



# HLR-A4B-7

# Forced guide relay



### Features

- Forced-guided contact structure according to IEC61810-3(equivalent to EN50205)
- Load switching capacity: 8A
- Mechanical durability:  $4 \times 10^7$  times
- Medium voltage: 4kV(between coil and contact; Intergroup)
- UL Insulation class: F class
- Overall dimensions: (41.7×25×10.2) mm

**RoHS compliant**

### Contact parameter

Contact form	2NO+2NC,3NO+1NC
Mandatory oriented type (According to IEC 61810-3)	Class A mandatory orientation
Contact resistance <sup>(1)</sup>	$\leq 100m\Omega$ (6VDC 100mA)
Contact material	AgSnO <sub>2</sub> +gild
Rated load	8A 250VAC/ 30VDC
Maximum switching voltage	400VAC(3.5A Resistive load)
Maximum switching current	8A
Maximum switching power	2000VA / 240W
Switch capacity DC-13	1NO:4A 24VDC(1s on 9s off)
Switch capacity AC-15	1NO:3A 250VAC(1s on 9s off)
Mechanical durability	$4 \times 10^7$ time
Electrical durability	$5 \times 10^4$ time(1NO:85°C, 1s on 9s off, 8A 250VAC, Resistive load)

Note: The preceding values are initial values.

### Performance parameter

Insulation resistance	1000MΩ(500VDC)	
Dielectric withstand voltage	Disconnect between contacts	1500VAC 1min
	Between contact groups	4000VAC 1min
	Between coil and contact	4000VAC 1min
Surge voltage	Between contact groups	6kV(1.2/50μs)
	Between coil and contact	6kV(1.2/50μs)
Operating time (at rated voltage)	$\leq 20ms$	
Release time (at rated voltage)	$\leq 10ms$	
Coil temperature rise	$\leq 70K$ (all normally open contact load 8A, rated voltage excitation, ambient temperature 85°C)	
strike	stability	10g(NO)
	intensity	980m/s <sup>2</sup>
Vibration	10Hz ~ 200Hz 5g(NO)	
Humidity	5% ~ 85%RH	
Temperature range	-40°C ~ 85°C	
Outlet form	Printed plate	
Weight	About 15.5g	
Encapsulation mode	Plastic seal	

Note: The preceding values are initial values.

### Coil parameter

Rated coil power	About 0.65W
Holding voltage <sup>(1)</sup>	50%~100%U <sub>N</sub> (Ambient temperature 23°C)
	60%~100%U <sub>N</sub> (Ambient temperature 85°C)

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

### Coil specification sheet 23°C

Rated voltage VDC	Operating voltage VDC <sup>(1)</sup>	Release voltage VDC	Maximum voltage VDC <sup>(2)</sup>	Coil resistance
5	$\leq 3.5$	$\geq 0.5$	6.5	38 × (1±10%)
6	$\leq 4.2$	$\geq 0.6$	7.8	55 × (1±10%)
9	$\leq 6.3$	$\geq 0.9$	11.7	125 × (1±10%)
12	$\leq 8.4$	$\geq 1.2$	15.6	220 × (1±10%)
15	$\leq 10.5$	$\geq 1.5$	19.5	350 × (1±10%)
18	$\leq 12.6$	$\geq 1.8$	23.4	500 × (1±10%)
21	$\leq 14.7$	$\geq 2.1$	27.3	680 × (1±10%)
24	$\leq 16.8$	$\geq 2.4$	31.2	900 × (1±10%)
36	$\leq 25.2$	$\geq 3.6$	46.8	2000 × (1±10%)
48 <sup>(3)</sup>	$\leq 33.6$	$\geq 4.8$	62.4	3600 × (1±10%)
60 <sup>(3)</sup>	$\leq 42$	$\geq 6$	78	5600 × (1±10%)
110 <sup>(3)</sup>	$\leq 77$	$\geq 11$	143	18500 × (1±10%)

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

(2) The maximum voltage refers to the maximum voltage value that the relay can withstand in a short time;

(3) For products with rated voltage  $\geq 48V$ , in order to protect the coil from damage, in the test and application, there must be measures to inhibit the coil from generating overvoltage (such as: two-way voltage regulator in parallel with the coil).

### Safety certification

UL/CUL	8A 250/277VAC cos(phi)=1 85°C 8A 30VDC L/R=0 85°C NO: B300 Q300 85°C NC: Q300 85°C NO: 3.5A 400VAC cos(phi)=1 85°C
TUV	8A 250/277VAC cos(phi)=1 85°C 8A 30VDC L/R=0 85°C NO: 3A 250VAC(AC-15) 85°C 4A 24VDC(DC-13) 85°C

Note: The above only lists the typical load of the certification part of the product, if you need more details, please contact us.



Order mark example

	<b>HLRA4B-7/ 12 -2H2D S T F G (XXX)</b>
Relay type	
Coil voltage	5,6,9,12,15,18,21, 24,36,48,60,110 VDC
Contact form	<b>2H2D</b> : Two groups normally open + two groups normally closed <b>3H1D</b> : Three sets of normally open + one set of normally closed
Encapsulation form	<b>S</b> : Plastic seal
Contact material	<b>T</b> : AgSnO <sub>2</sub>
Insulation class	<b>F</b> : Grade F
Contact coating	<b>G</b> : Contact gold plating
Special feature number	<b>XXX</b> : Customer special requirements      None: Standard type

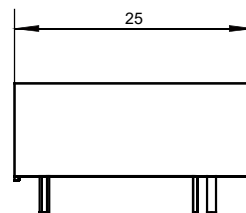
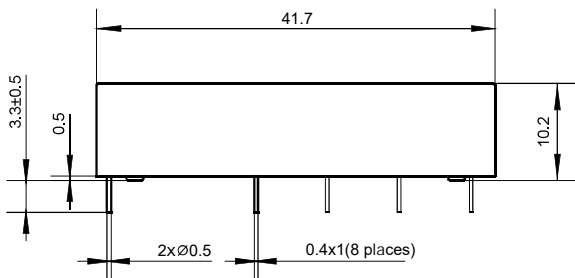
Note: (1) When the relay is loaded into the PCB board after welding, if the need for overall cleaning and surface treatment, please contact our company to confirm, in order to provide suitable products.  
(2) The special requirements of customers shall be identified by the form of feature number after review by our company.

Outline drawing, wiring diagram, mounting hole dimensions

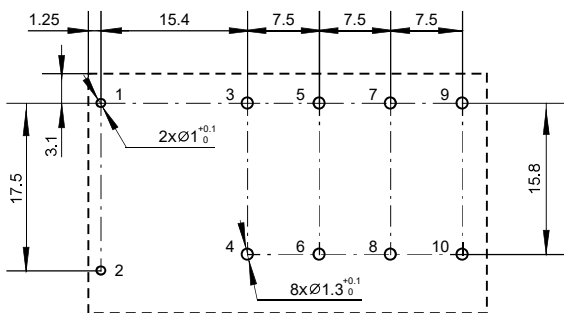
Unit: mm

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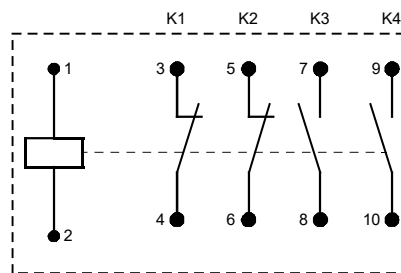
External drawing



Mounting hole size (Bottom view)



Wiring diagram (Bottom view)



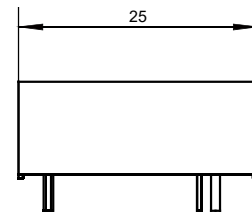
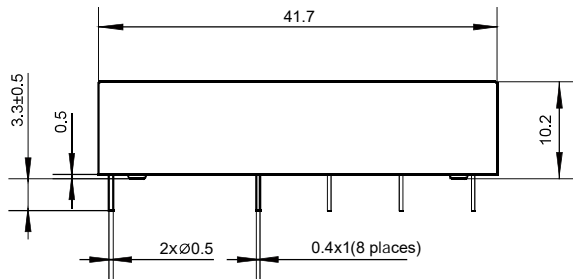


Outline drawing, wiring diagram, mounting hole dimensions

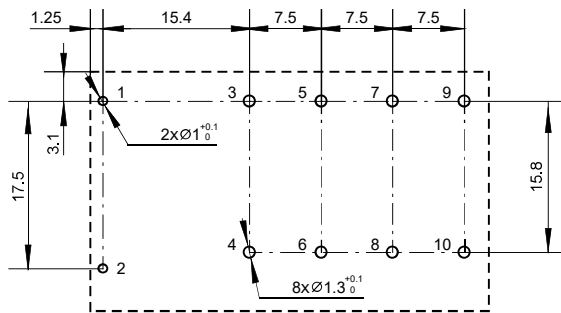
Unit: mm

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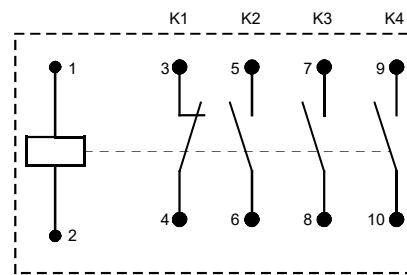
External drawing



Mounting hole size (Bottom view)



Wiring diagram (Bottom view)



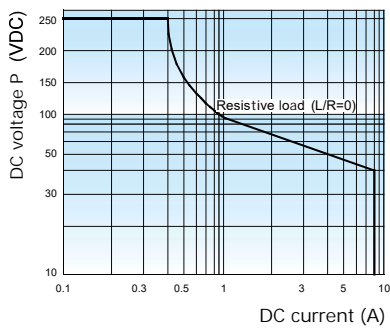
Note: (1) The pin size of the product outline drawing is the size before tin dipping (it will be larger after tin dipping), and the installation hole size is the recommended design size of the PCB hole. The specific design size of the PCB hole can be mapped and adjusted according to the actual product;

(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  $\pm 0.2\text{mm}$ ; When the overall size is between (1 and 5)mm, the tolerance is  $\pm 0.3\text{mm}$  and the tolerance is  $\pm 0.4\text{mm}$ .

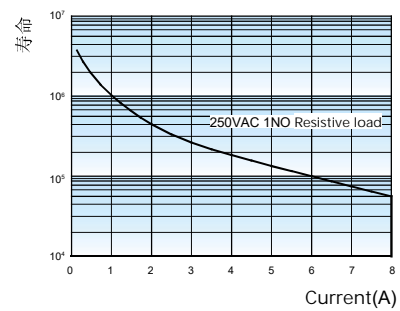
(3) The dimension tolerance of the mounting hole is  $\pm 0.1\text{mm}$ .

Performance curve

Maximum DC load capacity



Electrical durability curve

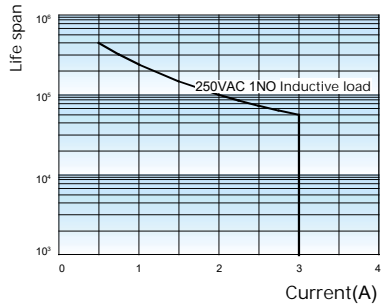


Test conditions:  
250VAC, 85°C, 1s on 9s off



## Performance curve

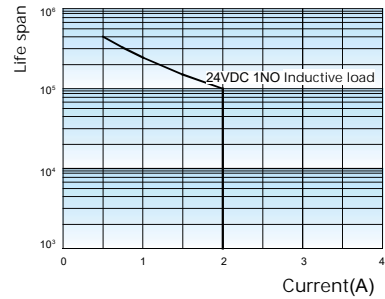
Load curve of AC-15



Note:

- (1) AC-15 life is tested according to IEC 60947-5-1 standard.
- (2) AC-15 test load: 250VAC, 85%, 1s on 9s off.

Load curve of DC-13



Note:

- (1) The life of DC-13 is tested according to IEC 60947-5-1 standard.
- (2) DC-13 test load: 24VDC, 85%, 1s on 9s off.