

File No.:E198243



File No.: R 50574994





FEATURES

- · Application: telecommunication equipment, solar, construction machinery, electrical vehicle, electric forklift, train, UPS
- · Heavy load capacity: 120A contact switching capacity
- · Compliant UL60947-4-1 5000A SCPD test

CONTACT RATINGS

Contact Arrangement	1A
Contact Resistance	≤10mΩ(by voltage drop 20A 6VDC)
Contact Material	AgSnO
Contact Rating(Resistive)	120A/305VAC, 120A/60VDC
Contact Gap	3mm
Max. Switching Voltage	600VAC/60VDC
Max. Switching Current	120A
Max. Switching Power	48000VA/7200W
Mechanical Life	1×10 ⁵ operations
Electrical Life	1×10 ⁴ operations

CHARACTERISTICS

Insulation Resistance		1000MΩ (at 500VDC)		
Dielectric	Between coil & contacts	5000VAC 1min (50Hz/60Hz)		
Strength	Between open contacts	2000VAC 1min (50Hz/60Hz)		
Surge Voltage	e(Between coil & contacts)	10kV(1.2/50μs)		
Impulse Cur	rent	400A/350VDC/4ms		
Operate time	e (at nomi. volt.)	≤30ms		
Release time (at nomi. volt.)		≤15ms		
Humidity		5%~85% RH		
Operation temperature		-40°C~+85°C		
UL Class F		Insulation System Class F		
Shock	Functional	98m/s ²		
Resistance	Destructive	980m/s ²		
Temperature Rise		130K Max(contact Load 120A, 110% rated current excitation, @25°C)		
Vibration resistance		10Hz to 55Hz 1.5mm DA		
Unit weight		Approx. 165g		
Construction	1	Flux Tight Type		

ORDERING INFORMATION

HAG12 A DC 24 - XXXX Model -A:SPDMsingle-pole, double-make Coil:DC -Coil Voltage -Customer Code -

Notes:

- 1. PC board assembled with flux tight type relays can not be washed and/or
- 2. Flux tight type relays can not be used in the environment with dust, or H₂S, SO₂, NO₂ or similar gaseous environment etc.

COIL DATA

at 25°C

Nominal Voltage VDC	Operate Voltage (Max.) VDC	Release Voltage (Min.) VDC	*Max. Allowable Voltage VDC	Coil Resistance Ω±10%
12	9.00	0.60	13.20	30.0
18	13.50	0.90	19.80	67.5
24	18.00	1.20	26.40	120.0

Note:"*Max Allowable Voltage": The relay coil can endure max allowable voltage for a short period time only.

COIL

Coil Power	4.8W	
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Notes: The data shown above are initial values.



TECHNICAL DATA

Category of protection according to IEC 61810-1		RT II
Flammability class according to UL94		V-0
Insulation material group		IIIa
Pollution degree		2
	Type of disconnection	Full-disconnection
	Overvoltage category	П
Insulation between open contacts	Rated impulse voltage	2.5kV (1.2/50 μs)
	Creepage distance	11 mm
	Clearance distance	3 mm
	Type of insulation	Reinforced
	Overvoltage category	III
Insulation between coil and contact	Rated impulse voltage	6kV (1.2/50 μs)
	Creepage distance	18.6 mm
	Clearance distance	15 mm

SAFETY APPROVAL RATINGS

	Load Type	Voltage AC/DC		Current	Surrounding air Temp.	Operations
UL&CUL	Resistive load AC	120/220/250/277/288/305/320/400/600	AC	80A	85°C	100,000 ops
	Resistive/General load AC	120/220/250/277/288/305	AC	120A	65°C	10,000 ops
	Resistive load DC	30	DC	100A	80°C	100,000 ops
	Motor	250	AC	5HP	85°C	100,000 ops
	TV load	120/240	AC	TV-20	85°C	100,000 ops
TüV	Resistive load	120/220/250/277/288/305/320/400/600	AC	80A	85°C	30,000 ops
	AC	120/220/250/277/288/305	AC	120A	65°C	10,000 ops
	Resistive load	30	DC	100A	85°C	100,000 ops
	DC	60	DC	120A	65°C	3,000 ops

NOTES

- 1. All values without specified temperature are at 25°C.
- 2. The above lists the typical loads only. Other loads may be available upon request.

This datasheet is for customers' reference. All the specifications are subject to change without notice.



RELAYS

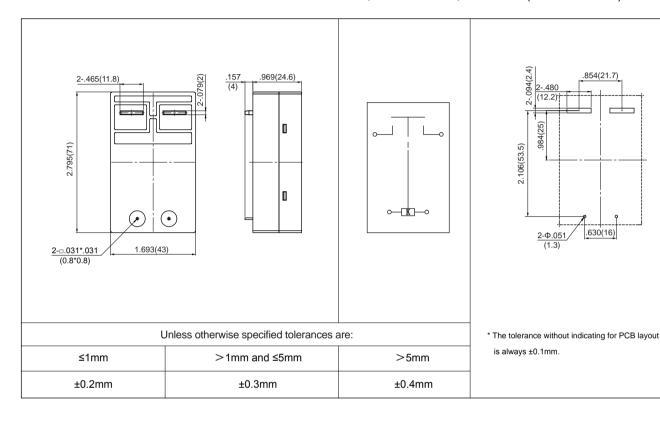
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT.

Unit: inch(mm)

Outline Dimensions

Wiring Diagram (Bottom view)

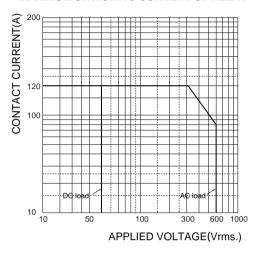
PCB Layout (Bottom view)



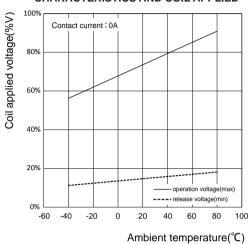


CHARACTERISTIC CURVES

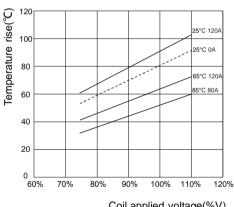
MAXIMUM SWITCHING CURRENT OF RELAY

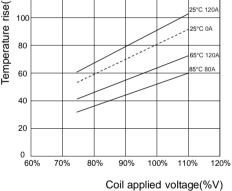


AMBIENT TEMPERATURE **CHARACTERISTICS AND COIL APPLIED**

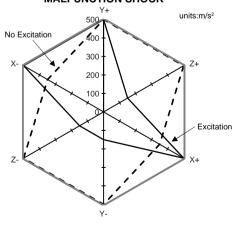


COIL TEMPERATURE RISE

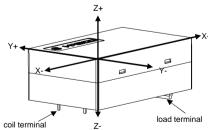




MALFUNCTION SHOCK



Shock direction



Measure the value of contact malfunction happening by applying 3 axes with 6 direction 3 times each.



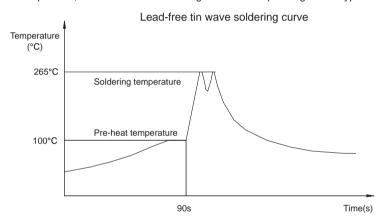
PACKAGING SPECIFICATION

BLISTER BOX	OUTER CARTON	OUTER CARTON SIZE
8PCS	48PCS	L455mm*W220mm*H185mm

APPLICATION GUIDELINES

Automatic Wave Soldering

- * Wave solder is the optimum method for soldering.
- * Adjust the level of solder so that it does not overflow onto the top of the PC board.
- * Unless otherwise specified, solder under the following conditions depending on the type of relay.



Preheat time	Rising slope	Decreasing slope	Soldering temperature
20°C-100°C	20°C-120°C	Peak-150°C	255°C-265°C
90±5 seconds	<3°C/s	<4°C/s	3~5s

Hand Soldering

* Keep the tip of the soldering iron clean.

Solder Iron	30W or 60W
Iron Tip Temperature	Approx. 350°C 662°F
Solder Time	Within approx. 3 seconds

- * Immediate air cooling is recommended to prevent deterioration of the relay and surrounding parts due to soldering heat.
- * Although the sealed type relay can be cleaned, avoid immersing the relay into cold liquid (such as washing solvent) immediately after soldering. Doing so may deteriorate the sealing performance.

Discard the dropped product

