HF18FF MINIATURE INTERMEDIATE POWER RELAY

c UL us
File No.:E133481

File No.:R50147087

CQC
File No.:CQC09002030026 (DC type)
CQC09002030027 (AC type)



Features

- 7A switching capability (2C, 3C type)
- 1.5kV dielectric strength (between coil and contacts)
- Gold plated contact available
- Conform to the CE low voltage directive
- Sockets available
- 2 to 4 pole configurations
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (28.0 x 21.5 x 35.0) mm

CONTACT DATA

Contact arrangement	2C, 3C	4C
Contact resistance	100mΩ max.(at 1A 6VDC)	
Contact material	See ordering info.	
Contact rating (Res. load)	7A 250VAC/30VDC	5A 250VAC/30VDC
Max. switching voltage	250VAC / 30VDC	
Max. switching current	7A	5A
Max. switching power	210W 1750VA	150W 1250VA
Mechanical endurance	2×10^7 OPS	
Electrical endurance	2Z/3Z type: 1×10^5 OPS (7A 250VAC, Resistive load, Room temp., 1s on 9s off) 2Z/3Z type: 1×10^5 OPS (7A 30VDC, Resistive load, Room temp., 1s on 9s off) 4Z type: 1×10^5 OPS (5A 250VAC, Resistive load, Room temp., 1s on 9s off) 4Z type: 1×10^5 OPS (5A 30VDC, Resistive load, Room temp., 1s on 9s off)	

CHARACTERISTICS

Insulation resistance		1000MΩ (at 500VDC)
Dielectric strength	Between coil & contacts	1500VAC 1min
	Between open contacts	1000VAC 1min
	Between contact sets	1500VAC 1min
Operate time (at nomi. volt.)		DC type: 25ms max.
Release time (at nomi. volt.)		DC type: 25ms max.
Temperature rise (no-load, at nomi.volt.)		60K max.
Shock resistance	Functional	98m/s²
	Destructive	980m/s²
Vibration resistance		10Hz to 55Hz 1mm DA
Humidity		5% to 85% RH
Ambient temperature		-40°C to 70°C
Termination		PCB, Plug-in
Unit weight		Approx. 37g
Construction		Dust protected

Notes: 1) The data shown above are initial values.
2) UL insulation system: Class A

COIL

Coil power	DC type: Approx. 0.9W to 1.1W; AC type: Approx. 1.2VA to 1.8VA

COIL DATA at 23°C

Nominal Voltage VDC	Pick-up Voltage VDC max.	Drop-out Voltage VDC min.	Max. Voltage VDC*	Coil Resistance Ω
5	4.0	0.50	5.5	27.5 x (1±10%)
6	4.8	0.60	6.6	40 x (1±10%)
12	9.6	1.20	13.2	160 x (1±10%)
24	19.2	2.40	26.4	650 x (1±10%)
48	38.4	4.80	52.8	2600 x (1±15%)
110	88.0	11.0	121	11000 x (1±15%)

Nominal Voltage VAC	Pick-up Voltage VAC max.	Drop-out Voltage VAC min.	Max. Voltage VAC*	Coil Resistance Ω
6	4.80	1.80	6.6	11.5 x (1±10%)
12	9.60	3.60	13.2	46 x (1±10%)
24	19.2	7.20	26.4	184 x (1±10%)
48	38.4	14.4	52.8	735 x (1±10%)
120	96.0	36.0	132	4550 x (1±15%)
220/240	176.0	72.0	264	14400 x (1±15%)

Notes: * Maximum voltage refers to the maximum voltage which relay coil could endure in a short period of time.

SAFETY APPROVAL RATINGS

UL/CUL	2 Form C	7A 250VAC/30VDC
	3 Form C 4 Form C	5A 250VAC/30VDC
TÜV	2 Form C 3 Form C	7A 250VAC/30VDC
	4 Form C	5A 250VAC/30VDC

Notes: 1) All values unspecified are at room temperature.
2) Only typical loads are listed above. Other load specifications can be available upon request.

ORDERING INFORMATION

	HF18FF /	A	012	-2Z	1	G	D	(XXX)
Type								
Coil voltage form	**A:** AC **Nil:** DC							
Coil voltage	**DC:** 5VDC to 110VDC **AC:** 6VAC to 240VAC							
Contact arrangement	**2Z:** 2 Form C **3Z:** 3 Form C **4Z:** 4 Form C							
Mounting Termination (See the following)	**1:** Socket **2:** PCB **5:** Flange-Mounting							
Contact material	**T:** $AgSnO_2$ **G:** AgCe + Au plated **Nil:** AgCe **TG:** $AgSnO_2$ + Au plated							
LED	**D:** With LED **Nil:** Without LED							
Special code[2)]	**XXX:** Customer special requirement **Nil:** Standard							

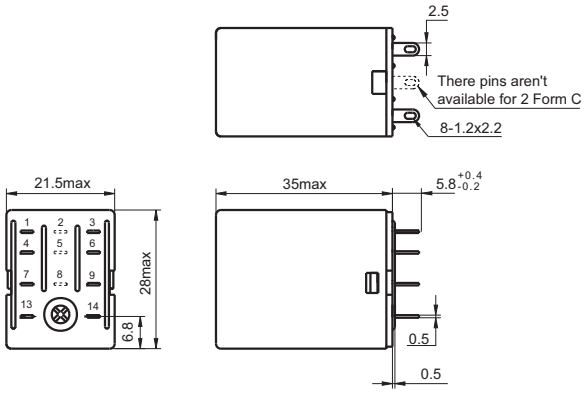
Notes: 1) We also can supply the special type with terminals numbered 1,4,5,8,9,12,13,14 for 2 poles.
2) The customer special requirement express as special code after evaluating by Hongfa.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

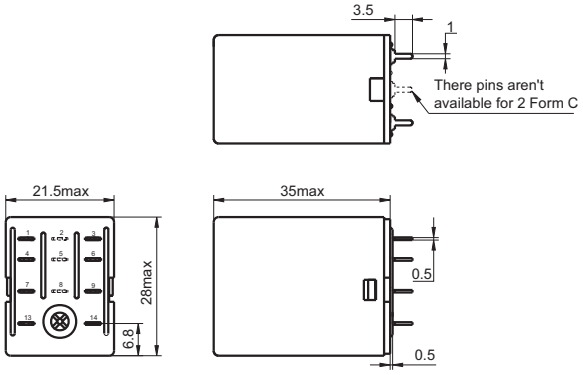
Unit: mm

Outline Dimensions

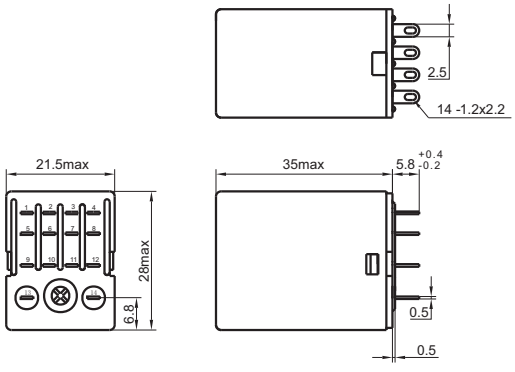
HF18FF/ □□□□ -2Z1 □□□ / 3Z1 □□□



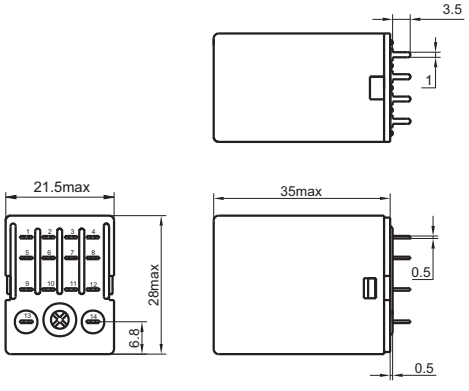
HF18FF/ □□□□ -2Z2 □□□ / 3Z2 □□□



HF18FF/ □□□□ -4Z1 □□□



HF18FF/ □□□□ -4Z2 □□□

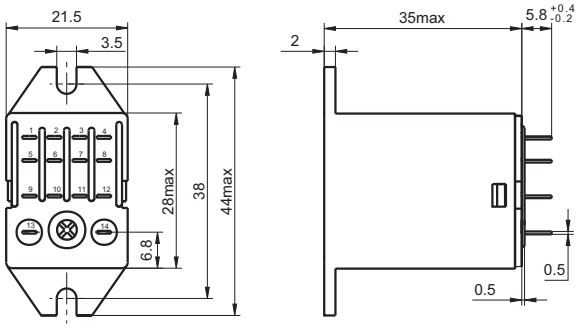


OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

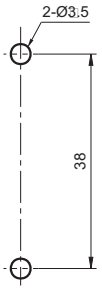
Unit: mm

HF18FF/ □□□□ -4Z5 □□□

Outline Dimensions

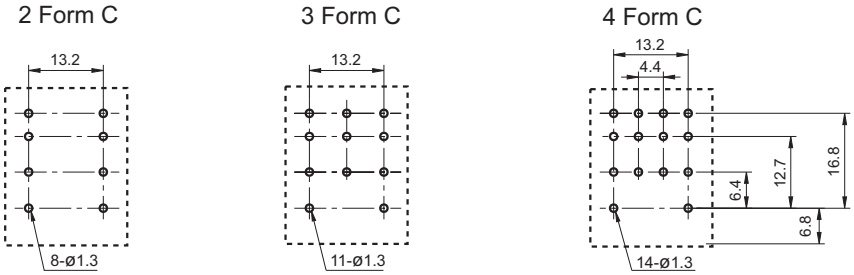


Mounting Holes



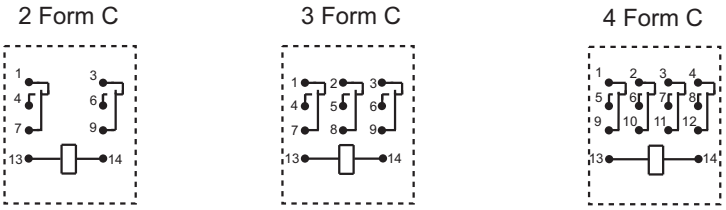
PCB Layout

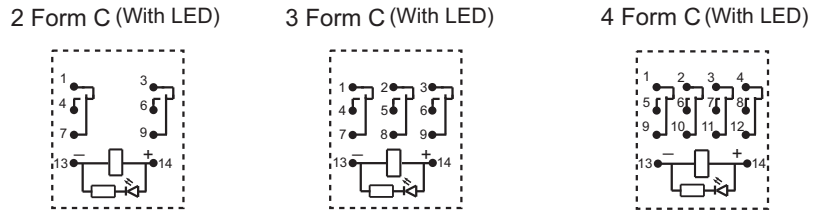
(Bottom view)



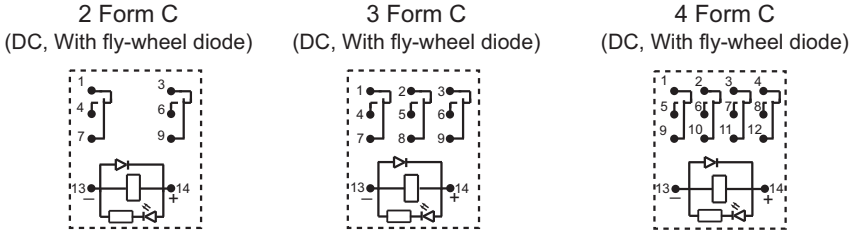
Wiring Diagram

(Bottom view)





Remark: For AC parts with diode, the positive and negative pole markings on wiring diagram are not applicable.

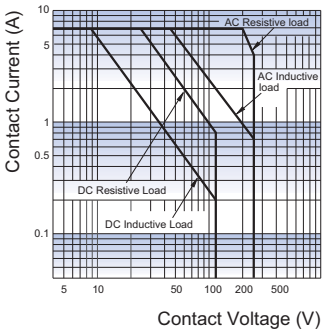


Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.

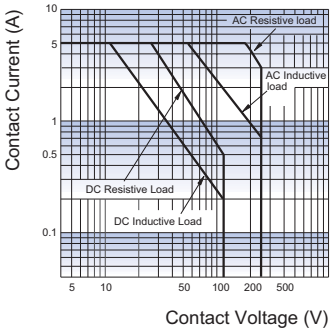
2) The tolerance without indicating for PCB layout is always ±0.1mm.

CHARACTERISTIC CURVES

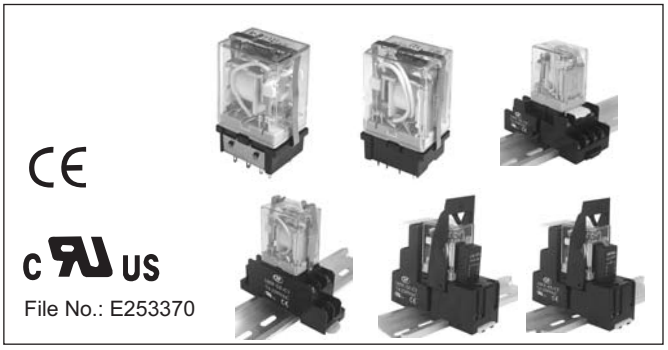
MAXIMUM SWITCHING POWER
(2, 3 Form C)



MAXIMUM SWITCHING POWER
(4 Form C)



Relay Sockets



File No.: E253370

Features

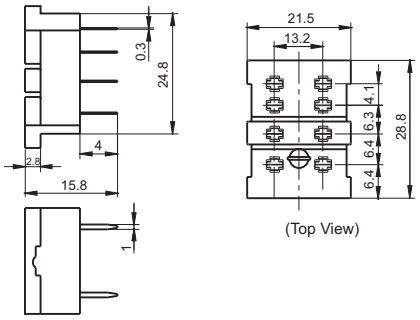
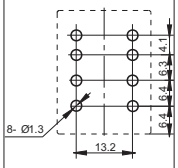
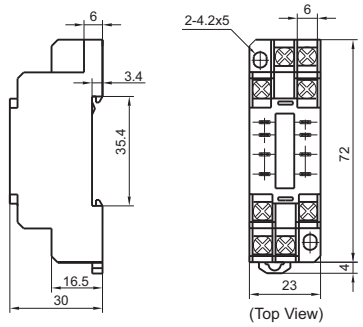
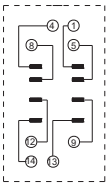
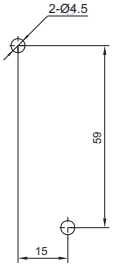
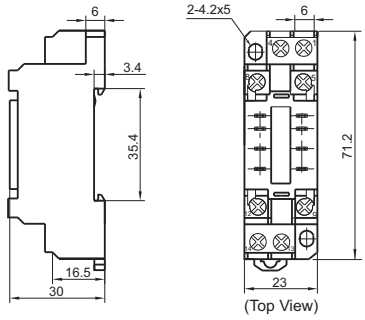
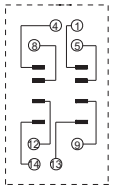
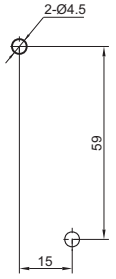
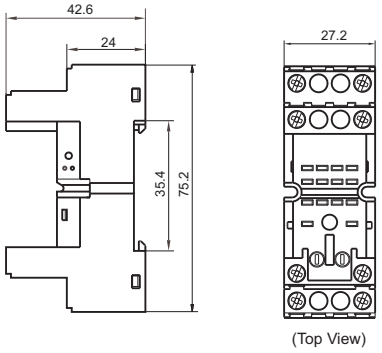
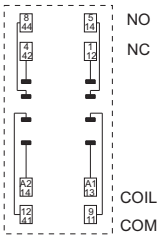
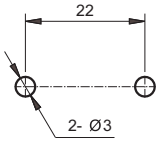
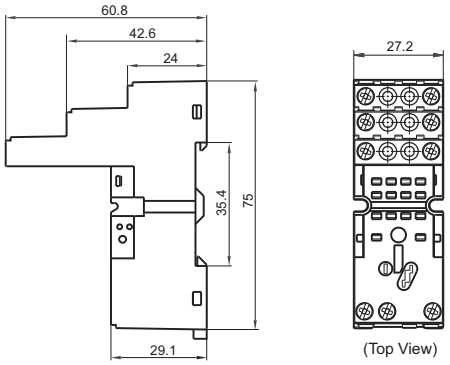
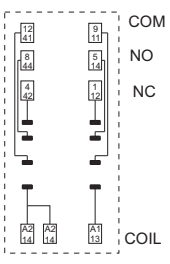
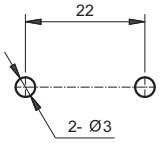
- The dielectric strength can reach 2000VAC and the insulation resistance is 1000MΩ
- Three mounting types are available: PCB mounting screw mounting and DIN rail mounting.
- With finger protection device
- Many kinds of plug-in modules are available with the function of energizing indication and wiring protection.
- Components available: retainer, marker and plug-in module
- Environmental friendly product (RoHS compliant)

CHARACTERISTICS

Type	Nominal Voltage	Nominal Current	Ambient Temperature	Dielectric Strength min.	Screw Torque	Wire Strip Length
18FF-2Z-A2	250VAC	7A	-40 ˚C to 70˚C	2000VAC	—	—
18FF-2Z-C1	250VAC	7A	-40 ˚C to 70˚C	2000VAC	0.8N · m	7mm
18FF-2Z-C2	250VAC	7A	-40 ˚C to 70˚C	2000VAC	0.8N · m	7mm
18FF-2Z-C4	250VAC	7A	-40 ˚C to 70˚C	2000VAC	0.6N · m	7mm
18FF-2Z-C5	250VAC	7A	-40 ˚C to 70˚C	2000VAC	0.6N · m	7mm
18FF-2Z-C6	250VAC	7A	-40 ˚C to 70˚C	2000VAC	0.6N · m	7mm
18FF-2Z-C7	250VAC	7A	-40 ˚C to 70˚C	2000VAC	0.6N · m	7mm
18FF-2Z-C8	250VAC	7A	-40 ˚C to 70˚C	2000VAC	0.6N · m	7mm
18FF-3Z-C1	250VAC	7A	-40 ˚C to 70˚C	2000VAC	0.8N · m	7mm
18FF-3Z-C4	250VAC	7A	-40 ˚C to 70˚C	2000VAC	0.6N · m	7mm
18FF-3Z-C5	250VAC	7A	-40 ˚C to 70˚C	2000VAC	0.6N · m	7mm
18FF-4Z-A2	250VAC	7A	-40 ˚C to 70˚C	2000VAC	—	—
18FF-4Z-C1	250VAC	7A	-40 ˚C to 70˚C	2000VAC	0.8N · m	7mm
18FF-4Z-C2	250VAC	7A	-40 ˚C to 70˚C	2000VAC	0.8N · m	7mm
18FF-4Z-C4	250VAC	7A	-40 ˚C to 70˚C	2000VAC	0.6N · m	7mm
18FF-4Z-C5	250VAC	7A	-40 ˚C to 70˚C	2000VAC	0.6N · m	7mm
18FF-4Z-C6	250VAC	7A	-40 ˚C to 70˚C	2000VAC	0.6N · m	7mm
18FF-4Z-C7	250VAC	7A	-40 ˚C to 70˚C	2000VAC	0.6N · m	7mm
18FF-4Z-C8	250VAC	7A	-40 ˚C to 70˚C	2000VAC	0.6N · m	7mm

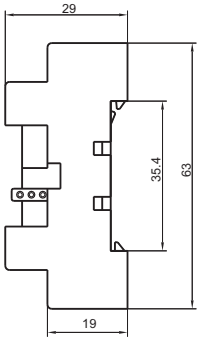
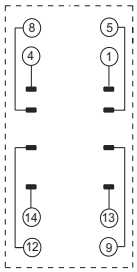
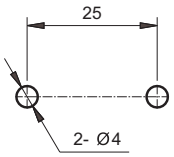
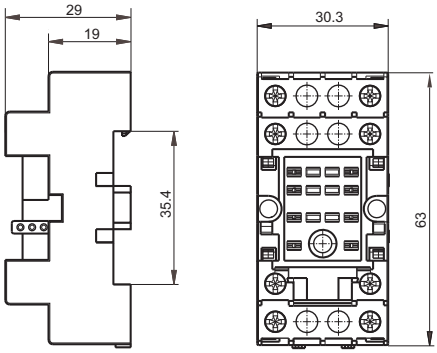
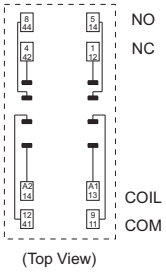
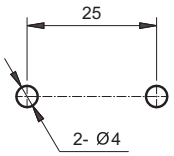
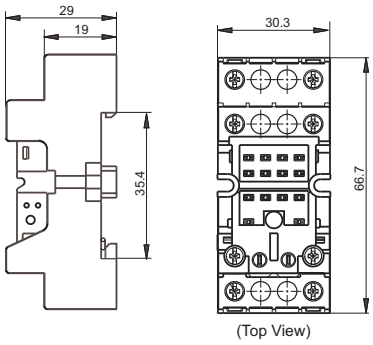
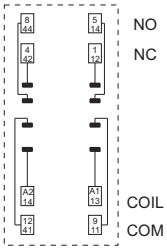
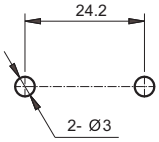
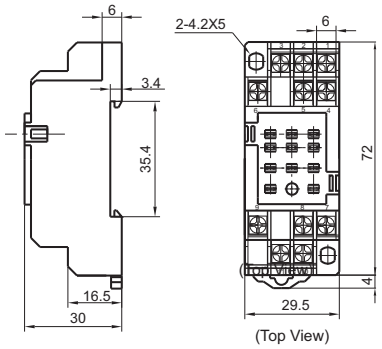
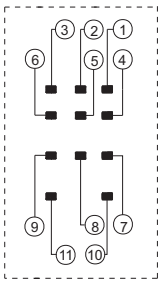
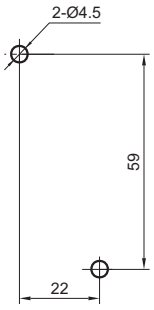
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

Socket	Outline Dimensions	Wiring Diagram	PCB Layout	Components Available
18FF-2Z-A2  PCB Terminal, PCB mounting Applicable for 2 poles				metallic retainer 18FF-H1
18FF-2Z-C1  Screw Terminal, DIN rail or Screw mounting, Applicable for 2 poles		 (Top View)		metallic retainer 18FF-H2 (be used in sets)
18FF-2Z-C2  Screw Terminal, DIN rail or Screw mounting, With finger protection device Applicable for 2 poles		 (Top View)		metallic retainer 18FF-H2 (be used in sets)
18FF-2Z-C4  Screw Terminal, DIN rail or Screw mounting, With finger protection device Applicable for 2 poles		 (Top View)		plastic retainer 18FF-H4 metallic retainer 18FF-H5 marker 18FF-M1 plug-in module HFAA to HFHU*
18FF-2Z-C5  Screw Terminal, DIN rail or Screw mounting, With finger protection device Applicable for 2 poles		 (Top View)		plastic retainer 18FF-H4 metallic retainer 18FF-H5 marker 18FF-M1 plug-in module HFAA to HFHU*

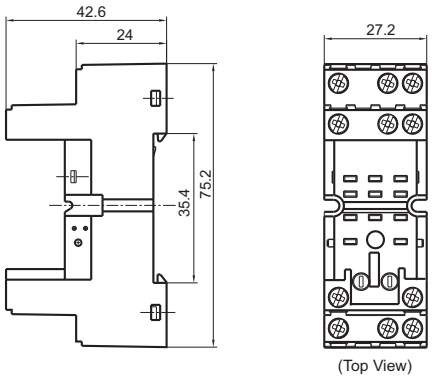
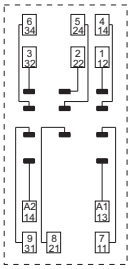
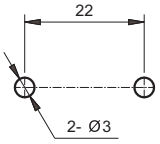
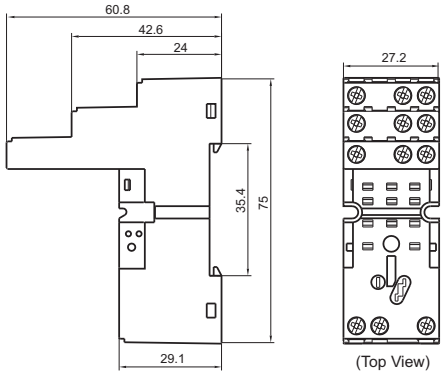
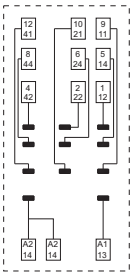
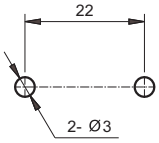
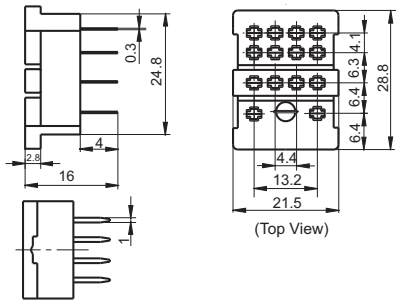
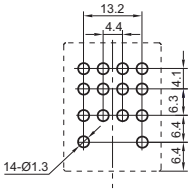
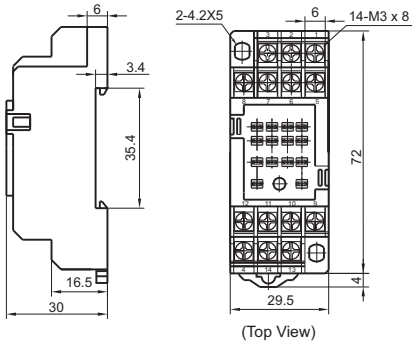
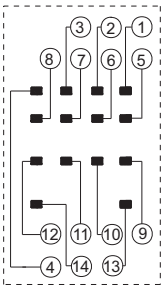
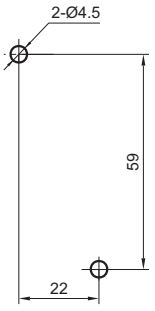
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

Socket	Outline Dimensions	Wiring Diagram	PCB Layout	Components Available
18FF-2Z-C6  Screw Terminal, DIN rail or Screw mounting, Applicable for 2 poles	 (Top View)	 (Top View)		metallic retainer 18FF-H6 (be used in sets) marker 18FF-M2
18FF-2Z-C7  Screw Terminal, DIN rail or Screw mounting, With finger protection device Applicable for 2 poles	 (Top View)	 (Top View)		metallic retainer 18FF-H5 marker 18FF-M2
18FF-2Z-C8  Screw Terminal, DIN rail or Screw mounting, With finger protection device Applicable for 2 poles	 (Top View)	 (Top View)		plastic retainer 18FF-H4 marker 18FF-M3
18FF-3Z-C1  Screw Terminal, DIN rail or Screw mounting, Without finger protection d evice Applicable for 3 poles	 (Top View)	 (Top View)		metallic retainer 18FF-H2 (be used in sets)

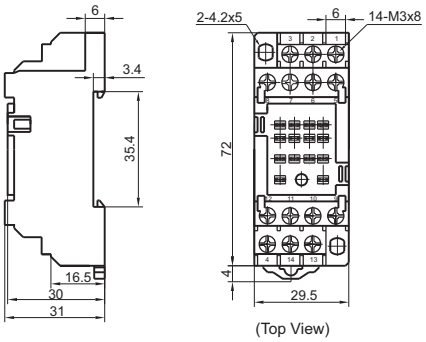
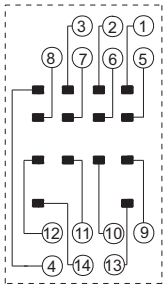
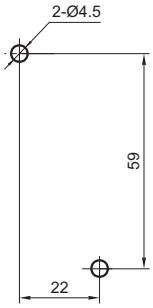
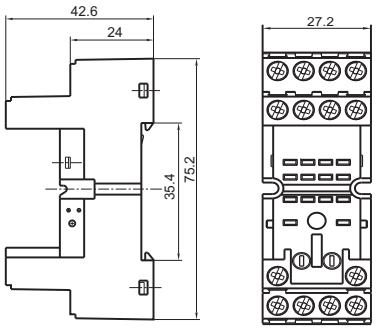
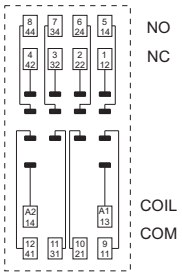
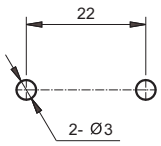
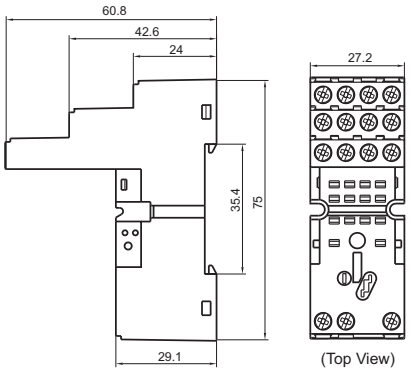
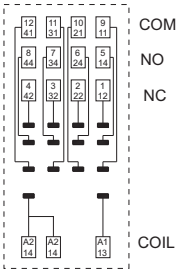
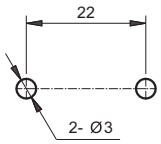
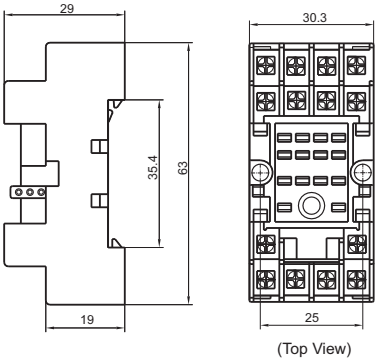
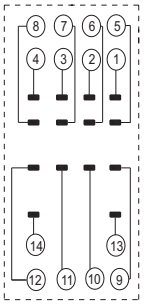
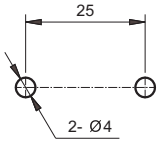
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

Socket	Outline Dimensions	Wiring Diagram	PCB Layout	Components Available
18FF-3Z-C4  Screw Terminal, DIN rail or Screw mounting, With finger protection device Applicable for 3 poles				plastic retainer 18FF-H4 metallic retainer 18FF-H5 marker 18FF-M1 plug-in module HFAA to HFHU*
18FF-3Z-C5  Screw Terminal, DIN rail or Screw mounting, Witht finger protection device Applicable for 3 poles				plastic retainer 18FF-H4 metallic retainer 18FF-H5 marker 18FF-M1 plug-in module HFAA to HFHU*
18FF-4Z-A2  PCB Terminal, PCB mounting Applicable for 4 poles				metallic retainer 18FF-H1
18FF-4Z-C1  Screw Terminal, DIN rail or Screw mounting, Withtout finger protection device Applicable for 4 poles				metallic retainer 18FF-H2 (be used in sets)

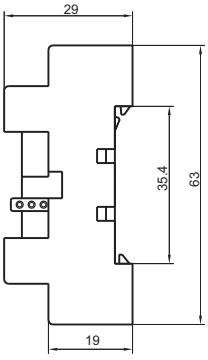
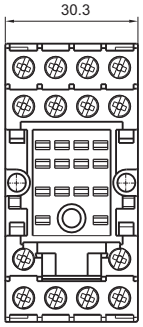
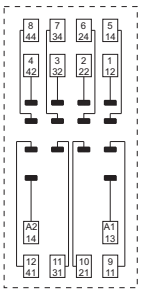
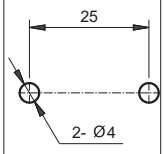
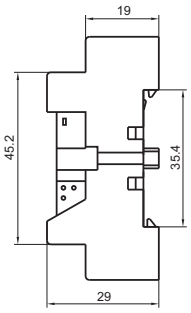
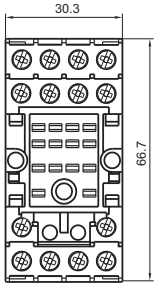
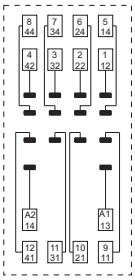
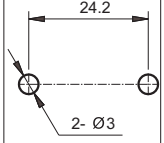
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

Socket	Outline Dimensions	Wiring Diagram	PCB Layout	Components Available
18FF-4Z-C2  Screw Terminal, DIN rail or Screw mounting, With finger protection device Applicable for 4 poles	 (Top View)	 (Top View)		metallic retainer 18FF-H2 (be used in sets)
18FF-4Z-C4  Screw Terminal, DIN rail or Screw mounting, With finger protection device Applicable for 4 poles	 (Top View)	 (Top View)		plastic retainer 18FF-H4 metallic retainer 18FF-H5 marker 18FF-M1 plug-in module HFAA to HFHU*
18FF-4Z-C5  Screw Terminal, DIN rail or Screw mounting, With finger protection device Applicable for 4 poles	 (Top View)	 (Top View)		plastic retainer 18FF-H4 metallic retainer 18FF-H5 marker 18FF-M1 plug-in module HFAA to HFHU*
18FF-4Z-C6  Screw Terminal, DIN rail or Screw mounting, Applicable for 4 poles	 (Top View)	 (Top View)		metallic retainer 18FF-H6 (be used in sets) marker 18FF-M2

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

Socket	Outline Dimensions	Wiring Diagram	PCB Layout	Components Available
18FF-4Z-C7  Screw Terminal, DIN rail or Screw mounting, With finger protection device Applicable for 4 poles	  (Top View)	 (Top View)		metallic retainer 18FF-H5 marker 18FF-M2
18FF-4Z-C8  Screw Terminal, DIN rail or Screw mounting, With finger protection device Applicable for 4 poles	  (Top View)	 (Top View)		plastic retainer 18FF-H4 marker 18FF-M3

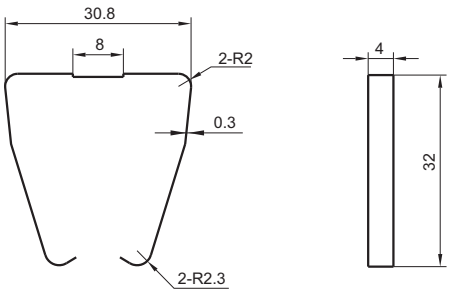
Notes: * Please refer to the product datasheet if plug-in module is required.

DIMENSION OF RELATED COMPOENT (AVAILABLE)

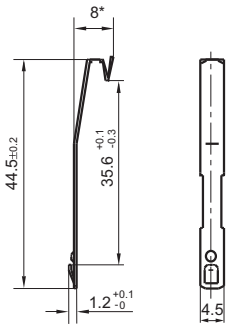
Unit: mm

Retainer

18FF-H1 (Metallic retainer)



18FF-H2 (Metallic retainer)



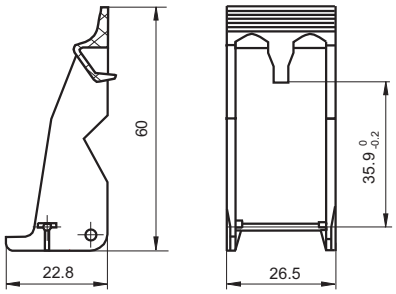
Note: 18FF-H2 retainer has to be used in sets, please pay special attention while placing the order.

DIMENSION OF RELATED COMPOENT (AVAILABLE)

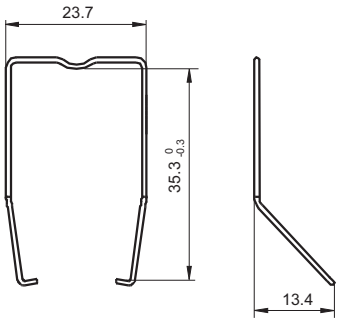
Unit: mm

Retainer

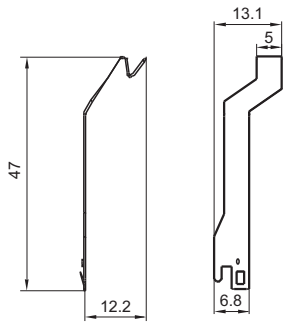
18FF-H4 (Plastic retainer)



18FF-H5 (Metallic retainer)



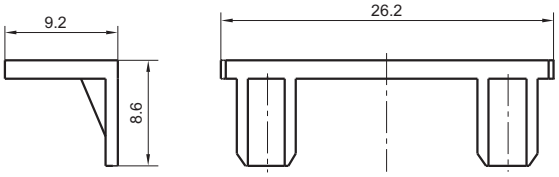
18FF-H6 (Metallic retainer)



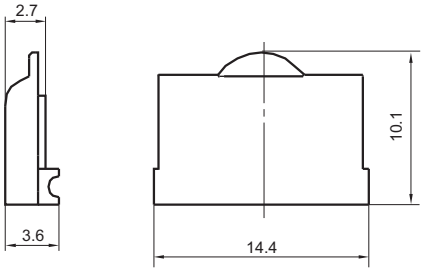
Note: 18FF-H6 retainer has to be used in sets, please pay special attention while placing the order.

Marker

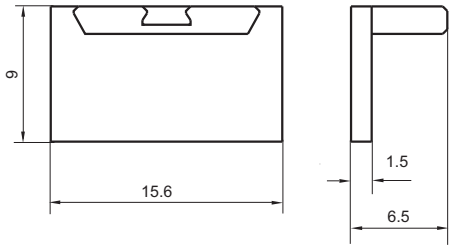
18FF-M1



18FF-M2



18FF-M3



Things to be noticed when selecting sockets:

1. Please choose suitable relay socket according to the actual mounting environment, relay contact poles and terminal layout. If there is any query on selection, please contact Hongfa for the technical service.
2. Socket which can be mounted with markers is furnished with a marker; as for other related components, they should be selected separately. Please do give clear indication of the types of relay sockets and related components you choose while placing order.
3. The above is only an example of typical socket and related component type which is suitable to HF18FF relay. If you have any special requirements, please contact us.

Disclaimer

TThe specification is for reference only. See to "Terminology and Guidelines" for more information. Specifications subject to change without notice. We could not evaluate all the performance and all the parameters for every possible application. Thus the user should be in a right position to choose the suitable product for their own application. If there is any query, please contact Hongfa for the technical service. However, it is the user's responsibility to determine which product should be used only.

© Xiamen Hongfa Electroacoustic Co., Ltd. All rights of Hongfa are reserved.