




HLR-118F-15

Miniature high power relay



Features

- 10A contact switching capability
- Low height, only 12.5mm
- The dielectric voltage between the coil and the contact is 5kV
- Creepage distance greater than 8mm
- Meet VDE0700/0631 enhanced insulation requirements
- Products are available according to IEC60335-1 standard
- A variety of contact forms are available
- A variety of outlets are available
- UL Insulation class: F
- Through hole reflow specifications are available

RoHS compliant

Contact parameters

Contact form	1H, 1D, 1Z (Special Regulation 1H5,1D6)
Contact material	See order mark for details
Contact resistance ⁽¹⁾	≤100mΩ (1A 6VDC)
Rated load(resistance)	10A 250VAC / 30VDC
Maximum switching voltage	440VAC / 125VDC
Maximum switching current	10A
Maximum switching power	2500VA / 300W
Mechanical durability	1 x 10 ⁷ times
Electrical durability	Type 1H: 1 x 10 ⁵ times(AgNi, 8A 250VAC, Resistive load 85°C 5s on, 5s off)

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

Performance parameters

Insulation resistance	1000MΩ (500VDC)	
Dielectric withstand voltage	Between coil and contact	5000VAC 1min
	Disconnect between contacts	1000VAC 1min
Surge voltage(Between coil and contact)	10kV (1.2/50μs)	
Operating time (at rated voltage)	≤10ms	
Release time (at rated voltage)	≤5ms	
Coil temperature rise (at rated voltage)	≤55K	
strike ⁽²⁾	stability	NC:49m/s ² NO:98m/s ²
	intensity	980m/s ²
Vibration ⁽²⁾	NC (wireless coil voltage)	10Hz ~ 55Hz 0.8mm Double amplitude
	NO	10Hz ~ 55Hz 1.65mm Double amplitude
Temperature range	-40°C ~ 85°C	
Humidity	5% ~ 85% RH	
Outlet form	Printed plate	
Weight	About 8g	
Encapsulation mode	Plastic seal type, flux proof type	

Note: (1) The above values are initial values;
(2) Refers to non-length direction indicators.

Coil parameters

Rated coil power	About 220mW ~ 290mW
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Coil specification sheet 23°C

Rated voltage VDC	Operating voltage VDC ⁽¹⁾	Release voltage VDC ⁽¹⁾	Maximum voltage VDC ⁽²⁾	Coil resistance Ω
5	≤3.50	≥0.5	7.5	113 x (1±10%)
6	≤4.20	≥0.6	9.0	164 x (1±10%)
9	≤6.30	≥0.9	13.5	360 x (1±10%)
12	≤8.40	≥1.2	18.0	620 x (1±10%)
18	≤12.6	≥1.8	27.0	1295 x (1±10%)
24	≤16.8	≥2.4	36.0	2350 x (1±15%)
48 ⁽²⁾	≤33.6	≥4.8	72.0	8000 x (1±15%)
60 ⁽²⁾	≤42.0	≥6.0	90.0	12500 x (1±15%)

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) For products with rated voltage ≥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: parallel diodes in the coil, etc.).



Safety certification

UL/CUL (AgNi, AgSnO ₂)	Type 1,3,5,6	10A 250VAC 10A 30VDC B300 R300 1/2HP 240VAC (normally open contact) AgSnO ₂ : 1/3HP 120VAC (normally open contact)
VDE (AgNi, AgNi+gild)	1H (-;S) (1;3;5) (-;G) 1D (-;S) (1;3;6) (-;G) 1Z (-;S) (1;3) (-;G)	10A 250VAC 85°C 8A 250VAC 85°C 10A 250VAC 85°C
VDE (AgSnO ₂ , AgSnO ₂ +gild)	1H (-;S) (1;3;5), T.(-;G) 1D (-;S) (1;3;6), T.(-;G) 1Z (-;S) (1;3), T.(-;G) 1H (-;S) (1;3;5), T.(-;G) 1Z (-;S) (1;3), T.(-;G)	10A 250VAC 85°C 8A 250VAC 85°C 10A 250VAC 85°C AC-15 (Connected:30A 250VAC COSØ=0.7 85°C Disconnect: 3A 250VAC COS Ø=0.4 85°C) NO: AC-15 (Connected: 30A 250VAC COSØ=0.7 85°C Disconnect: 3A 250VAC COSØ=0.4 85°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 electrical durability life times are not the same, if you need to know the details, please contact our company.

Order mark example

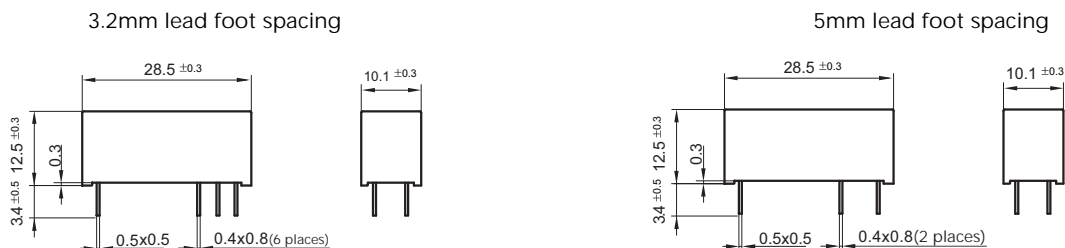
HLR-118F-15/ 012 -1H S 5 G (XXX)	
Relay type	
Coil voltage	5, 6, 9, 12, 18, 24, 48, 60VDC
Contact form	1H: One group is normally open 1D: A group of normally closed 1Z: A set of transformations
Encapsulation mode ⁽¹⁾⁽²⁾	S: Plastic seal type None: anti-flux type
Structural form (See the wiring diagram for details)	1: 3.2mm A set of transformation structures 3: 3.2mm A set of transformation structures, Double outlet form 5: 5mm, A group of normally open structures 6: 5mm, A group of normally closed structures
Contact material ⁽³⁾	T: AgSnO ₂ G: AgNi + gild TG: AgSnO ₂ + gild None: AgNi
Property number ⁽⁴⁾	XXX: Customer's special request 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 pollution soft matter), it is recommended to choose 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) gold-plated contact products, the minimum applicable load is 10mA 5VDC;
(4) The special requirements of customers shall be identified by the form of feature number after review by our company.
For example: (335) indicates that the sound product meets the GWT test specified in IEC60335-1; (253) indicates that the through-hole reflow specification (applicable only to flux-proof products);
(5) The standard size of the product type tube packaging is 600mm, if you need special customization, please contact our company;
(6) For products that need to meet the explosion-proof requirements of "IEC 60079 series", please note [Ex] after the model specification when placing an order, and our company will print "Ex" logo on the product shell to distinguish it. Because not all specifications of products have explosion-proof certification, if necessary, please contact our company in order to determine the appropriate product.

Outline drawing, wiring diagram, mounting hole dimensions

Unit: mm

External drawing

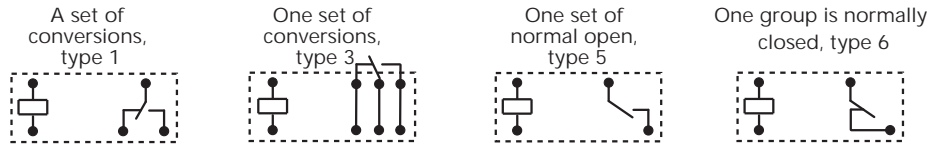




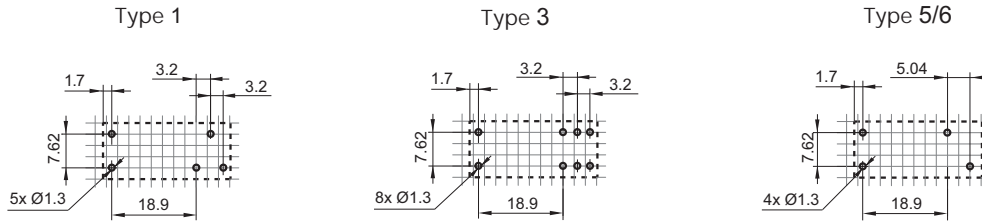
Outline drawing, wiring diagram, mounting hole dimensions

Unit: mm

Wiring diagram(Bottom view)



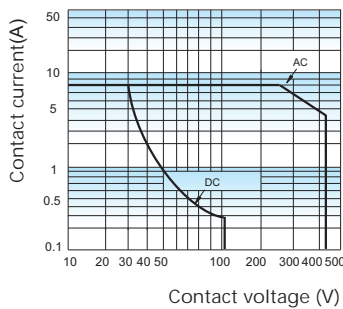
Mounting hole size(Bottom view)



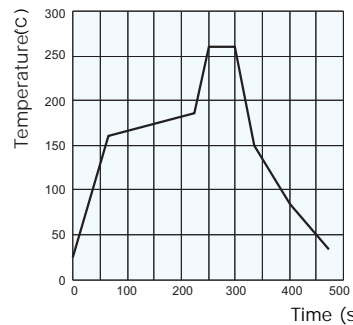
Note: (1) The pin marking size of the product outline drawing is the size before tin dipping (it will be larger after tin dipping), and the installation hole size is the recommended design size of the PCB hole. The specific design size of the PCB hole can be mapped and adjusted according to the actual product;
 (2) The overall dimension of the product part indicates the dimensional tolerance, when the overall dimension is $\leq 1\text{mm}$, 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 2.54mm.

Performance curve

Maximum switching power

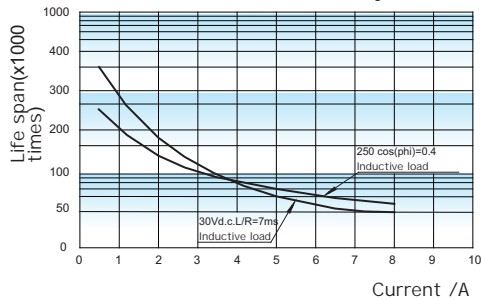


Reflow temperature curve



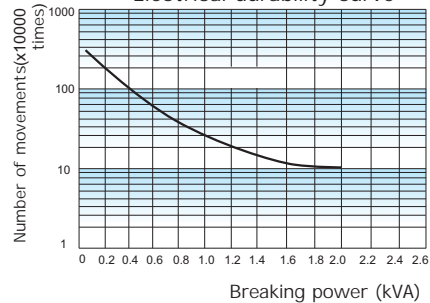
Note: This curve is only applicable to reflow type products.

Inductive electrical durability curve



Note:
 (1) Test conditions: NO end, room temperature, 1s on 9s off

Electrical durability curve



Note:
 (1) The curve refers to type 1Z1
 (2) Test conditions: NO end, resistive load, 250VAC, flux proof type, room temperature, 1s on 9s off



Relay socket



Features


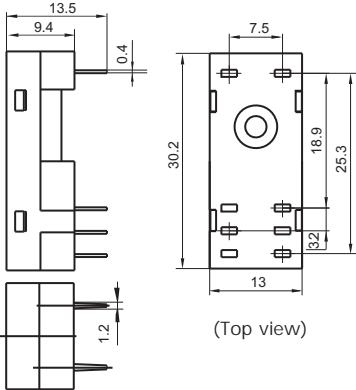
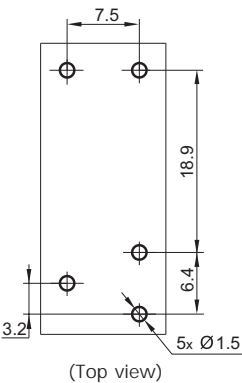
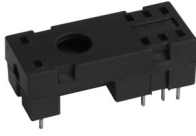
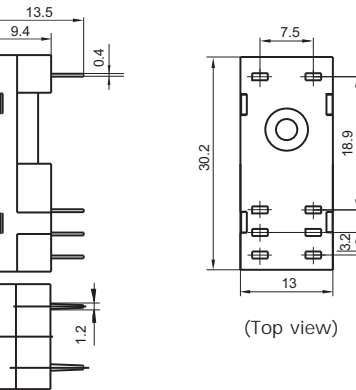
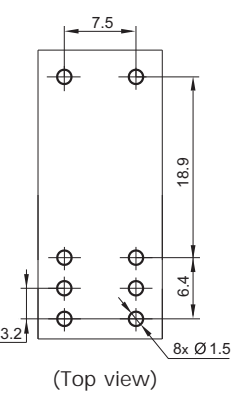
- Medium voltage up to 5000VAC, insulation resistance 1000M
- PCB or screw mounting form

Performance parameter

Socket type	Rated voltage	Rated current	Ambient temperature	Medium withstand voltage min.	Weight
118F-1Z-A1-1	250VAC	10A	-40 °C ~ 70°C	5000VAC	About 3g
118F-2Z-A1	250VAC	10A	-40 °C ~ 70°C	5000VAC	About 3g

Outline drawing, wiring diagram, mounting hole dimensions

Unit: mm

Socket (if you need the parts in the picture, please order separately)	Overall dimension	Mounting hole size	Optional accessories
<p>118F-1Z-A1-1</p>  <p>Printed plate outlet, Printed plate or screw mounting Applicable to Type 1 relay specifications</p>	 <p>(Top view)</p>	 <p>(Top view)</p>	<p>Metal circlip 118F-H1</p>
<p>118F-2Z-A1</p>  <p>Printed plate outlet, Printed plate or screw mounting Applicable to Type 1 relay specifications</p>	 <p>(Top view)</p>	 <p>(Top view)</p>	<p>Metal circlip 118F-H1</p>

Note: The figure shows the socket and accessories. If you need accessories, please order by model or consult our sales staff.

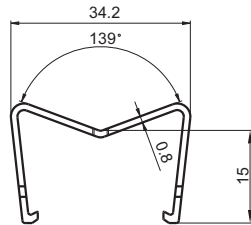


Size of relevant parts (optional)

Unit: mm

circlip

118F-H1 (Metal circlip)



Points for attention when selecting the socket:

1. Please select the appropriate relay socket according to the actual installation environment, the number of relay contacts and the position of the relay outlet. If you have any questions during the selection process, please contact us for more technical support;
2. Related accessories must be selected separately, please be sure to indicate the selected relay socket and related accessories model when ordering;
3. The above only lists the typical sockets and related accessories for HLR-118F-15 relay products, if you have special requirements, please contact us;
4. The main outline size, when the outline size > 50mm, tolerance is $\pm 1\text{mm}$; When $20\text{mm} < \text{overall size} \leq 50\text{mm}$, the tolerance is $\pm 0.5\text{mm}$; The tolerance is $\pm 0.4\text{mm}$ when the overall size is less than or equal to 20mm, and $\pm 0.3\text{mm}$ when the overall size is less than or equal to 5mm.