



### »» Features

- Middle voltage DC load control.
- High performance power relay for xEV vehicle.
- Complies with RoHS-Directive 2011/65/EU.

### »» Type List

Terminal style	Contact form	Designation (provided with)	
		Flux tight	Flanged cover (Flux tight)
Plug-in terminal	1A (SPDM)	MV011-1AH-C	-----
PCB terminal		MV011P1-1AH-C	-----
Screw terminal		-----	MV011S1-1AH-C1

### »» Ordering Information

MV011  - 1A H - C   
 1 2 3 4 5 6

- |  |   |
|--|---|
| 1. MV011 -- Basic series designation             | 5. C -- Flux tight  |
| 2. Blank -- Plug-in terminal                     | V -- Sealed type  |
| P1 -- PCB terminal                               | S -- Sealed type washable   |
| S1 -- Screw terminal (M6)                        | C1 -- Flanged cover (Flux tight)  |
| 3. 1A -- Form A, single-pole, double-make (SPDM) | V1 -- Flanged cover (Sealed type)   |
| 4. H -- Contact material Ag alloy                | S1 -- Flanged cover (Sealed type washable)  |
|  | 6. <input type="checkbox"/> -- Coil voltage (please refer to the coil rating data for the availability) |

### »» Contact Rating

Rated load (Resistive)	100A 60VDC
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### »» 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	Drop out voltage (Min.) at 23°C	Max. continuous voltage at 23°C <sup>(1)</sup>	Power consumption at rated voltage
12	266.7	45	75 % of rated voltage	5 % of rated voltage	110 % of rated voltage	approx. 3.2W
24	133.3	180				
48	66.6	720				

Notes : (1) Without continuous contact current.

### »» Specification

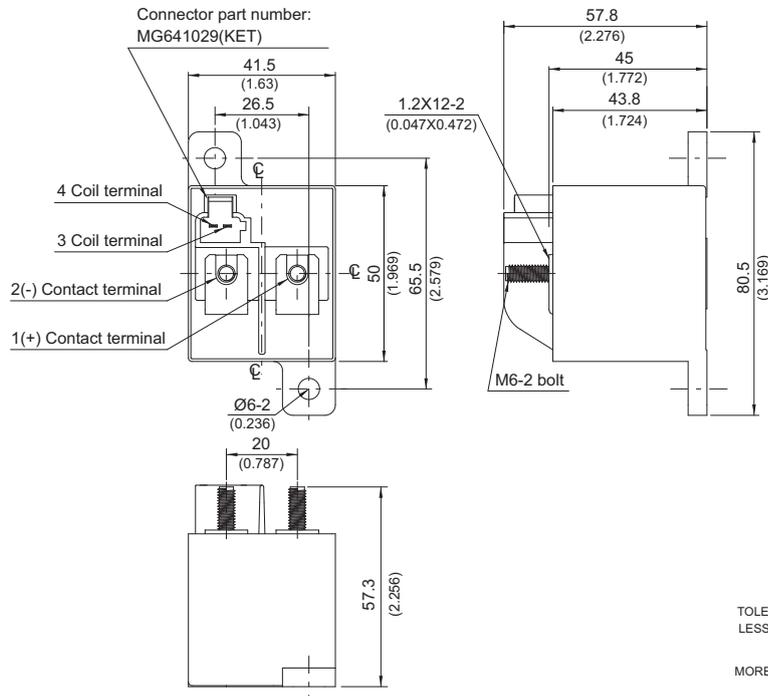
Contact material	Ag alloy
Voltage drop <sup>(1)</sup>	Typ.10 mV at 10A
Operate time <sup>(1)</sup>	50ms Max.
Release time <sup>(1)</sup>	30ms Max.
Insulation resistance <sup>(1)</sup>	100MΩ Min. (DC 500V)
Dielectric strength <sup>(1)</sup>	Between open contact : AC 1000V, 50/60Hz 1 min.
	Between contact and coil : AC 4000V, 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	1,000,000 ops. (frequency 9,000 ops./hr)	
	Electrical	Rated switching capacity (Resistive)	100A 60VDC: 1,000 ops. (frequency 180 ops./hr)
		Overload switching capacity	120A 60VDC: 5 ops.
		Short term carrying current	150A 60sec.; 250A 5sec.
Operating ambient temperature	-40~+70°C (no freezing)		
Weight	Approx. 180g, 185g (flanged cover)		

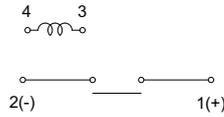
- Notes :
- (1) Initial value. Operate and release time excluding contact bounce.
  - (2) Load sides with polarities (+) and (-).
  - (3) Unless otherwise specified, all tests are under room temperature and humidity.
  - (4) Consider the heat of PCB is necessary, please check the actual condition of 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) Take care to avoid cross connections as they may cause malfunctions or overheating.
  - (9) To avoid mounting the relay in strong magnetic fields (near a transformer or magnet) or close to an object that radiates heat.
  - (10) Do not switch the contacts without any load as the contact resistance may become increased rapidly.
  - (11) Always keep the oils and fats kind from the main terminal parts.
  - (12) Use suitable harnesses and bus bars according to the current as below:  
100A type : Min. 38 mm<sup>2</sup>
  - (13) To avoid unexpected damage, when tightening a screw, use no exceeding specified torque range as below:  
M5 screw : 4.5 ~ 5 N.m  
M6 screw : 6 ~ 8 N.m
  - (14) Please contact Song Chuan for the detailed information.

## »» Outline Dimensions

### ◆ Screw terminal (-C1,V1,S1 cover type)



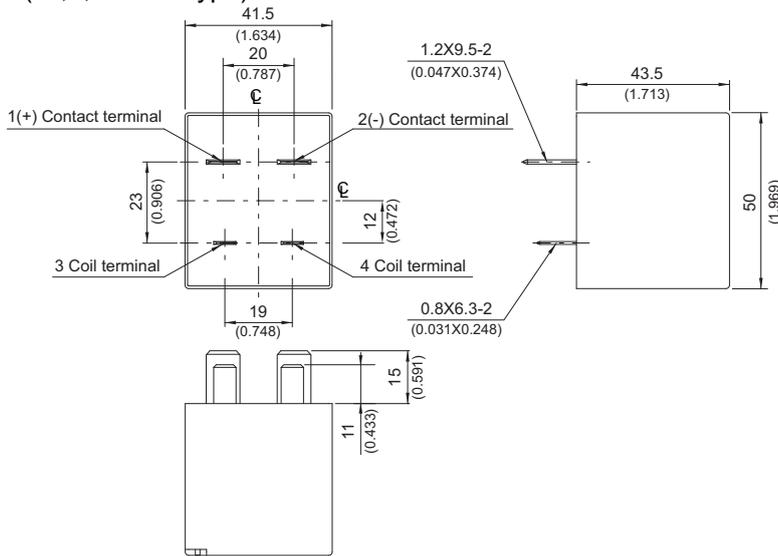
»» Wiring Diagram  
(Top view)



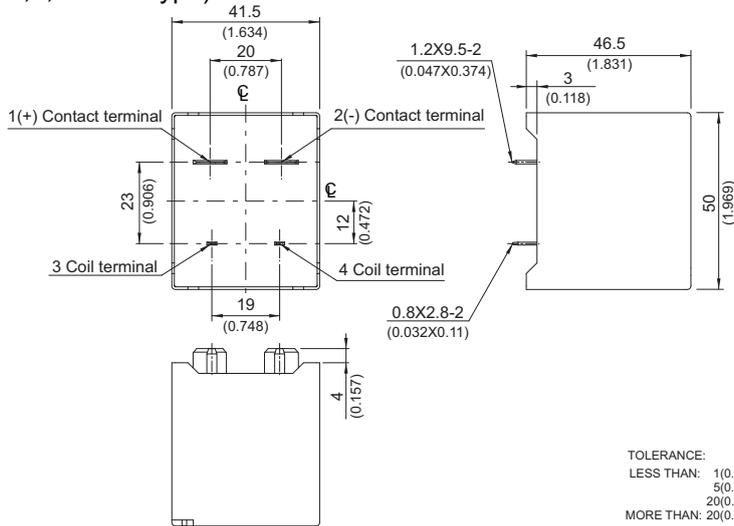
Load sides with polarities (+) and (-).

»» Outline Dimensions

◆ Plug-in terminal (-C,V,S cover type)

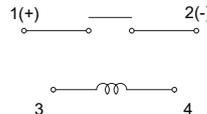


◆ PCB terminal (-C,V,S cover type)



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 with polarities (+) and (-).

»» PC Board Layout  
(Bottom view)

