




# HLR10F-1

# Miniature high power relay



### Features

- 10A contact switching capability
- It has the form of bridge conversion, two group conversion and three group conversion contacts
- Standard tube pin, QC outlet pin type
- With test, switch button
- Optional magnet quench type
- A variety of outlets are available

**RoHS compliant**

### Contact parameters

Contact form	QZ,2Z, 3Z
Contact resistance	≤100mΩ (1A 24VDC)
Contact material	AgSnO <sub>2</sub> , AgCdO
Contact load (resistive)	HLR10F(without magnetic extinguishing type): QZ/2Z: 10A 250VAC / 30VDC 3Z: (NO) 10A 250VAC / 30VDC (NC) 5A 250VAC / 30VDC  HLR10F-QV(with magnetic quench type): QZ/2Z: 10A 250VAC / 30VDC QZ:(NO) 5A 220VDC QZ: (NC) 2A 220VDC 2Z: (NO) 5A 150VDC 2Z:(NC) 2A 150VDC
Maximum switching voltage	250VAC / 220VDC
Maximum switching current	10A
Maximum switching power	2500VA / 300W
Mechanical durability	HLR10F(without magnetic extinguishing type): HLR10F-QV(with magnetic quench type): 1 x 10 <sup>7</sup> time 5 x 10 <sup>8</sup> time
Electrical durability	HLR10F(without magnetic extinguishing type): QZ/2Z type: 1 x 10 <sup>5</sup> time(10A 250VAC/30VDC; Resistive load, room temperature, 1s near 9s off) 3Z type: 1 x 10 <sup>5</sup> time(NO:10A 250VAC/30VDC; NC: 5A 250VAC/30VDC; Resistive load, room temperature, 1s near 9s off) HLR10F-QV(with magnetic quench type): QZ/2Z type: 1 x 10 <sup>5</sup> time(10A 250VAC/30VDC; Resistive load, room temperature, 1s near 9s off) QZ type: 1 x 10 <sup>4</sup> time(NO:5A 220VDC; NC: 2A 220VDC; Resistive load, room temperature, 1s near 9s off) 2Z type: 1x10 <sup>4</sup> time (NO:5A 150VDC; NC:2A 150VDC; Resistive load, room temperature, 1s near 9s off), The moving reed is connected to the positive electrode of the load.)

Note:The preceding values are initial values.

### Coil parameter

Rated coil power	Dc type: about 1.4W; Ac type: Approx. 3.0VA
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### Performance parameter

Insulation resistance	1000MΩ (500VDC)	
Dielectric withst and voltage	Between coil and contact	2500VAC 1min
	Disconnect between contacts	1500VAC 1min
	Between contacts	2000VAC 1min
Operating time (rated voltage)	≤30ms (DC type)	
Release time (at rated voltage)	≤30ms (DC type)	
Release time (at rated voltage)	≤100K	
strike	stability	98m/s <sup>2</sup>
	strength	980m/s <sup>2</sup>
Vibration	10Hz ~ 55Hz 1.5mm double amplitude	
humidness	5% ~ 85% RH	
Ambient temperature	-40°C ~ 55°C	
The outlet is of the form	Standard electronic tube pin type lead end, QC lead foot type	
weight	About 90g	
Package form	Dust shield type	

### Coil specification sheet 23°C

Rated voltage VDC	Operating voltage VDC	Release voltage VDC	Maximum <sup>(2)</sup> voltage VDC	Coil resistance Ω
6	≤4.80	≥0.60	7.20	23.5 x (1±10%)
12	≤9.60	≥1.20	14.4	120x (1±10%)
24	≤19.2	≥2.40	28.8	470 x (1±10%)
48	≤38.4	≥4.80	57.6	1800 x (1±10%)
60	≤48.0	≥6.00	72.0	2790 x (1±10%)
100	≤80.0	≥10.0	120	7500 x (1±10%)
110	≤88.0	≥11.0	132	
120	≤96.0	≥12.0	144	
220	≤176	≥22.0	264	37000 x (1±10%)



**Coil specification sheet** 23°C

Rated voltage VAC	Operating voltage VAC	Release voltage VAC	Maximum voltage <sup>(2)</sup> VAC	Coil resistance Ω
6	≤4.80	≥1.80	7.20	3.9 x (1±10%)
12	≤9.60	≥3.60	14.4	16.9 x (1±10%)
24	≤19.2	≥7.20	28.8	72 x (1±10%)
48	≤38.4	≥14.4	57.6	290x (1±10%)
110	≤88.0	≥33.0	132	1700 x (1±10%)
120	≤96.0	≥36.0	144	
110/120	≤88.0	≥36.0	132	
220	≤176	≥66.0	264	6500 x (1±10%)
230	≤184	≥69.0	276	
220/240	≤176	≥72.0	264	
240	≤192	≥72.0	288	

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 period of time.

**In security certification**

<b>UL/CUL</b>	HLR10F(without magnetic extinguishing type)	10A 250VAC/30VDC 1/3HP 120VAC 1/3HP 240VAC 1/2HP 277VAC
	HLR10F-QV (with magnetic quench type)	10A 250VAC/30VDC QZ:(NO) 5A 220VDC QZ: (NC) 2A 220VDC 2Z: (NO) 5A 150VDC 2Z:(NC) 2A 150VDC

**Order mark example**

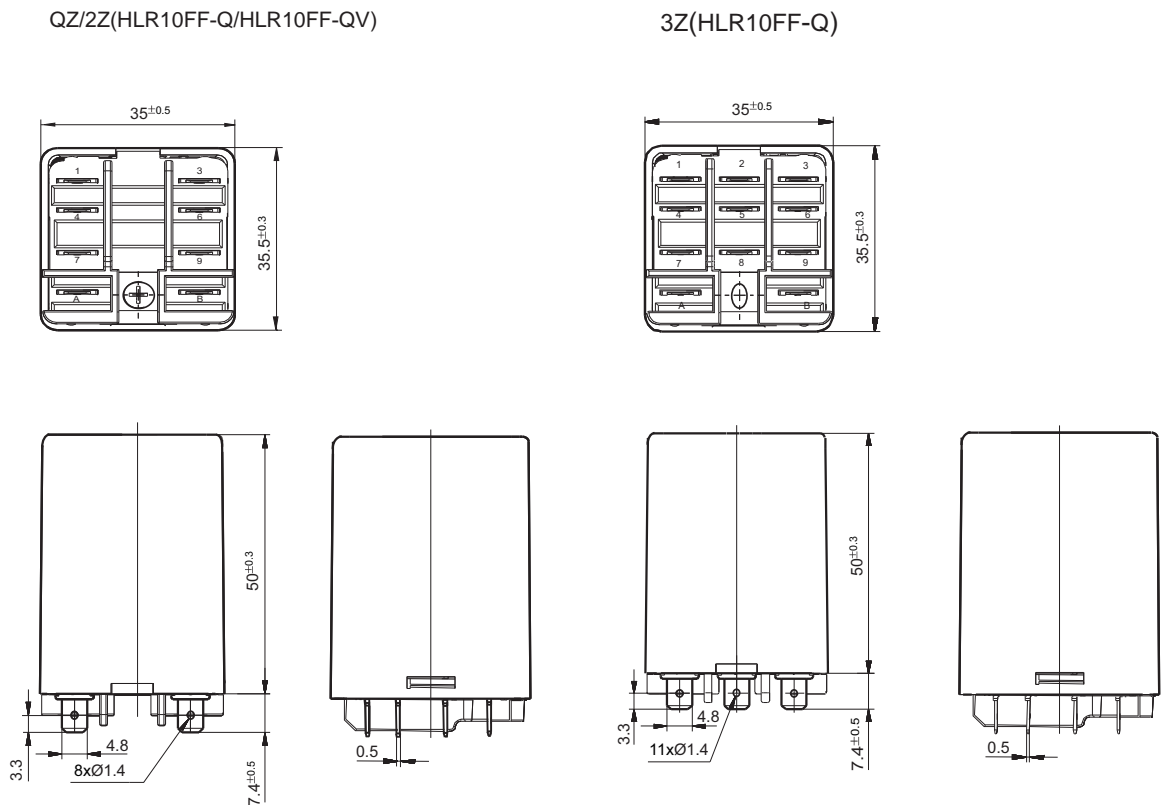
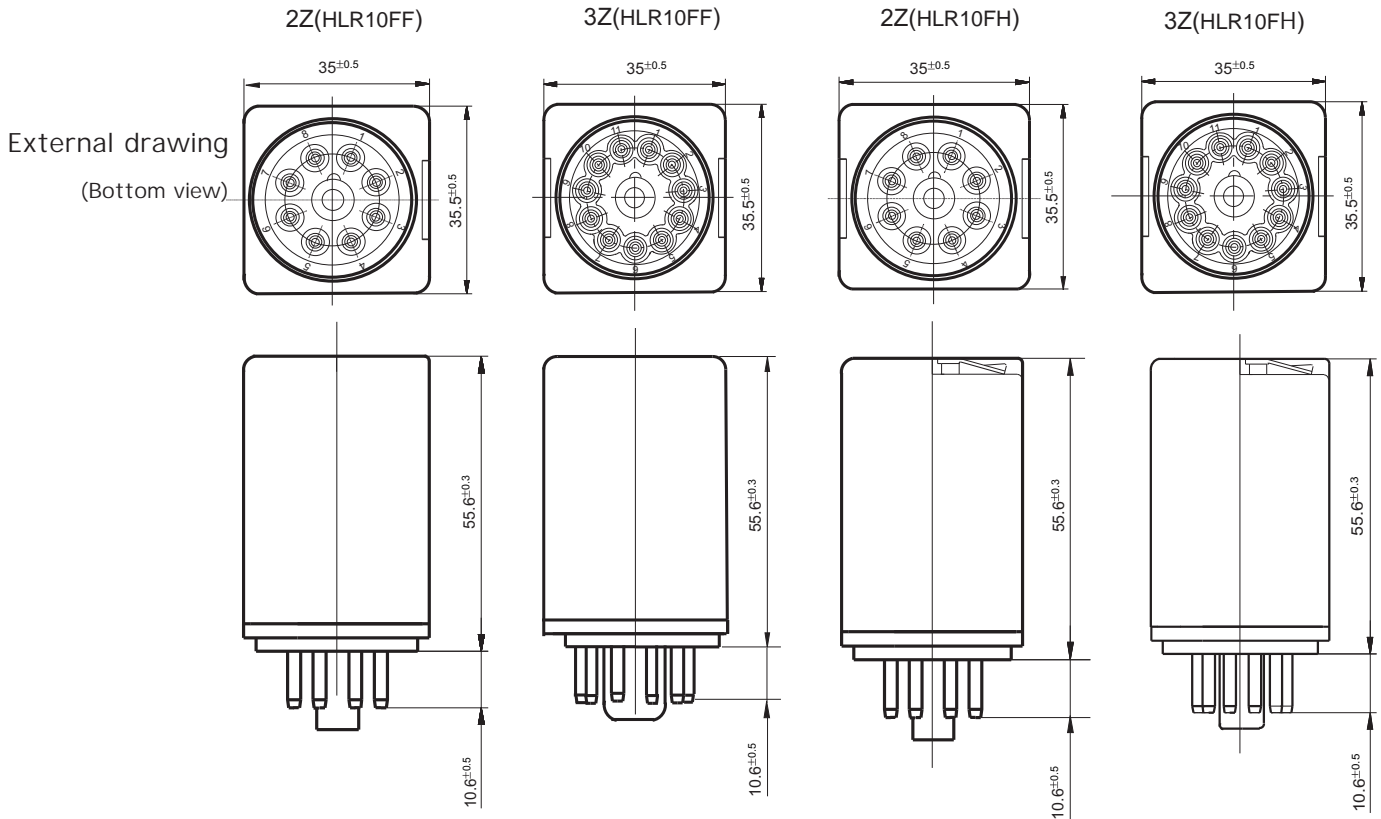
HLR10F F -Q V /230 A -2Z D T G (XXX)

<b>Relay type</b>	
<b>Button function</b>	<b>F:</b> Standard type without buttons <b>H:</b> push-button type
<b>Lead out the foot arrangement form</b>	<b>Q:</b> QC extraction foot type (no button type) <b>None:</b> Standard tube pin
<b>Arc-extinguishing mode</b>	<b>V:</b> magnet arc extinguishing (no 3Z type, only QC extraction foot type) <b>None:</b> The arc extinguishing function is unavailable.
<b>Coil voltage</b>	<b>Dc:</b> 6, 12, 24, 48, 60, 100, 110, 120, 220 <b>Ac:</b> 6, 12, 24, 48, 110, 120, 110/120,120,220,220/230,240
<b>Coil power supply</b>	<b>A:</b> Communication <b>D:</b> DC
<b>Contact form</b>	<b>Qz:</b> Bridge conversion type <b>2z:</b> Two sets of conversions <b>3Z:</b> Three group conversion (non-magnetic arcing type)
<b>Assembly element code</b>	<b>D:</b> With lamp type <b>DJ:</b> Light and triode type (DC type only) <b>None:</b> Standard type
<b>Contact material</b>	<b>T:</b> AgSnO <sub>2</sub> <b>None:</b> AgCdO
<b>Contact coating</b>	<b>G:</b> Gold plating    无: not gold-plated
<b>Feature number<sup>(1)</sup></b>	<b>XXX:</b> Customer's special request <b>None:</b> Standard type

Note: (1). Customer special requirements shall be identified in the form of feature number after review by our company.



Outline drawing, wiring diagram, mounting hole dimensions Unit: mm



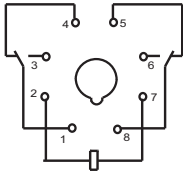


Outline drawing, wiring diagram, mounting hole dimensions

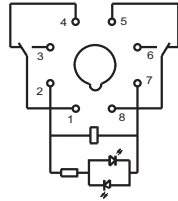
Unit: mm

Wiring diagram  
(Bottom view)

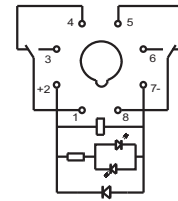
2Z(HLR10FF/HLR10FH)



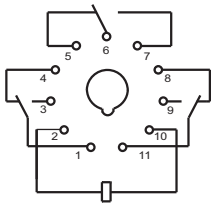
2Z(HLR10FF/HLR10FH Tape led)



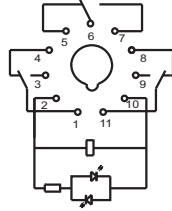
2Z  
(HLR10FF/HLR10FH With light emitting diode and continuous current diode)



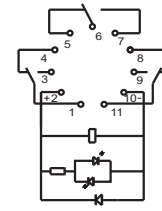
3Z(HLR10FF/HLR10FH)



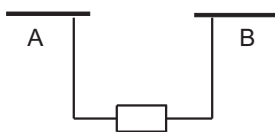
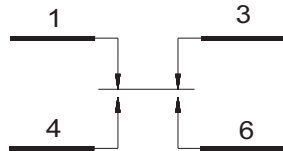
3Z(HLR10FF/HLR10FH Tape led)



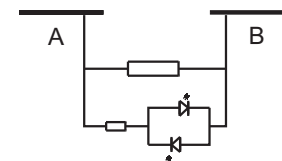
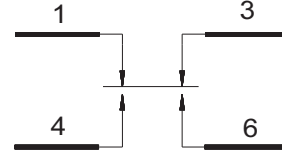
3Z  
(HLR10FF/HLR10FH With light emitting diode and continuous current diode)



QZ(HLR10FF-Q/HLR10FF-QV)



QZ(HLR10FF-Q/HLR10FF-QV Tape led)

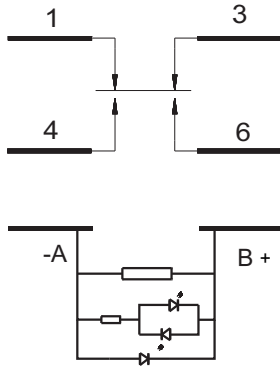




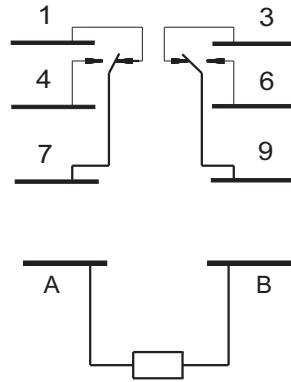
Outline drawing, wiring diagram, mounting hole dimensions

Unit: mm

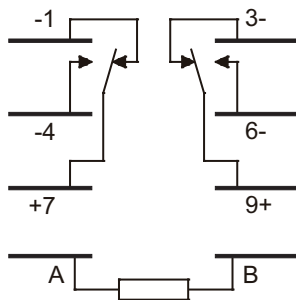
QZ(HLR10FF-Q/HLR10FF-QV With light emitting diode and continuous current diode)



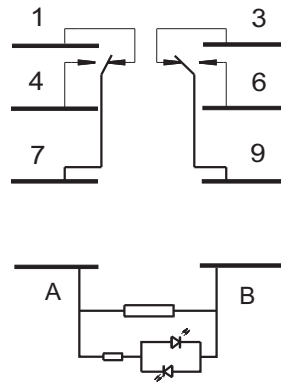
2Z(HLR10FF-Q)



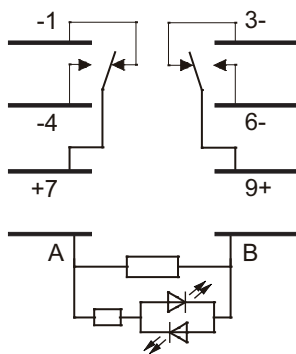
2Z(HLR10FF-QV)



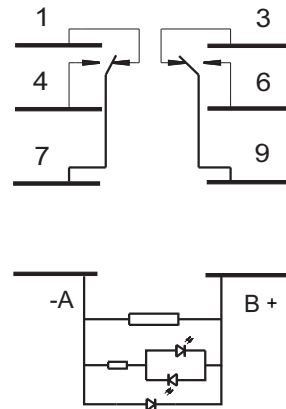
2Z(HLR10FF-Q Tape led)



2Z(HLR10FF-QV Tape led)



2Z(HLR10FF-Q With light emitting diode and continuous current diode)

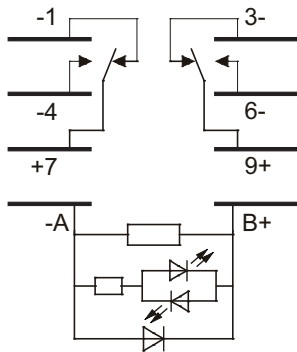




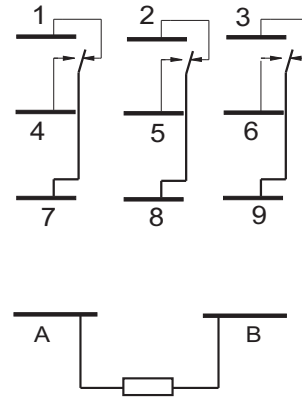
Outline drawing, wiring diagram, mounting hole dimensions

Unit: mm

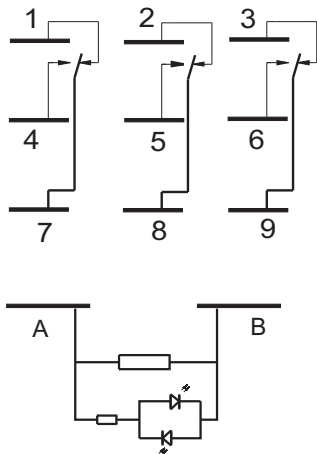
2Z(HLR10FF-QV With light emitting diode and continuous current diode)



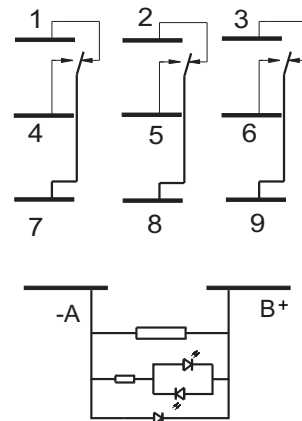
3Z(HLR10FF-Q)



3Z(HLR10FF-Q Tape led)

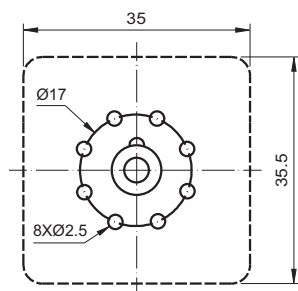


3Z(HLR10FF-Q With light emitting diode and continuous current diode)

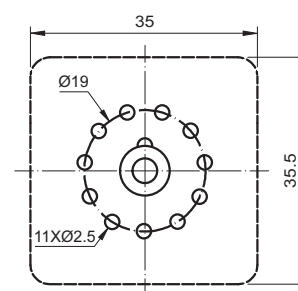


Installation hole position diagram

HLR10FF-2Z



HLR10FF-3Z

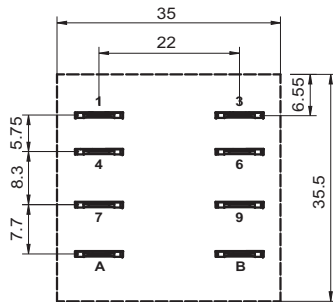




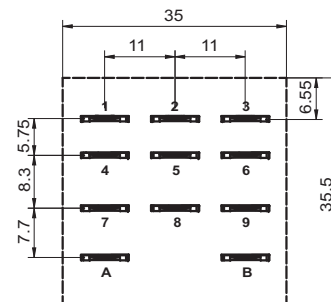
Outline drawing, wiring diagram, mounting hole dimensions

Unit: mm

HLR10FF-Q-2Z/HLR10FF-Q-QZ



HLR10FF-Q-3Z



Relay socket



Features

- Dielectric voltage up to 2000VAC, insulation resistance 1000MΩ
- Screw type, rail type installation form is available
- Available with finger protection
- A variety of plug-in modules are available for power-on indication, line protection and other functions
- Optional accessories: metal spring, insert module

Performance parameter

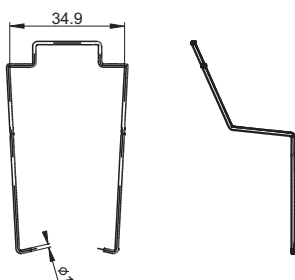
Socket type	Rated voltage	Rated current	Ambient temperature	Medium withstand voltage min.	Screw torque	Strip wire length	weight
10FF-2Z-C3	250VAC	10A	-40 °C ~ 70 °C	2000VAC	0.6N·m	7mm	About 49g
10FF-2Z-C4	250VAC	10A	-40 °C ~ 70 °C	2000VAC	0.6N·m	7mm	About 61g
10FF-3Z-C3	250VAC	10A	-40 °C ~ 70 °C	2000VAC	0.6N·m	7mm	About 56g
10FF-3Z-C4	250VAC	10A	-40 °C ~ 70 °C	2000VAC	0.6N·m	7mm	About 65g

Size of relevant parts (optional)

Unit: mm

circlip

10FF-H1 (Metal circlip)


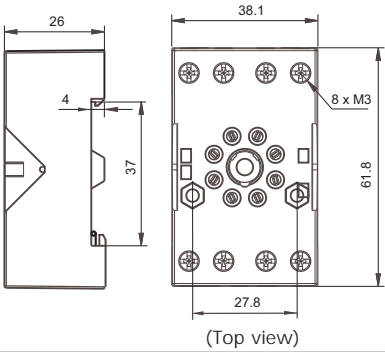
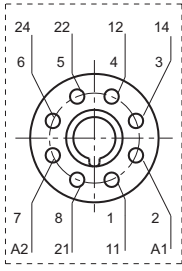
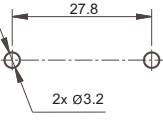

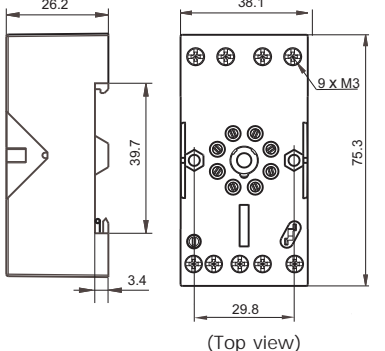
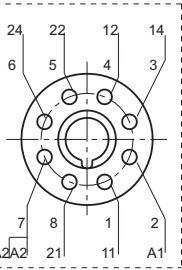
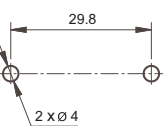

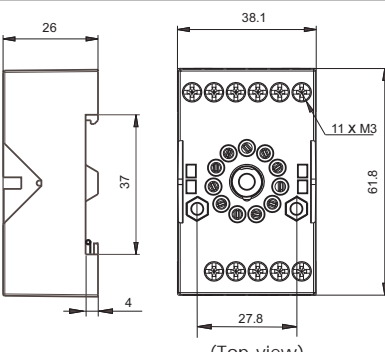
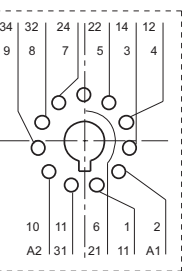
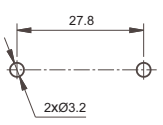

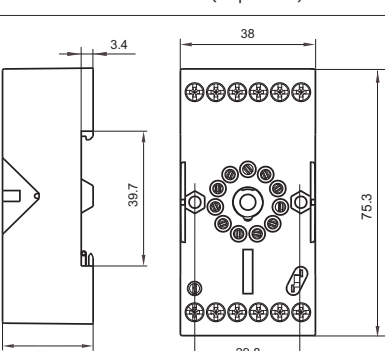
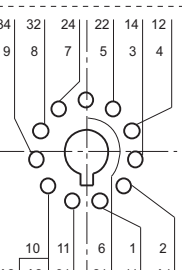
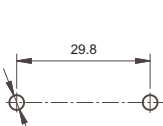


Points for attention when selecting the socket:

1. Please select the appropriate relay socket according to the actual installation environment, the number of relay contact groups and the position of the relay leading foot. 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 HLR10FH relay products, if you have special requirements, please contact us;
4. The main outline size, when the outline size is >50mm, the tolerance is ±1mm; When 20mm < overall size ≤50mm, the tolerance is ±0.5mm; When the 5mm < shape scale is between ≤20mm, the tolerance is ±0.4mm; when the shape size is ≤5mm, the tolerance is ±0.3mm;
5. For guide rail installation, it is recommended to use DIN standard 35x7.5x1mm, 35x15x1mm standard guide rail.



Outline drawing, wiring diagram, mounting hole dimensions Unit: mm

Socket (If you need parts in the drawing, please order separately)	Overall dimension	Wiring diagram	Mounting hole size	Optional accessories
<p><b>10FF-2Z-C3</b></p>  <p>Screw exit end, Rail or screw mounting, With finger protection structure Relay products for two groups</p>	 <p>(Top view)</p>	 <p>(Top view)</p>		<p>Metal circlip <b>10FF-H1</b></p>
<p><b>10FF-2Z-C4</b></p>  <p>Screw exit end, Rail or screw mounting, With finger protection structure Relay products for two groups</p>	 <p>(Top view)</p>	 <p>(Top view)</p>		<p>Metal circlip <b>10FF-H1</b></p> <p>Plug-in module HLRFAA~ HLRFHU*</p>
<p><b>10FF-3Z-C3</b></p>  <p>Screw exit end, Rail or screw mounting, With finger protection structure Relay products for three groups</p>	 <p>(Top view)</p>	 <p>(Top view)</p>		<p>Metal circlip <b>10FF-H1</b></p>
<p><b>10FF-3Z-C4</b></p>  <p>Screw exit end, Rail or screw mounting, With finger protection structure Relay products for three groups</p>	 <p>(Top view)</p>	 <p>(Top view)</p>		<p>Metal circlip <b>10FF-H1</b></p> <p>Plug-in module HLRFAA~ HLRFHU*</p>

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