







HLR-140FF-G-14

Small medium power relay



Features

- 16A contact switching capability
- The dielectric voltage between the coil and the contact is 5kV
- Products with 1.5mm/2.0mm contact clearance specifications are available
- Plastic seal type and flux proof type are available
- A variety of outlets are available
- UL Insulation class: F insulation class is available

RoHS compliant

Contact parameters

Contact form	2H, 2Z
Contact resistance	≤100mΩ (1A 6VDC)
Contact material	AgSnO ₂
Rated load (resistance)	16A 250VAC
Maximum switching voltage	250VAC
Maximum switching current	16A
Maximum switching power	4000VA
Mechanical durability	W type: 1 x 10 ⁵ times
Electrical durability	W type(1.5mm)-2ZWTF: NO 3 x 10 ⁴ times, NC 1 x 10 ⁴ times (Resistive load, 1s on 9s off) W type(2.0mm)-2ZWTF(456): NO 3 x 10 ⁴ times, NC 6 x 10 ³ times (Resistive load, 1s on 9s off)

Note: (1) The above values are initial values;
 (2) The air vent should be opened when the electric durability test is carried out for the plastic sealing type specifications;
 (3) Large gap (W type) products: the ambient temperature of the relay is -40°C~75°C. (When 75°C~85°C is used, it is necessary to maintain voltage reduction: first apply the rated voltage of 200ms to ensure the stability of the connection, and then reduce to 45-65% of the rated voltage.)

Safety certification

UL	16A 250VAC AC Resistive load85°C 1/3HP 125VAC NO/NC,40°C 3/4HP 250/240VAC,NO,40°C TV-5, 125VAC,40°C
TÜV	16A 250VAC AC Resistive load85°C
CQC	16A 250VAC AC Resistive load85°C

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 conditions of each load are different, so the number of electrical durability is not the same, if you need to know the details, please contact our company.

Performance parameters

Insulation resistance	1000MΩ (500VDC)	
Dielectric withstand voltage	Between coil and contact	5000VAC 1min
	Between contact groups	3000VAC 1min
	Disconnect between contacts	W type: 2500VAC 1min
Surge voltage(Between coil and contact)	10kV(1.2/50μs)	
Operating time (at rated voltage)	≤20ms	
Release time (at rated voltage)	≤15ms	
Humidity	5% ~ 85% RH	
Temperature range	-40°C~ 85°C	
strike	stability	98m/s ²
	intensity	980m/s ²
Vibration	10Hz ~ 55Hz 1.5mm Double amplitude	
Outlet form	Printed plate	
Weight	About 19g	
Encapsulation mode	Plastic seal type, flux proof type	

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

Coil parameters

Rated coil power	W type(1.5mm): About 800mW W type(2.0mm): About 1.4W
------------------	---



Coil specification sheet

23°C

W type(1.5mm)

Rated voltage VDC	Operating voltage VDC	Release voltage VDC	Maximum voltage VDC	Coil resistance
3	≤2.40	≥0.15	3.3	11.3 x (1±10%)
5	≤4.00	≥0.25	5.5	31 x (1±10%)
6	≤4.80	≥0.30	6.6	45 x (1±10%)
9	≤7.20	≥0.45	9.9	101 x (1±10%)
12	≤9.60	≥0.60	13.2	180 x (1±10%)
15	≤12.0	≥0.75	16.5	280 x (1±10%)
18	≤14.4	≥0.90	19.8	405 x (1±10%)
24	≤19.2	≥1.20	26.4	720 x (1±10%)
36	≤28.8	≥1.80	39.6	1620x (1±10%)
48	≤38.4	≥2.40	52.8	2880 x (1±10%)
60	≤48.0	≥3.00	66.0	4500 x (1±10%)
110	≤88.0	≥5.50	121.0	15100 x (1±10%)

W type(2.0mm)

Rated voltage VDC	Operating voltage VDC	Release voltage VDC	Maximum voltage VDC	Coil resistance
3	≤2.40	≥0.15	3.3	6x (1±10%)
5	≤4.00	≥0.25	5.5	18 x (1±10%)
6	≤4.80	≥0.30	6.6	26 x (1±10%)
9	≤7.20	≥0.45	9.9	58 x (1±10%)
12	≤9.60	≥0.60	13.2	102 x (1±10%)
15	≤12.0	≥0.75	16.5	160 x (1±10%)
18	≤14.4	≥0.90	19.8	230 x (1±10%)
24	≤19.2	≥1.20	26.4	410 x (1±10%)
36	≤28.8	≥1.80	39.6	925x (1±10%)
48	≤38.4	≥2.40	52.8	1650 x (1±10%)
60	≤48.0	≥3.00	66.0	2570 x (1±10%)
110	≤88.0	≥5.50	121.0	8068 x (1±10%)

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

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

(3) In order to achieve the specified product performance, please apply the rated voltage to the coil when using;

(4) 1.5mm/2.0mm contact gap conversion product operating voltage ≤85% rated voltage, coil resistance tolerance is (1±15%).

Order mark example

HLR-140FF-G-14/ 024 -2Z S W T G F (XXX)	
Relay type	
Coil voltage	3, 5, 6, 9, 12, 15, 18, 24, 36, 48, 60, 110VDC
Contact form	2H: Both groups are normally open 2Z: Two sets of conversions
Encapsulation mode	S: Plastic seal type None: anti-flux type
Contact clearance	W: Big gap
Contact material	T: AgSnO ₂
Contact coating	G: Gold plating None: not gold-plated
Insulation class	F: Level F None: Level F
Property number	XXX: Customer special requirements None: Standard type

Note: (1) When used in a clean environment (without H₂S, SO₂, NO₂, dust and other pollutants), it is recommended to use anti-flux products;

When used in polluted environment (containing a certain amount of H₂S, SO₂, NO₂, dust and other pollutants), it is recommended to use plastic sealed products, and please confirm in actual use;

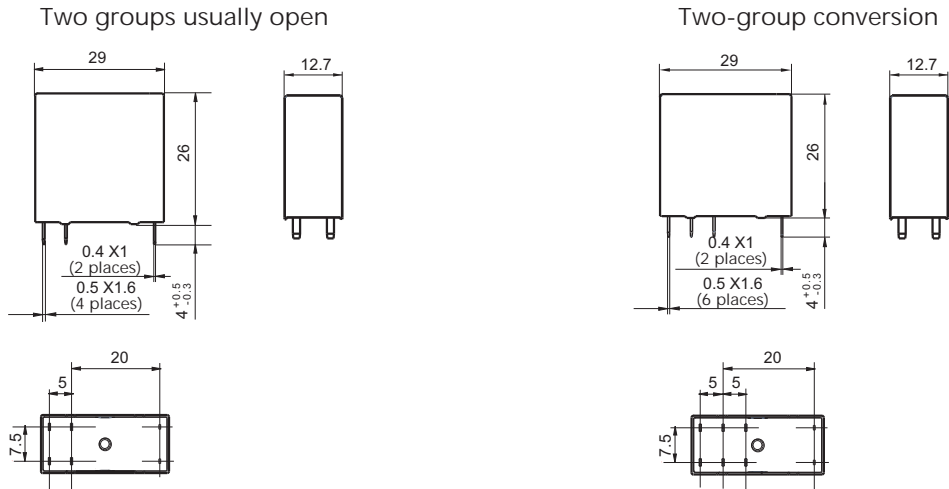
(2) When the relay is loaded into the PCB board after welding, if the need for overall cleaning or surface treatment, please contact our company in order to agree on appropriate welding conditions and appropriate product specifications;

(3) W type has 1.5mm, 2.0mm two specifications, when you choose W type (large gap), the default is 1.5mm specification, if you need 2.0mm specification, please add the feature number "(456)" when ordering;

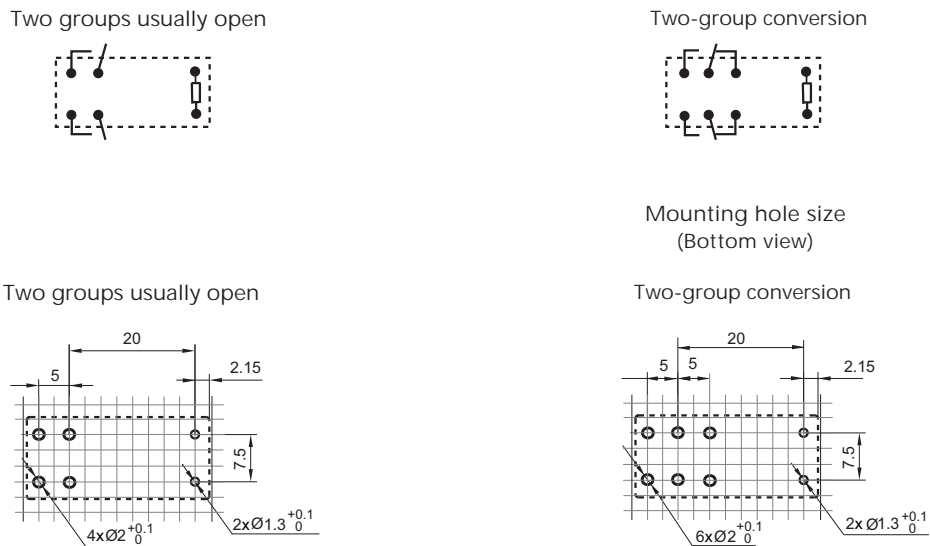
(4) The special requirements of customers shall be identified by the form of feature number after review by our company. For example, (456) indicates that the break contact gap can reach 2.0mm.



External drawing



Wiring diagram (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 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 $\pm 0.3\text{mm}$; When the overall size is $> 5\text{mm}$, the tolerance is $\pm 0.4\text{mm}$;

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

(4) The mesh width is 2.5mm.



Electrical durability wiring diagram

