontally as possible.
- When mounting the Timer on a mounting Track, loosen the two hooks, press the Timer onto the Track, and then insert the hooks.



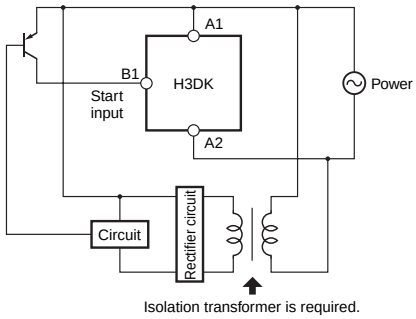
- When removing the Timer, pull out the two hooks, and then remove the Timer from the Track



- It will be easier to mount and dismount the Timer if a distance of 30 mm or more is provided between the bottom of the Timer and other equipment.

● Power Supply

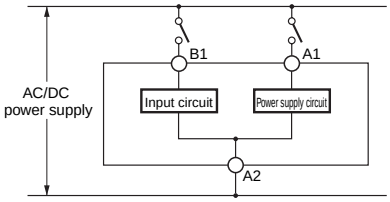
- The power supply can be connected to the power input terminals without considering polarity.
- A DC power supply can be connected if its ripple factor is 20% or less and the average voltage is within the allowable voltage fluctuation range of the Timer.
- For the power supply of the input device, use an isolating transformer in which the primary and secondary windings are mutually isolated and the secondary winding is not grounded. (H3DK-M1 and H3DK-M2 only)



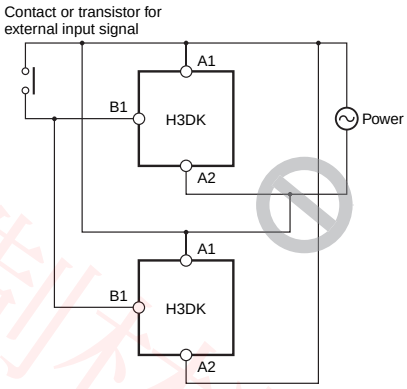
Isolation transformer is required.

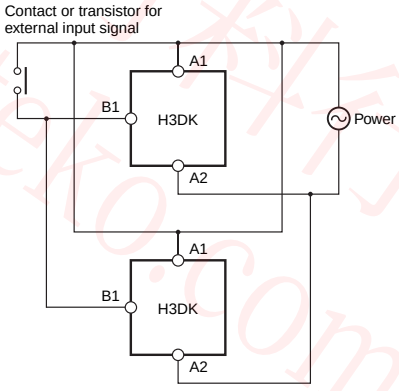
- The H3DK-H has a large inrush current. Provide sufficient power supply capacity.
  If the power supply capacity is too small, there may be delays in turning ON the output.

● Relationship between Input and Power Supply Circuits (H3DK-M1/-M2)



- The input circuit and the power supply circuit are configured independently. The input circuit can be turned ON and OFF without considering the ON/OFF state of the power supply.
  A voltage equivalent to the power supply voltage is also applied to the input circuit.
- If a relay or transistor is connected to two or more Timers, the input terminals of those Timers must be wired properly so that they will not be different in phase or the terminals will be short-circuited to one another. Always use the same power supply phases.





● Environment

- When using the Timer in an area with excessive electronic noise, separate the Timer and input device as far as possible from the noise sources. It is also recommended to shield the input signal wiring to prevent electronic interference.
- The external impulse voltage entering across the power supply terminals has been checked against a ±1.2×50 μs standard waveform according to JEC-210, Impulse Voltage/Current Test, of The Institute of Electrical Engineers of Japan. Surge or noise superimposed on the power supply may damage internal components or cause them to malfunction. We recommend that you check the circuit waveform and use surge absorbers. The effects on components depend on the type of surge and noise that are generated. Always perform testing with the actual equipment.

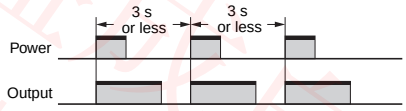
● Wiring

The H3DK-H acts like a high-impedance circuit. Therefore, the Timer may not reset if it is influenced by inductive voltage. To eliminate inductive voltage, the wires connected to the Timer must be as short as possible and should not be installed parallel to power lines. If the Timer is influenced by inductive voltage that is 30% or more of the rated voltage, connect a CR filter with a capacitance of approximately 0.1 μF and a resistance of approximately 120 Ω or a bleeder resistor between the power supply terminals.

If there is any residual voltage due to current leakage, connect a bleeder resistor between the power supply terminals.

● Operating Frequency

- The H3DK-H may malfunction if it is used as shown below. Do not use the H3DK-H in these ways.
  Timer Repeatedly Times Out in Cycles of 3 s or Less



In the above case, use the H3DK-M2/-M1 in D mode (signal OFF delay).

● DC Power Consumptions (Reference Information)

H3DK-M2/-S2	At 24 VDC: 1.2 W max.
H3DK-M1/-S1	At 24 VDC: 1.1 W max.
H3DK-F	At 24 VDC: 1.1 W max.
H3DK-G	At 24 VDC: 1.2 W max.
H3DK-HBS/-HBL	At 24 VDC: 1.2 W max.

● Other Precautions

- If the Timer is mounted on a control panel, dismount the Timer from the control panel before carrying out a voltage withstand test between the electric circuits and non-current-carrying metal parts of the Timer. (Otherwise, the internal circuits of the Timer may be damaged.)
- The H3DK-H uses a latching relay for the output. Shock, such as dropping the H3DK-H during shipment or handling, can cause the output contacts to reverse to the neutral position. Check the output status with a tester before using the H3DK-H.
- The life expectancy of the control output contacts is greatly affected by switching conditions. Always confirm operation using the actual conditions and equipment before using the Timer and make sure that the number of switching operations presents no problems in performance. If Timer application is continued after performance has deteriorated, insulation failure between circuits, burning of the control output relay, or other problem will eventually occur.
- If the power supply voltage is gradually increased, a power reset may occur or the Timer may time out. Use a switch, relay, or other device with contacts to apply the power supply voltage all at once.
- Make sure that residual voltage or inductive voltage is not applied after the power turns OFF.
- Error in the operation time of the Timer is given as a percentage of the full-scale time. The absolute value of the error will not change even if the set time is changed. Therefore, always use the Timer with the set time set as close as possible to the full-scale value of the set time range.
- When switching a microload, check the specified minimum load given for the Timer model you are using.
- When setting the operating time, do not turn the dial beyond the scale range.
- If better accuracy is required in the set time, adjust the dial while measuring the operation time.
- If the Timer is reset immediately after timing out, make sure that the circuit configuration allows sufficient resetting time. Errors will occur in the sequence if there is not sufficient resetting time.
- When directly switching a DC load, the switching capacity will be lower than when switching an AC load.

⚠ EN/IEC Standard Compliance

- Refer to the datasheet for the H3DK for cable selection and other conditions for compliance with EMC standards.
- The power supply terminals and input terminals are not isolated. There is basic insulation between the power supply terminals and output terminals.
- If double or reinforced insulation is required, use the double or reinforced insulation defined in IEC 60664 that is suitable for the maximum applied voltage for the clearance, solid insulation, and other factors.

Precautions for Compliance with UL Standards and CSA Standards

Notice to Users of the H3DK in the USA and Canada

Please use the following installation information instead of the general information in this document in order to use the product under certified conditions of UL and CSA when the product is installed in the USA or Canada. These conditions are required by NFPA 70, National Electrical Code in the USA and the Canadian Electrical Code, Part I in Canada and may vary from information given in this document.

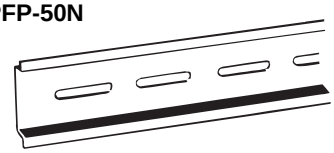
- Use an isolated source for power input for the H3DK-□A.
  Use an isolated source with external overcurrent protection of 16 A maximum for the source and input. (The input is applicable to the H3DK-M only.)
- Environment
  Surrounding Air Temperature: 55°C
- Power Supply: The inputs are non-isolated (applicable to H3DK-M only).
  The same power supply as the main power source must be used for that for input.
- Pollution Degree
  Pollution degree II

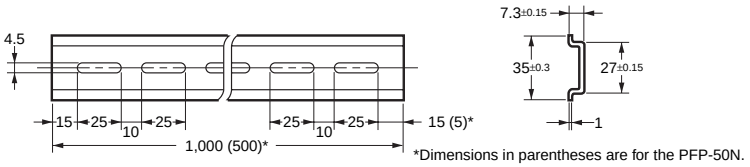
Track Mounting Products (Sold Separately)

(Unit: mm)

DIN Track

PFP-100N
PFP-50N

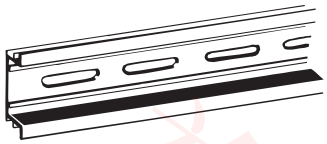


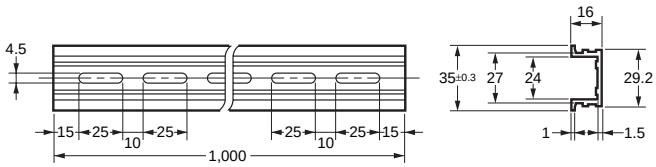


*Dimensions in parentheses are for the PFP-50N.

DIN Track

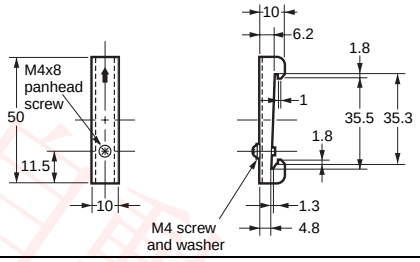
PFP-100N2





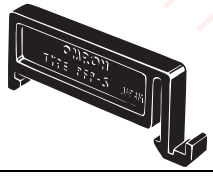
End Plate

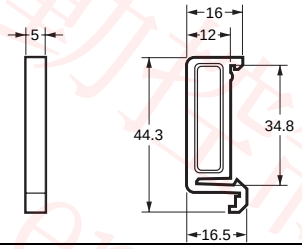
PFP-M



Spacer

PFP-S



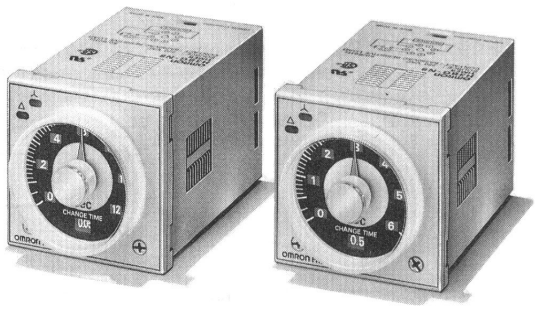


Note 1: Order the above products in multiples of 10.
Note 2: The Tracks conform to DIN standards.

Solid-state Star-delta Timer

H3BG-N8

- A wide star-time range (up to 120 seconds) and star-delta transfer time range (up to 0.5 seconds).
- Setting rings (order separately) to enable consistent settings and to limit the setting range.
- Panel Covers (order separately) to enable various panel designs.
- Approved by UL and CSA.



Ordering Information

Outputs	Supply voltage	Models
Time-limit contact	110 VAC (50/60 Hz)	H3BG-N8
	220 VAC (50/60 Hz)	
Time-limit contact and instantaneous contact	110 VAC (50/60 Hz)	H3BG-N8H
	220 VAC (50/60 Hz)	

Note: Specify both the model number and supply voltage when ordering.
Example: H3BG-N8 110 VAC
Supply voltage

Model Number Legend:

H3BG-N □ □
1 2

1. Configuration
8: 8-pin socket

2. Outputs
None: Star-delta operation contact
H: Star-delta operation contact and instantaneous contact

■ Accessories (Order Separately)

Name/Specifications		Models
Flush Mounting Adapter		Y92F-30
		Y92F-70
		Y92F-71
Mounting Track	**50 cm (l) x 7.3 mm (t)**	PFP-50N
	1 m (l) x 7.3 mm (t)	PFP-100N
	1 m (l) x 16 mm (t)	PFP-100N2
End Plate		PFP-M
Spacer		PFP-S
Protective Cover		Y92A-48B
Track Mounting/Front Connecting Socket	**8-pin**	P2CF-08
Back Connecting Socket		P3G-08
Time Setting Ring	**Setting a specific time**	Y92S-27
	Limiting the Setting Range	Y92S-28
Panel Cover (see note)	**Light Gray (5Y7/1)**	Y92P-48GL
	Black (N1.5)	Y92P-48GB
	Medium Gray (5Y5/1)	Y92P-48GM
Hold-down Clip	**For PL08 Socket**	Y92H-1
	For PF085A Socket	Y92H-2

Note: The Time Setting Ring and Panel Cover are sold together.

Specifications

■ General

Item	H3BG-N8	H3BG-N8H
Functions	Star-delta timer	Star-delta timer with instantaneous output
Pin type	8-pin	
Operating/Reset method	Time-limit operation/Self-reset	
Output type	Time-limit: SPST-NO (star operation circuit) SPST-NO (delta operation circuit)	Time-limit: SPST-NO (star operation circuit) SPST-NO (delta operation circuit) Instantaneous: SPST-NO
Mounting method	DIN track mounting, surface mounting, and flush mounting	
Approved standards	UL508, CSA C22.2 No.14	

■ Time Ranges

Star-delta transfer time		0.05 sec	0.1 sec	0.25 sec	0.5 sec
Star operation time setting	6	0.5 to 6 sec			
	12	1 to 12 sec			
	60	5 to 60 sec			
	120	10 to 120 sec			

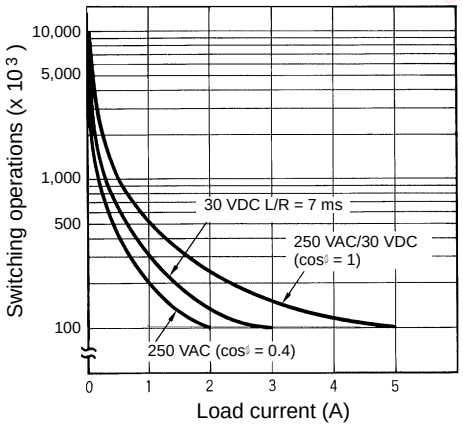
■ Ratings

Rated supply voltage	110 VAC (50/60 Hz), 220 VAC (50/60 Hz)
Operating voltage range	85% to 110% of rated supply voltage
Power reset	Minimum power-opening time: 0.5 s
Power consumption	110 VAC: Approx. 4.6 VA (2.3 W) 220 VAC: Approx. 9.5 VA (2.3 W)
Control outputs	Contact output: 5 A at 250 VAC, resistive load (cosϕ = 1)

■ Characteristics

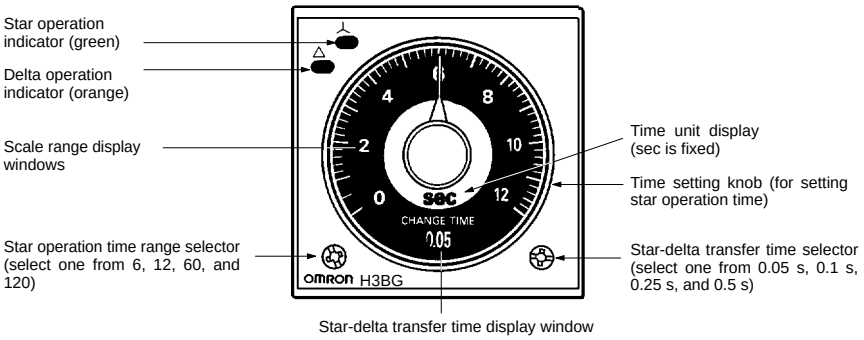
Accuracy of operating time	±0.3% FS max.
Setting error	±5% FS ±0.05 s max.
Star-delta transfer time	Accuracy: ±25% FS + 5 ms max.
Influence of voltage	±0.5% FS max.
Influence of temperature	±2% FS max.
Insulation resistance	100 MΩ min. (at 500 VDC)
Dielectric strength	2,000 VAC, 50/60 Hz for 1 min (between current-carrying metal parts and exposed non-current-carrying metal parts) 2,000 VAC, 50/60 Hz for 1 min (between control output terminals and operating circuit) 1,000 VAC, 50/60 Hz for 1 min (between contacts not located next to each other)
Impulse withstand voltage	3 kV (between power terminals) 4.5 kV (between current-carrying terminal and exposed non-current-carrying metal parts)
Noise immunity	±1.5 kV (between power terminals), square-wave noise by noise simulator (pulse width: 100 ns/1 µs, 1-ns rise)
Static immunity	Malfunction: 8 kV Destruction: 15 kV
Vibration resistance	Destruction: 10 to 55 Hz with 0.75-mm single amplitude each in three directions Malfunction: 10 to 55 Hz with 0.5-mm single amplitude each in three directions
Shock resistance	Destruction: 1,000 m/s^2 (approx. 100G) each in three directions Malfunction: 300 m/s^2 (approx. 30G) each in three directions
Ambient temperature	Operating: –10°C to 55°C (with no icing) Storage: –25°C to 65°C (with no icing)
Ambient humidity	Operating: 35% to 85%
Life expectancy	Mechanical: 20 million operations min. (under no load at 1,800 operations/h) Electrical: 100,000 operations min. (5 A at 250 VAC, resistive load at 1,800 operations/h)
Case color	Light Gray (Munsell 5Y7/1)
Enclosure ratings	IEC: IP40 (panel surface)
Weight	H3BG-N8: Approx. 110 g; H3BG-N8H: Approx. 130 g

Engineering Data



Reference: A maximum current of 0.15 A can be switched at 125 VDC (cosϕ = 1) and a maximum current of 0.1 A can be switched if L/R is 7 ms. In both cases, a life of 100,000 operations can be expected.
The minimum applicable load is 100 mA at 5 VDC (failure level: P).

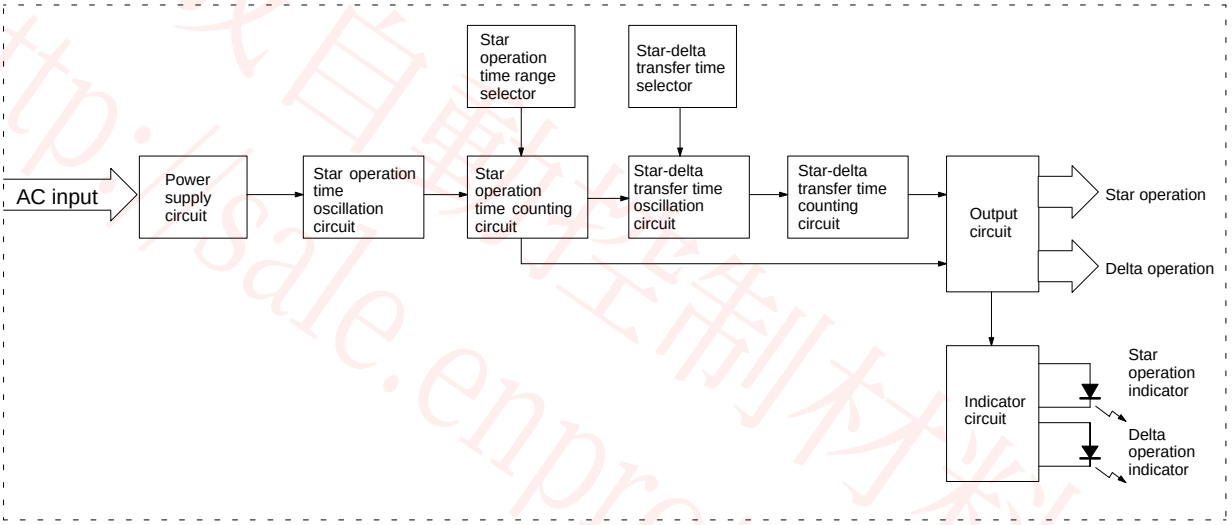
Nomenclature



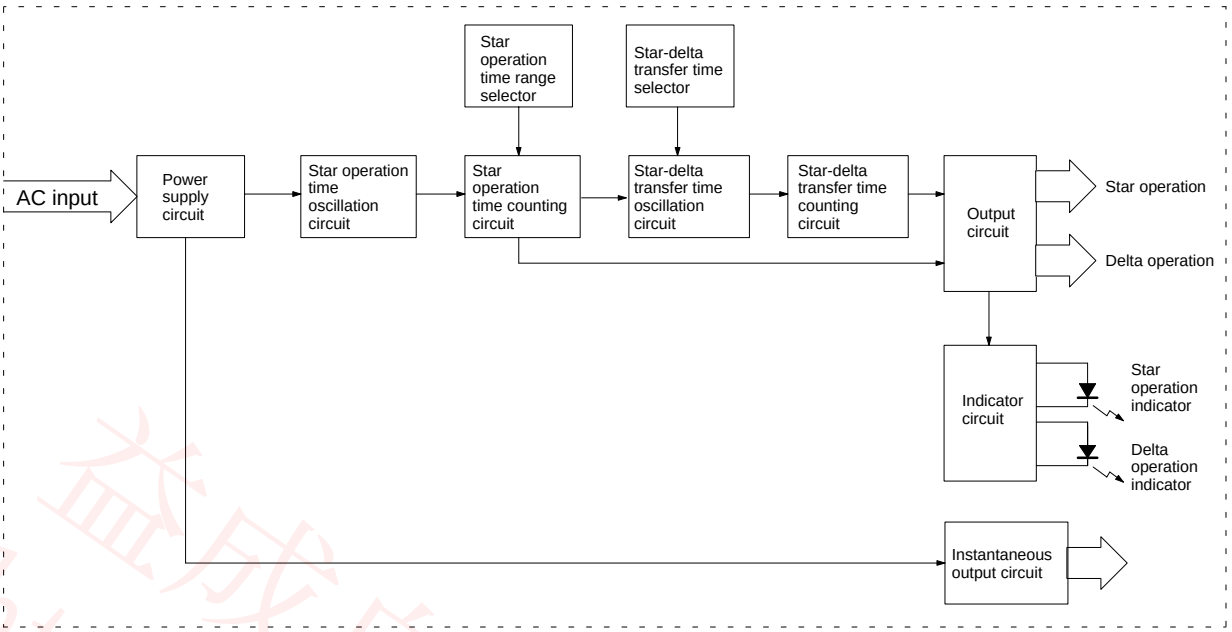
Operation

■ Block Diagrams

H3BG-N8



H3BG-N8H



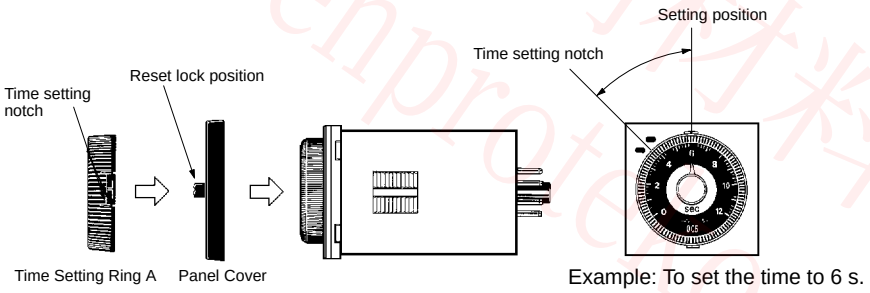
■ I/O Functions

Inputs		---
Outputs	**Control output**	If the time reaches the value set with the time setting knob, the star operation output will be turned OFF and there will be delta operation output after the set star-delta transfer time has elapsed.

■ Using the Setting Ring

Setting a Specific Time

Mount the Panel Cover on the Timer, set the desired time with the time setting knob, and place Time Setting Ring A onto the time setting knob so that the time setting notch of Time Setting Ring A is in the center of the reset lock position of the Panel Cover.

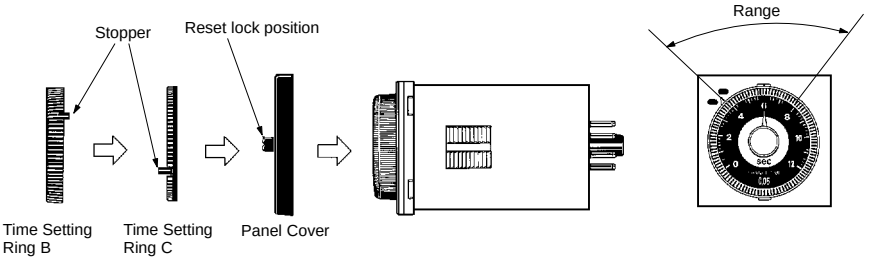


Example: To set the time to 6 s.

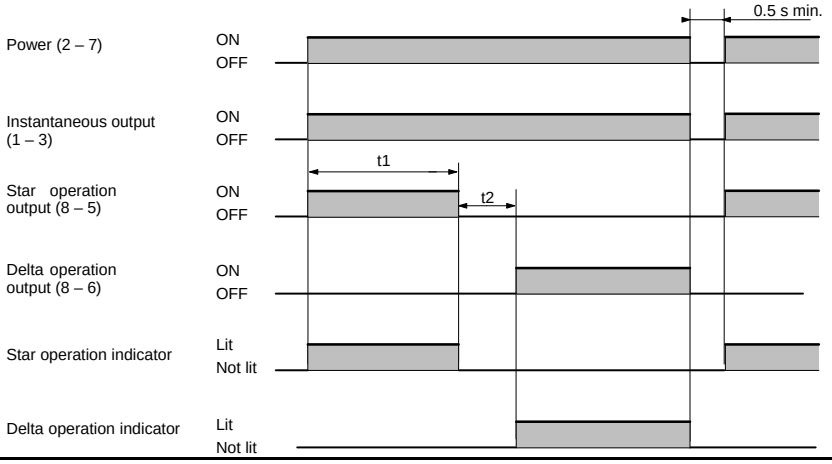
Limiting the Setting Range

Example: To set a range of 4 and 8 s.

Mount the Panel Cover on the Timer, set the time setting knob to 4 s (the lower limit of the setting range), and place Time Setting Ring C onto the time setting knob so that the stopper of Time Setting Ring C is on the right edge of the reset lock position of the Panel cover. Next, set the time setting knob to 8 s (the upper limit of the setting range), place Time Setting Ring B onto the time setting knob so that the stopper of Time Setting Ring B is on the left edge of the reset lock position of the Panel Cover.



■ Timing Chart

Model	Timing chart
H3BG-N8/N8H	

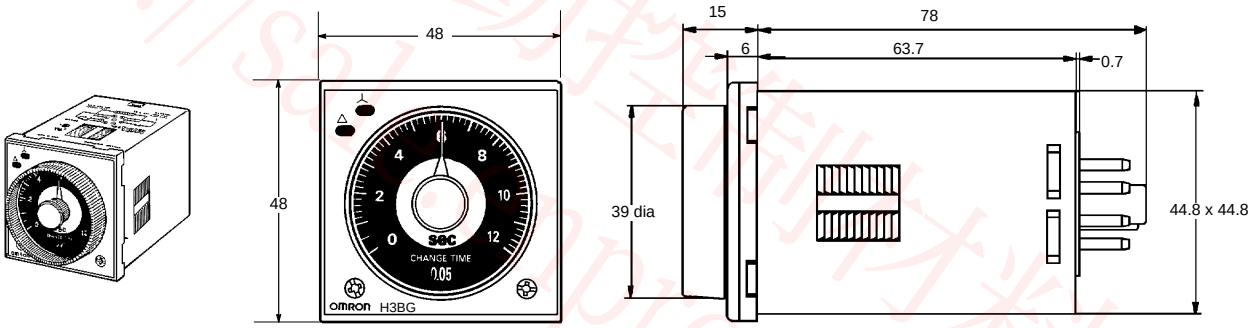
Note: t1: Star operation time setting
t2: Star-delta transfer time

Note: Instantaneous contacts are provided only for the H3BG-N8H.

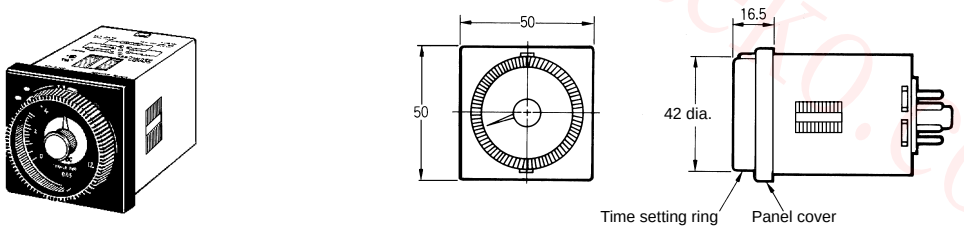
Dimensions

Note: All units are in millimeters unless otherwise indicated.

H3BG-N8/N8H



Dimensions with Set Ring



■ Accessories

Time Setting Ring/Panel Cover

There are three types of Panel Covers (Y92P-48GL, Y92P-48GB, and Y92P-48GM), all of which are available in three colors. Use the most suitable type of Panel Cover with the design of the scaling plate according to the application.
When setting a given time for the Timer, use of the Y92S-27 or Y92S-28 Time Setting Ring facilitates the time setting operation and minimizes possible setting errors by operators.

The Time Setting Ring and Panel Cover should be used as a pair.

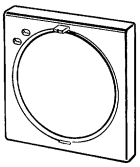
Setting a specific time	Time Setting Ring A (Y92S-27) and Panel Cover (Y92P-48GL, -48GB, or -48GM)
Limiting the setting range	Time Setting Ring B or C (Y92S-28), and Panel Cover (Y92P-48GL, -48GB, or -48GA)

Y92S-27
Time Setting A

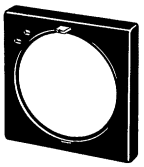
Y92S-28
Time Setting B

Y92S-28
Time Setting C

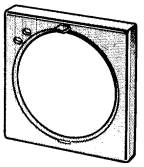
Y92P-48GL
Light Gray



Y92P-48GB
Black



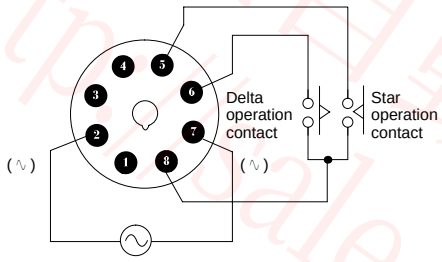
Y92P-48GM
Medium Gray



Installation

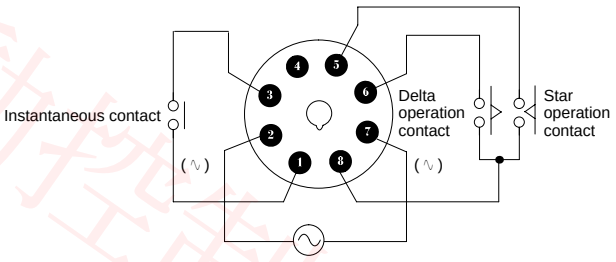
■ Terminal Arrangement

H3BG-N8



Note: Leave terminals 1, 3, and 4 open. Do not use them as relay terminals.

H3BG-N8H



Note: Leave terminal 4 open. Do not use them as relay terminals.