

Multifunction Timer

H₃DE

Analog Set Multifunction Timers In Slim 22.5 mm Design For Track Mounting

- Wide AC/DC power supply range (24 to 230 VAC/DC) minimizes inventory
- 12 VDC available in H3DE-M model
- Programmable contacts (available in -M2 and -S2 models) can enable and disable a self-holding relay circuit
- Eight operating modes in the H3DE-M (four in the H3DE-S) offer wide application flexibility
- Time setting range 0.10 sec to 120 hrs
- Finger protection terminal block





Ordering Information -

■ TIMER

Description		Part number	
Contact output	Supply voltage	Multifunctional	Standard
DPDT (time-limit output SPDT); and switchable SPDT (time-limit ←→ instantaneous)	12 VDC	H3DE-M2 DC12	_
	24 to 230 VAC/DC	H3DE-M2 AC/DC24-230	H3DE-S2 AC/DC24-230
SPDT (time-limit output SPDT)]	H3DE-M1 AC/DC24-230	H3DE-S1 AC/DC24-230

■ MODEL NUMBER LEGEND

H3DE-□-□-□

M: Multifunction type
 S: Standard type

2. 1: SPDT

3. Supply voltage

■ ACCESSORIES (ORDER SEPARATELY)

Item	Description	Part number
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

■ CHARACTERISTICS

Accuracy of operating time	±1% max. of FS (±1% ±10 ms max. at 1.2-s range) (See Note 1.)		
Setting error	±10% ±50 ms max. of FS (See Note 1.)		
Signal input time	50 ms min. (See Note 1.)		
Voltage influence	±0.5% max. of FS (±0.5% ±10 ms max. at 1.2-s range)		
Temperature influence	±2% max. of FS (±2% ±10 ms max. at 1.2-s range)		
Insulation resistance	100 M Ω min. at 500 VDC		
Dielectric strength	Between current-carrying metal parts and exposed non-current-carrying metal parts: 2,000 VAC for 1 min. Between control output terminals and operating circuit: 2,000 VAC for 1 min. Between contacts of different polarities: 2,000 VAC for 1 min. Between contacts not located next to each other: 1,000 VAC for 1 min.		
Vibration resistance	Malfunction: 0.5-mm single amplitude at 10 to 55 Hz Destruction: 0.75-mm single amplitude at 10 to 55 Hz		
Shock resistance	Malfunction: 100 m/s ² (approximately 10G) Destruction: 1,000 m/s ² (approximately 100G)		
Contact material	AgNi+gold plating (Use the G6RN-1 at 12 VDC.)		
Impulse withstand voltage	3 kV (between power terminals) 4.5 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		
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) (See Note 2.)		
EMC	EMI Emission Enclosure: EN55011 Group 1 class A Emission AC Mains: EN55011 Group 1 class A Harmonic Current: EN61000-3-2 Voltage Fluctuation and Flickering EN61000-3-3 EMS		
	Immunity ESD: EN61000-4-2: 6 kV contact discharge (level 3); 8 kV air discharge (level 3)		
	Immunity RF-interference from AM Radio Waves: EN61000-4-3: 10 V/m (80 MHz to 1 GHz) (level 3)		
	Immunity Burst: EN61000-4-4: 2 kV power port and output port (level 3); 1 kV control port with capacitive clamp (level 3)		
	Immunity Surge: EN61000-4-5: 2 kV common mode (level 3); 1 kV differential mode (level 3)		
Enclosure rating	IP30 (Terminal block: IP20)		
Weight	120 g		

Note: 1. With the H3DE-M□, if the voltage exceeds 26.4 VAC/DC, the following hold at signal OFF for C, D, and G modes:

Accuracy of operating time: ±1% ±50 ms max. at 1.2-s range

Setting error: ±10% +100/-50 ms max.

Signal input time: 100 ms min.

For reference: A maximum current of 0.15 A can be switched at 125 VDC (cosφ=1).
 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 10 mA at 5 VDC (failure level: P).

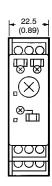
Dimensions

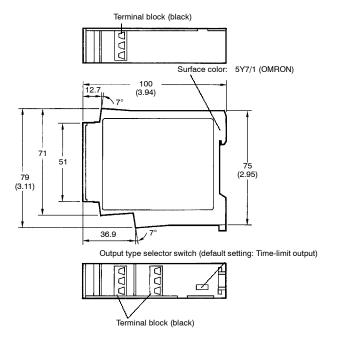
Unit: mm (inch)

■ H3DE-M H3DE-S









Installation

■ TERMINAL ARRANGEMENT

(See Note 2.)

Note: 1. The contact symbol for the H3DE is indicated with rolling because it offers multiple operating modes and is different from the delayed contact for conventional timers.

- 2. DC supply voltage does not require the designation of polarity.
- 3. The relay R2 can be set to either instantaneous or time-limit contact using the switch located on the bottom of the Timer.

H3DE-M1

R1

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