HAT904 SERIES

POWER RELAY

c UL us
File No.:E75887

File No.:R 50491935

File No.:CQC21002292049

RoHS Compliant

FEATURES

- 50A switching capabilities
- DPST-N.O. and DPDT configuration
- Meets 8mm spacing，4K VAC dielectric strength
- Meets UL Class F insulation system
- Dust cover or sealed version & PCB or QC Terminal
- Outline Dimensions:(52.0×33.7×26.7)mm

CONTACT RATINGS

Contact Arrangement	2A, 2C
Contact Resistance	≤50mΩ（1A 24VDC）
Contact Material	AgSnO
Contact Rating(Resistive)	N.O.:50A/277VAC, 30A/30VDC N.C.:3A/277VAC
Max. Switching Voltage	277VAC/30VDC
Max. Switching Current	50A/40A
Max. Switching Power	13850VA/1200W
Mechanical Life	5×10^6 operations
Electrical Life	See more details at "safety approval ratings"

CHARACTERISTICS

Insulation Resistance		1000MΩ（at 500VDC）
Dielectric Strength	Between coil & contacts	4000VAC 1min
	Between open contacts	1500VAC 1min
	Between contacts sets	2000VAC 1min
Operate time (at nomi. volt.)		≤25ms
Release time (at nomi. volt.)		≤25ms
Humidity		5% ~ 85% RH
Operation temperature		DC:-40°C~+85°C, AC:-40°C~+65°C
UL Class F		Insulation System Class F
Shock Resistance	Functional	98m/s²
	Destructive	980m/s²
Vibration resistance		10Hz ~ 55Hz 1.65mm DA
Unit weight		Approx. 86g
Construction		Sealed Type, Dust Cover Type, Flux Tight Type

Notes: The data shown above are initial values.

ORDERING INFORMATION

HAT904 F 2C DC 12 Q C - XXXX

Model

F:Class F

Form: 2A=2 Form A, 2C=2 Form C

DC=DC Type AC=AC Type 50Hz/60Hz
5AC=AC Type 50Hz 6AC=AC Type 60Hz

Coil Voltage

Blank:PC Pin Q/QN:Quick Connect/Flange Mounting
Q: DIM"A"=6.35 QN: DIM"A"=4.75

C:Dust Cover Type E:Flux Tight Type(Vent Hole not Sealed)
Blank:Sealed Type

Customer Code

Notes:
1. PC board assembled with dust cover type and flux tight type relays can not be washed and/or coated.
2. Dust cover type and flux tight type relays can not be used in the environment with dust, or H_2S, SO_2, NO_2 or similar gaseous environment etc.

COIL DATA at 25°C

DC

Nominal Voltage VDC	Operate Voltage (Max.) VDC	Release Voltage (Min.) VDC	*Max. Allowable Voltage VDC	Coil Resistance Ω±10%
5	3.8	0.5	8.0	15.3
6	4.5	0.6	9.6	22
12	9.0	1.2	19.2	86
24	18.0	2.4	38.4	350
28	21.0	2.8	44.8	470
48	36.0	4.8	76.8	1390
110	82.5	11.0	176.0	7255

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COIL DATA at 25°C

AC

Nominal Voltage VAC	Operate Voltage (Max.) VAC	Release Voltage (Min.) VAC	*Max. Allowable Voltage VAC	Coil Resistance Ω±10%	
				60 Hz	50 Hz
12	9.6	2.4	13.2	8.00	9.5
24	19.2	4.8	26.4	35.7	45
120	96.0	24.0	132	830	1125
208	166.4	41.6	229	2600	3278
220	176.0	44.0	242	2870	3800
240	192.0	48.0	264	3800	4500
277	221.6	55.4	305	4700	5960

AC(50Hz/60Hz)

Nominal Voltage VAC	Operate Voltage (Max.)VAC		Release Voltage (Min.)VAC		*Max. Allowable Voltage VAC	Coil Resistance Ω±10%
	50 Hz	60 Hz	50 Hz	60 Hz		
120	88.0	96.0	22.0	24.0	132	950
208	160.0	166.4	40.0	41.6	229	2481
240	176.0	192.0	44.0	48.0	264	3800
277	200.0	221.6	50.0	55.4	305	5485

Note:

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

COIL

Coil Power	DC:Approx. 1700mW AC:Approx. 4.0VA

SAFETY APPROVAL RATINGS

UL&CUL	N.O.	30A 277VAC/250VAC/240VAC/125VAC, General use & Resistive, 100K cycles, 85°C 1.5HP 120VAC, Motor, 50K cycles, 40°C 2HP 240VAC, Motor, 50K cycles, 40°C 2HP 600VAC, Motor, 100K cycles, 40°C 110LRA/25.3FLA 240VAC, Definite purpose, 100K cycles, 40°C
	N.C.	3A 277VAC/250VAC/240VAC/125VAC, General use & Resistive, 100K cycles, 85°C

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.

TüV	N.O.	50A 277VAC, Resistive, 20k cycles 40A 277VAC, Resistive, 30k cycles 30A 120VAC/277VAC, Resistive, 200K cycles 20A 480VAC, Resistive, 100K cycles 10A 600VAC, Resistive, 100K cycles 20A 28VDC, Resistive, 100K cycles
	N.C.	3A 277VAC, Resistive, 100K cycles 3A 400VAC, Resistive, 30K cycles 2A 480VAC, Resistive, 100K cycles 1A 600VAC, Resistive, 100K cycles
	C.O.	N.O.: 30A 400VAC, N.C.: 3A 400VAC, 30K cycles
CQC	N.O.	50A 277VAC, Resistive, 20k cycles 30A 250VAC/400VAC, 30A/30VDC, 100K cycles
	N.C.	3A 250VAC/400VAC, 3A/30VDC, 100K cycles
	C.O.	N.O.: 30A 250VAC/400VAC, 30A/30VDC, 100K cycles N.C.: 3A 250VAC/400VAC, 3A/30VDC, 100K cycles

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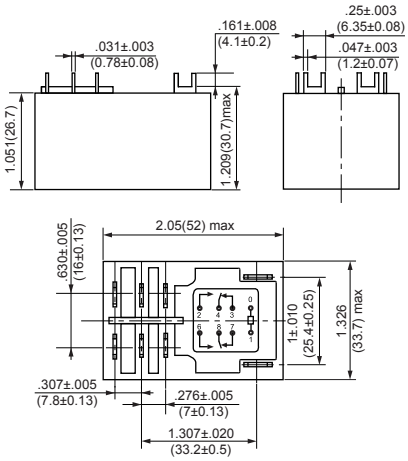
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT.

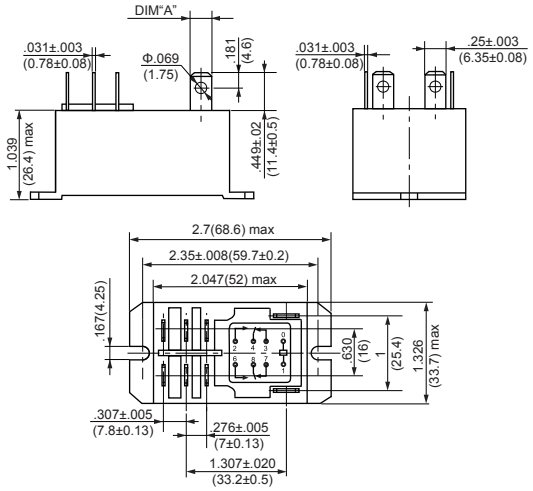
Unit: inch(mm)

Outline Dimensions

PC Pin

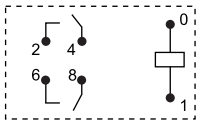


Quick Connect

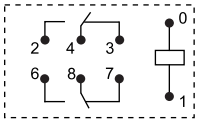


Q: DIM"A"=.25±.003(6.35±0.08)
QN: DIM"A"=.187±.003(4.75±0.08)

Wiring Diagram (Bottom view)

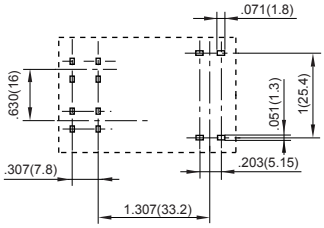


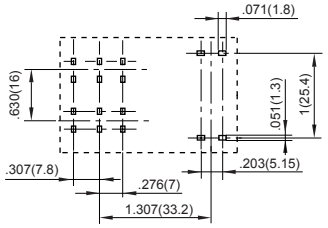
2A



2C

PCB Layout (Bottom view)





* The tolerance without indicating for PCB layout is always ±0.1mm.

Unless otherwise specified tolerances are:		
≤1mm	＞1mm and ≤5mm	＞5mm
±0.2mm	±0.3mm	±0.4mm

PACKAGING SPECIFICATION

BLISTER BOX	OUTER CARTON	OUTER CARTON SIZE
30PCS	120PCS	L420mm*W330mm*H210mm

APPLICATION GUIDELINES

Automatic Soldering

* Flow 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 20°C-100°C	Rising slope 20°C-120°C	Decreasing slope Peak-150°C	Welding temperature 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