HD013

Features

- ☐ High voltage DC load control.
- ☐ High performance DC relay for photovoltaic power generation systems, energy storage system and xEV charging device, etc.
- ☐ Complies with RoHS-Directive 2011/65/EU.

Type List

Terminal style	Contact form	Designation (provided with)
		Flux tight
PCB terminal	1A (SPDM)	HD013P-1AH-F-C

Ordering Information

HD013 P - 1A H - F - C ☐

1 2 3 4 5 6 7

1. HD013 -- Basic series designation
2. P -- PCB terminal
3. 1A -- Form A, single-pole, double-make (SPDM)
4. H -- Contact material Ag alloy
5. F -- Class F
6. C -- Flux tight
7. ☐ -- Coil voltage (please refer to the coil rating data for the availability)

Contact Rating

◆ Each 1 form A contact

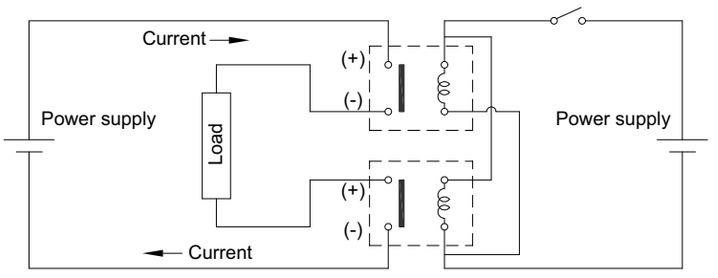
Rated load (Resistive)	30A 400VDC, On 1s / Off 19s, 5000 ops.
Breaking voltage	Max. 400VDC
Continuous carrying current	Max. 32A

◆ Each 1 form A contact connected in series

Rated load (Resistive)	20A 1000VDC, On 1s / Off 19s, 5 ops. 25A 800VDC, On 1s / Off 19s, 50 ops. 30A 660VDC, On 1s / Off 19s, 300 ops. 30A 500VDC, On 1s / Off 19s, 500 ops. -25A 400VDC, On 1s / Off 19s, 100 ops.
Breaking voltage	Max. 1000VDC
Continuous carrying current	Max. 32A

Notes : (1) Reference circuit for above series connection, please refer to figure 1.
(2) With above 2 cm mounting distance between two relays.
(3) Coil terminal with polarity sensitivity, please follow the layout instruction.

◆ Figure 1



Coil Rating (DC)

Rated voltage (V)	Rated current ±10 % at 23°C (mA)	Coil resistance ±10 % at 23°C (Ω)	Pick up voltage (Max.) at 23°C (1)	Drop out voltage (Min.) at 23°C	Continuous voltage at 85°C (2)	Power consumption at rated / holding voltage
12	150	80	75 % of rated voltage	5 % of rated voltage	45~55 % of rated voltage	approx. 1.8W / 0.36W (2)
24	75	320				

Notes : (1) To energize relay properly apply 100%~120% nominal coil voltage for 200ms.
(2) Coil holding voltage is 45~55% of nominal voltage after applying nominal voltage for 200ms.

Specification

Contact material	Ag alloy	
Contact gap	≥2.5 mm	
Voltage drop (1)	Typ. 40mV at 10A	
Operate time (1)	30ms Max.	
Release time (1)	15ms Max.	
Insulation resistance (1)	100MΩ Min. (DC 500V)	
Dielectric strength (1)	Between open contact	: AC 2000V, 50/60Hz 1 min.
	Between contact and coil	: AC 2500V, 50/60Hz 1 min.
Vibration resistance	Operating extremes	10~500Hz, 5.0G
	Damage limits	10~500Hz, 5.0G
Shock resistance	Operating extremes	10G
	Damage limits	100G
Life expectancy	Mechanical	500,000 ops. (frequency 9,000 ops./hr)
Operating ambient temperature	-40~+85°C (no freezing)	
Weight	Approx.65 g	

Notes : (1) Initial value. Operate and release time excluding contact bounce.
(2) Coil and contact sides with polarities (+) and (-).
(3) Unless otherwise specified, all tests are under room temperature and humidity.
(4) Consider the heat of PCB is necessary, please check the actual condition of PCB.
(5) Applying no diode to this relay. The life expectancy will be lower when a diode is used. To use a varistor (ZNR) could absorb the coil surge of relay that is recommended.
(6) Do not use the relay exceeding the coil rating, contact rating and life expectancy, or this may cause the risk of overheating.
(7) To assure optimum performance, avoid the relay from dropping, hitting, or other unnecessary shocks.
(8) To avoid mounting the relay in strong magnetic fields (near a transformer or magnet) or close to an object that radiates heat.
(9) Do not switch the contacts without any load as the contact resistance may become increased rapidly.
(10) Please contact Song Chuan for the detailed information.

Safety Approval

Certified	UL / CUL
File No.	E88991

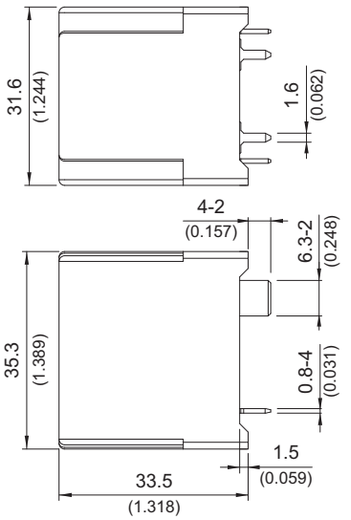
Safety Approval Rating

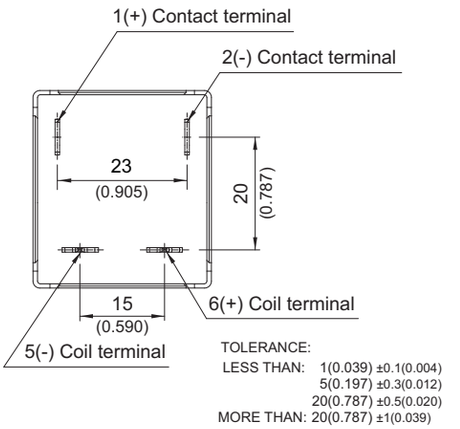
UL / CUL
40A 600VDC (1) 12A 600VDC, Carrying current 40A

Notes : (1) Operating in a series connection.

Outline Dimensions

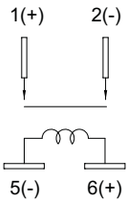
◆ HD013P (-C cover type)





TOLERANCE:
LESS THAN: 1(0.039) ±0.1(0.004)
5(0.197) ±0.3(0.012)
20(0.787) ±0.5(0.020)
MORE THAN: 20(0.787) ±1(0.039)

Wiring Diagram (Bottom view)



Load sides and coil terminals are with polarities (+) and (-).

PC Board Layout (Bottom view)