Customer：CODICO

Type：118-2A Series Relay

Revised :
Issued : 2023.06.27

■ Features

- □ High temperature resistance relay for charging application.
- □ Contact rating 50A 277VAC at 85°C ambient temperature.
- □ RoHS Compliant.

■ Type List

Terminal style	Contact form	Insulation System	Designation (provided with)
			Flux tight
PCB terminal	2A (DPNO)	F	118-2AH-F-C E05

■ Ordering Information

118	-	2A	H	-	F	-	C	E05	□
1		2	3		4		5	6	7

1. 118 -- Basic series designation
2. 2A -- Double pole normally open (DPNO)
3. H -- Contact material Ag alloy
4. F -- Class F
5. C -- Flux tight
6. E05 -- Special feature code
7. □ -- Coil voltage (please refer to the coil rating data for the availability)

■ Contact Rating

Rated load (Resistive)	Making 16A, Carrying 50A, Breaking 16A / 240VAC, On 1s/ Off 9s, at 85°C, 50K ops. (1)
	Making 0A, Carrying 50A, Breaking 0A / 240VAC, On 1s/ Off 9s, at 85°C, 100K ops.
Rated load (Capacitive)	Inrush 230A 100us, Carrying 50A , Breaking 0A / 240VAC, On 1s/ Off 9s, 2,000 ops. (2)
Max. switching load	500A 240VAC, 3 ops. (2)
Max. carrying current	50A
Max. voltage	277VAC

Notes：(1) According to IEC 61851.
(2) According to IEC 62955.

■ 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	333	36	85%	5%	45~50% of rated voltage	approx. 4W / 1W (2)

Notes：(1) To energize relay properly apply 100%~120% nominal coil voltage for 200ms.
(2) Coil holding voltage is 45~50% of nominal voltage after applying nominal voltage for 200ms.

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■ Specification

Contact material	Ag alloy	
Contact resistance (1)	100 mΩ Max. (at 1A/6VDC by 4-wire resistance measurement)	
	8 mΩ Max. (By voltage drop 20A)	
Operate time (1)	20ms Max.	
Release time (1)	10ms Max.	
Vibration resistance	Operating extremes	10~55Hz, 1.5mm
	Damage limits	10~55Hz, 1.5mm
Shock resistance	Operating extremes	10G
	Damage limits	100G
Short circuit (9)	I_p = 3kA and I^2t=11.5kA^2s at In≦40A according to IEC 62955.	
Life expectancy	Mechanical	300,000 ops. (frequency 3,600 ops./hr)
Operating ambient temperature	-40～+85°C (no freezing)	
Weight	Approx. 70 g	

Note：(1) Initial value. Operate and release time excluding contact bounce.

(2) Unless otherwise specified, all tests are under room temperature and humidity.

(3) Consider the heat of PCB is necessary, please check the actual condition of PCB.

(4) 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.

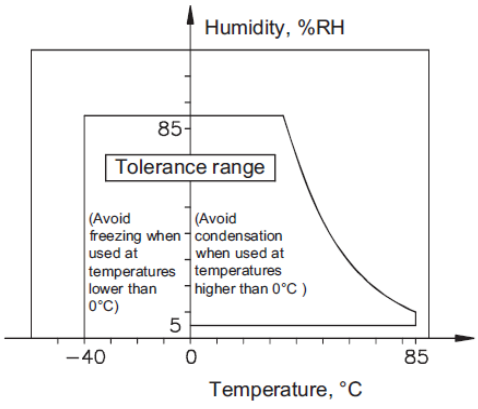
(5) Do not use the relay exceeding the coil rating, contact rating and life expectancy, or this may cause the risk of overheating.

(6) To assure optimum performance, avoid the relay from dropping, hitting, or other unnecessary shocks.

(7) Please pay attention to the phenomenon of freezing in the low temperature environment below 0°C. Please evaluate the actual use of the environment.

(8) Usage, transport and storage conditions

- 1. Temperature: -40 ~ +85°C
- 2. Humidity: 5 to 85% R.H.
- 3. Pressure: 86 to 106 kPa
- Furthermore, the humidity range varies with the temperature. So, use relays within the range indicated in the graph below.



(9) For short circuit test, the test is with fuse.

(10) Please contact Song Chuan for the detailed information.

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■ Insulation Data

Insulation resistance (1)	100MΩ Min. (DC 500V)	
Dielectric strength (1)	Between coil and contact	: AC 4000V, 50/60Hz 1 min.
	Between open contacts	: AC 2000V, 50/60Hz 1 min.
	Between contact circuits	: AC 2000V, 50/60Hz 1 min.
Insulation of IEC 61810-1		
Clearance / creepage distances	Between coil and contact	: Reinforce, ≧ 8.4 mm / ≧ 13.2 mm
	Between open contacts	: Basic, ≧ 1.5 mm(2) / ≧ 5.0 mm
Rated voltage	250V	
Rated impulse withstand voltage	4000V	
Pollution degree	2	
Overvoltage category	III	

Note：(1) Initial value.

(2) Per IEC 62955, the verification of clearance with the impulse withstand voltage is applied for the shown reduced clearance.

■ Safety Approval

Certified	UL / CUL	TUV
File No.	E88991	R50436737

■ Safety Approval Rating (UL / CUL& TUV)

UL / CUL	TUV
16A 277VAC, Resistive, Carrying current 50A(1)	Making 16A, Carrying 51A, Breaking 16A 250VAC；T85 (1)

Note： (1) With 45~50% modulation of nominal coil voltage.

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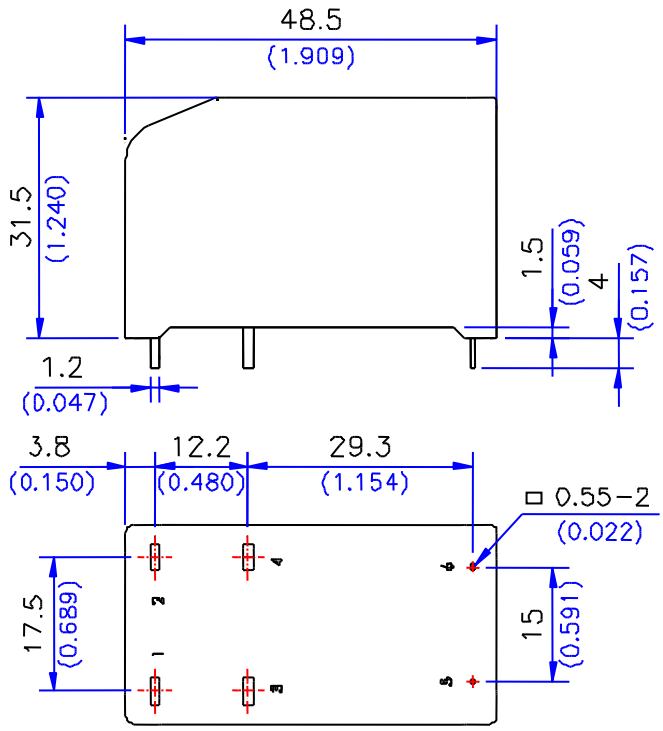
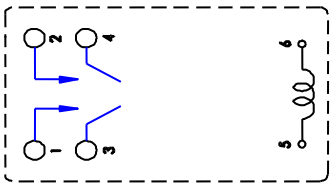
■ Outline Dimensions

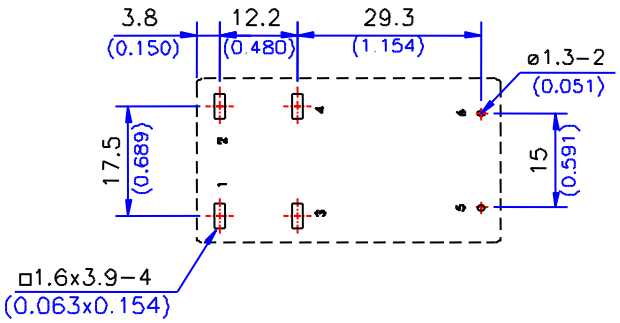


TOLERANCE:
LESS THAN: 1(0.039)±0.1(0.004)
5(0.197)±0.3(0.012)
20(0.787)±0.5(0.020)
MORE THAN:20(0.787)±1(0.039)

■ Wiring Diagram
(Bottom view)



■ PC Board Layout
(Bottom view)



TOLERANCE:±0.1(0.004)