HLRA6A-5

Safety relay (Relay with forced guide contact)

Features

- Forced-guided contact structure according to IEC61810-3(equivalent to EN50205)
- Strong load capacity: 8A contact switching ability
- Strong insulation ability: the medium betwee n the contact and the coil can withstand 4kV
- UL Insulation class: F insulation class is avail able
- Overall dimensions: 55.0mm x16.5mm x15.7 mm

RoHS compliant

Contact parameter

Contact form	3H3D、4H2D、5H1D
Structural classification (according to EN50205)	Class A mandatory orientation
Contact resistance(1)	≤2Ω (6VDC 10mA) ≤100mΩ (6V 1A)
Contact material	$AgSnO_2$ +gild
Rated load(resistive)	8A 250VAC/30VDC
Maximum switching voltage	400VAC /220VDC(0.2A resistive load)
Maximum switching current	8A
Maximum switching power	2000VA /240W
Switch capacity DC-13	2NO:6A 24VDC(1s on 9s off)
Switch capacity AC-15	2NO:5A 250VAC(1s on 9s off)
Mechanical durability	1 x 10^7time
Electrical durability	5 x 10^4time(1NO: 8A 250VAC, Resistive load, 85°C, (1s on 9s off)

Note: (1) The above values are initial values.

Performance parameter

Insulation resistance		1000MΩ (500VDC)
Dielectric withstand voltage	Between coil and contact	4000VAC 1min
	Between contact groups	3000VAC 1min
	Disconnect between contacts	1500VAC 1min
Surge voltage (between coil and contact)		6kV (1.2 / 50μs)
Operating time (at rated voltage)		≤20ms
Release time (at rated voltage)		≤20ms
Coil temperature rise (at rated voltage)		≤70K (2 groups of normal parallel contact load 8A, Rated voltage excitation, ambient temperature 85°C)
strike	stability	10g(NO)
	intensity	980m/s^2
Vibration		10Hz ~ 200Hz 10g(NO)
humidness		5% ~ 85% RH
Temperature range		-40°C ~ 85°C
Outlet form		Printed plate
weight		About 25g
Encapsulation mode		Plastic seal

Note: (1) The above values are initial values;

Coil specification sheet at 23°C

Standard type:

Rated voltage VDC	Operating voltage VDC(1)	Release voltage VDC(1)	Maximum voltage(2) VDC	Coil resistance Ω
5	3.75	0.5	6	20.8 x (1±10%)
6	4.50	0.6	7.2	30 x (1±10%)
9	6.75	0.9	10.8	67.5 x (1±10%)
12	9.00	1.2	14.4	120 x (1±10%)
15	11.3	1.5	18	188 x (1±10%)
18	13.5	1.8	21.6	270 x (1±10%)
21	15.8	2.1	25.2	368 x (1±10%)
24	18.0	2.4	28.8	480 x (1±10%)
36	27.0	3.6	43.2	1080x (1±10%)
40	30.0	4.0	48	1333 x (1±10%)
48	36.0	4.8	57.6	1920 x (1±10%)
50	37.5	5.0	60	2083 x (1±15%)
60	45.0	6.0	72	3000 x (1±15%)
110	82.5	11.0	132	10083x (1±15%)

Sensitive type:

Rated voltage VDC	Operating voltage VDC(1)	Release voltage VDC(1)	Maximum voltage(2) VDC	Coil resistance Ω
5	3.80	0.5	6	31.2x (1±10%)
6	4.50	0.6	7.2	45 x (1±10%)
9	6.75	0.9	10.8	101.3 x (1±10%)
12	9.00	1.2	14.4	180 x (1±10%)
15	11.3	1.5	18	281 x (1±10%)
18	13.5	1.8	21.6	405 x (1±10%)
21	15.8	2.1	25.2	550 x (1±10%)
24	18.0	2.4	28.8	720 x (1±10%)
36	27.0	3.6	43.2	1620x (1±10%)
40	30.0	4.0	48	2000 x (1±10%)
48	36.0	4.8	57.6	2880 x (1±10%)
50	37.5	5.0	60	3125 x (1±15%)
60	45.0	6.0	72	4500 x (1±15%)
110	82.5	11.0	132	15125x (1±15%)

Note: (1) The above values are initial values;
(2) The maximum voltage refers to the maximum daily voltage value that the relay coil can withstand in a short period of time.

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Coil parameter

Rated coil power	Approx. 1200mW(standard) Approx. 800mW(sensitive)
Holding voltage 1)	50% ~ 100%U_N(at 23℃) 60% ~ 100%U_N(at 85℃)

Note :1) Coil holding voltage is the coil voltage applied after the rated voltage is applied to the coil 100ms.

Safety certification

UL/CUL	8A 250VAC cos(phi)=1 85℃ 8A 30VDC L/R=0 85℃ NO:B300 R300 85℃ NC:C300 R300 85℃
TÜV	8A 250VAC cos(phi)=1 85℃ 8A 30VDC L/R=0 85℃ 5A 250VAC(AC-15) 40℃ 6A 24VDC(DC-13) 40℃

Note: (1) For loads whose temperature is not indicated in the table, the ambient temperature is room temperature;
(2) The above only lists some typical loads of the product certification, the detailed test strips of each load are different, so the electrical durability life times are not the same, if you need detailed information, please contact us.

Order mark example

HLRA6A / 18- 4H2D S 1 L T F G (XXX)

Relay type	
Coil voltage	5,6,9,12,15,18,21,24,36,48,50,60,110VDC
Contact form	**3H3D**: 3 groups normally open + 3 groups normally closed **4H2D**: Four groups normally open + two groups normally closed **5H1D**: 5 groups normally open + 1 group normally closed
Plastic seal form	**S:**Plastic seal type
Foot form	**1:**Regular foot position **2:**V-shaped foot position (only for 4H2D)
Coil power consumption	**L:** Sensitive (Power consumption: 0.8W) None: Conventional (P ower consumption: 1.2W)
Contact material	**T:** $AgSnO_2$
Insulation class	**F:** Class F
Contact coating	**G:**Au plated
Property number(3)	**XXX:** Customer's special request None: Standard type

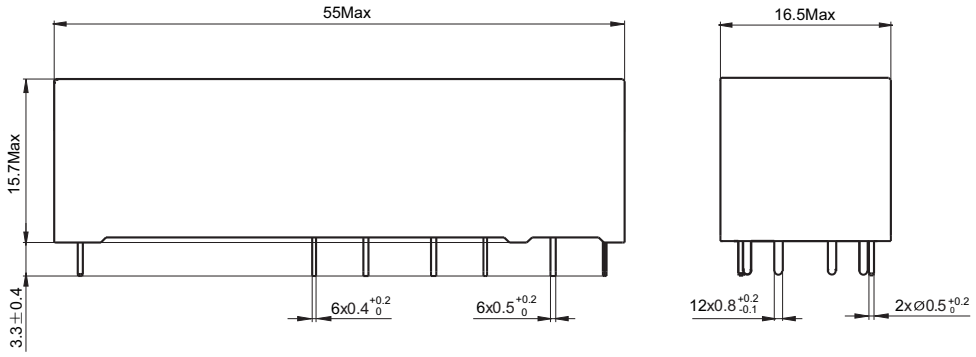
Note: (1) This product is a flux-proof product and cannot be used in polluted environment (containing a certain amount of H_2S、SO_2、NO_2, dust and other pollutants) :
(2) After soldering the anti-flux products into the PCB board, they can not be cleaned or treated as a whole;
(3) The special requirements of customers shall be identified by the form of feature number after review by our company.

Outline drawing, wiring diagram, mounting hole dimensions

Unit: mm

HLRA6A/□□-3H3D□□1□□(□□)

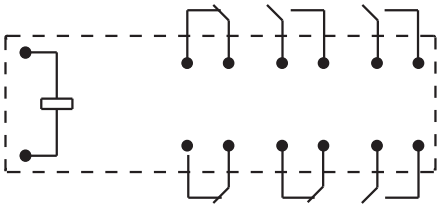
External drawing



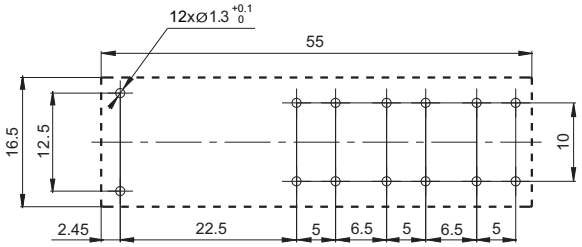
Outline drawing, wiring diagram, mounting hole dimensions

Unit: mm

Wiring diagram
(Bottom view)

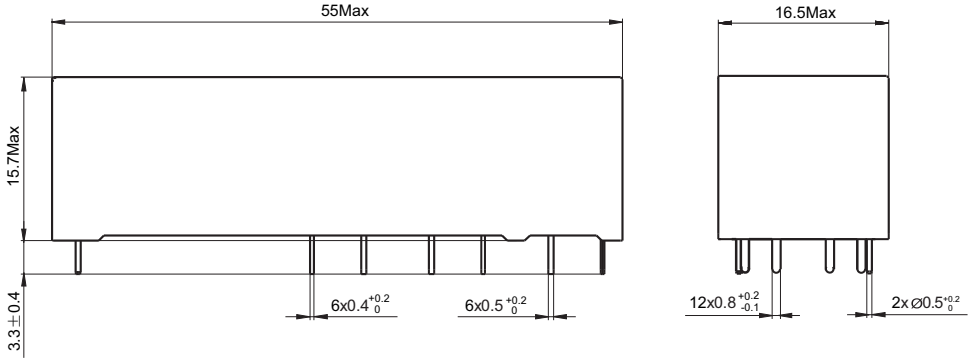


Mounting hole size
(Bottom view)

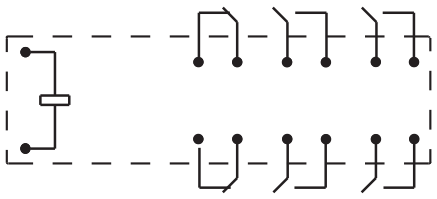


HFA6A/□□-4H2D□□1□□(□□)

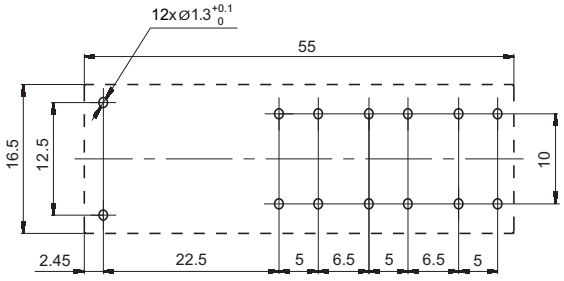
External drawing



Wiring diagram
(Bottom view)



Mounting hole size
(Bottom view)

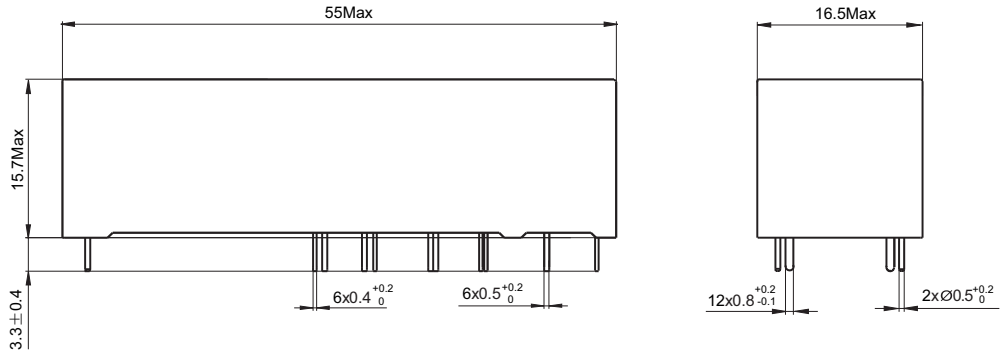


Outline drawing, wiring diagram, mounting hole dimensions

Unit: mm

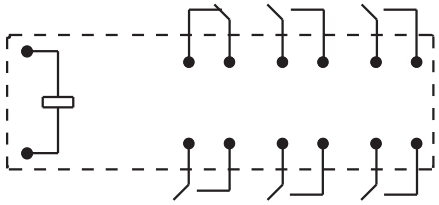
HFA6A/□□-5H1D□□1□□(□□)

External drawing



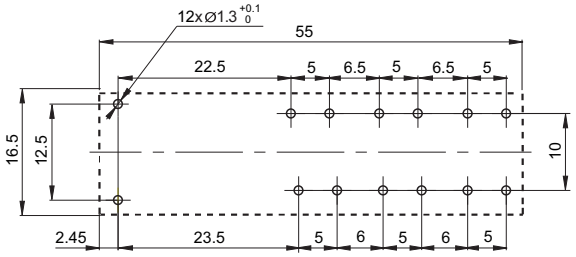
Wiring diagram

(Bottom view)



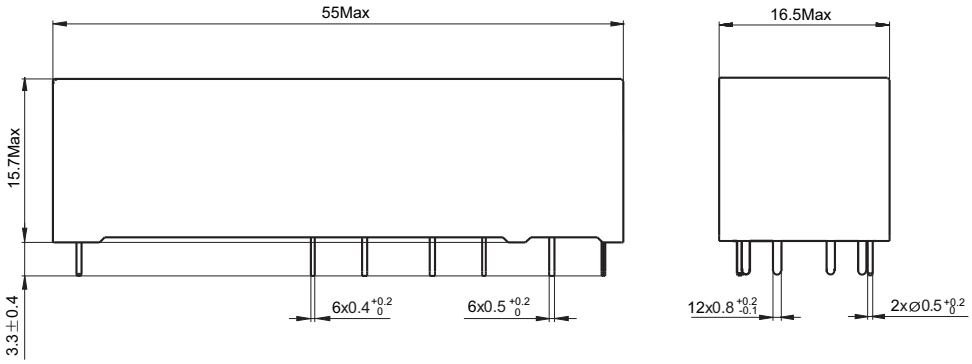
Mounting hole size

(Bottom view)



HFA6A/□□-4H2D□□2□□(□□)

External drawing

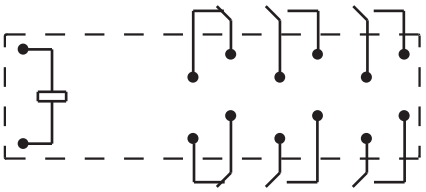


Outline drawing, wiring diagram, mounting hole dimensions

Unit: mm

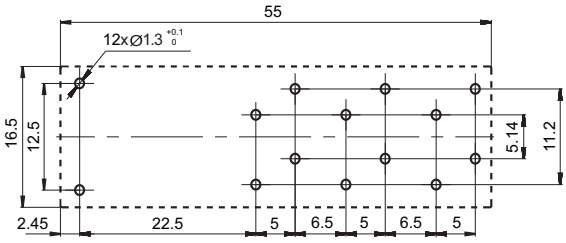
Wiring diagram

(Bottom view)



Mounting hole size

(Bottom view)



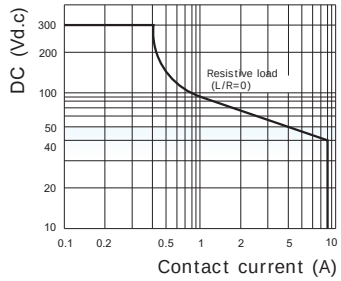
Note :(1) The pin marking size of the product outline drawing is the size before tin dipping (it will be larger after tin dipping), and the installation hole size is the recommended design size of PCB hole. The specific design size of PCB hole can be mapped and adjusted according to the actual product;

(2) No dimensional tolerance is noted in the outline size of the product part, when the outline size is less than 1mm, the tolerance is ±0.2mm; When the overall dimensions are between (1-5)mm, the tolerance is ±0.3mm; When the overall size is >5mm, the tolerance is ±0.4mm;

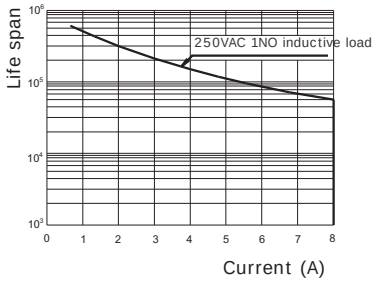
(3) The dimension tolerance of the mounting hole is ±0.1mm.

Performance curve

Load switching capability curve



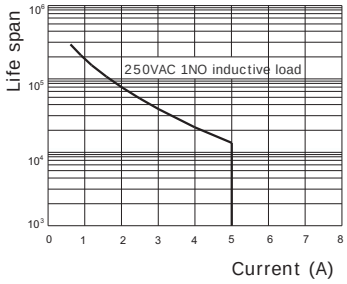
Electrical durability curve



Test conditions:

250Va.c.，85℃，1s on 9s off

Electrical durability curve of AC-15

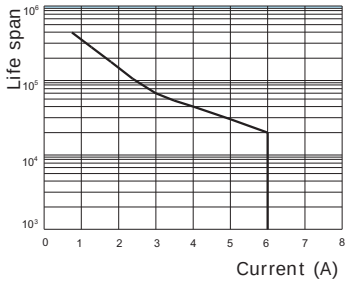


Test conditions:

1)AC-15 life durability test according to IEC 61810-1 Appendix B Table B.3.

2)AC-15 test load: 250VAC, 85°C, 1s on 9s off

DC-13 electrical durability curve



Test conditions:

1)DC-13 life durability test according to IEC 61810-1 Appendix B Table B.3.

2)DC-13 test load: 24VDC, 85°C, 1s on 9s off.