HF18FZ

MINIATURE INTERMEDIATE POWER RELAY



File No: E133481



File No: 40048406



File No: CQC17002183722





Features

- Multiple switching capability (2C, 4C type)
- Conform to the CE low voltage directive
- 2.0kV dielectric strength(between coil and contacts)
- High electrical life
- High mechanical life
- With test button
- Automatic production

RoHS compliant

CONTACT DATA

Contact arrangement	2C	4C			
Contact resistance ¹⁾	100mΩ max.(at 1A 6VDC				
Contact material	See ordering info				
Contact rating	7A 220VAC/24VDC	5A 220VAC/24VDC			
(Res. load)	5A 220VAC/24VDC	3A 220VAC/24VDC			
Max. switching voltage	277VAC / 30VD0				
Max. switching current	7A	5A			
Max. switching power	1939VA/ 210W	1385VA/ 150W			
Mechanical endurance	5 x 10 ⁷ ops(DC type)				
	2 x 10 ⁷ ops(AC type)				
	2Z:1 x 10 ⁵ OPS(7A 277VAC or 7A 30VDC				
Electrical endurance ²⁾	Resistive load,Room temp.,1s on 9s off)				
	42:1 X 10 OPS (5A 277 VAC or 5A 30 VDC,				
	Resistive load,Room temp.,1s on 9s off)				

COIL

	DC type: Approx. 0.8W to 1.1W;
Coil power	AC type: Approx. 0.9VA to 1.5VA

COIL DATA

at 23°C

_				
Nominal Voltage VDC	Pick-up Voltage VDC max. ¹⁾	Drop-out Voltage VDC min.	Max. Voltage VDC ²⁾	Coil Resistance Ω
6	4.8	0.60	6.6	41 x (1±15%)
12	9.6	1.20	13.2	165 x (1±15%)
24	19.2	2.40	26.4	662 x (1±15%)
48	38.4	4.80	52.8	2725 x (1±15%)
100/110	80.0	11.0	110/121	11440 x (1±15%)
220	170.0	22.0	242	53780 x (1±15%)

il
ance
1±15%)
1±15%)
1±15%)
1±15%)
1±15%)
1±15%)
1±15%)

Notes: 1) Under ambient temperature, applying more than 80% of rating voltage to coil, relay will take action accordingly. But in order to meet the stated product performance, please apply rated voltage to coli.

2) Maximum voltage refers to the maximum voltage which relay coil could endure in a short period of time.

CHARACTERISTICS

Insulation resistance			1000MΩ (at 500VDC	
	Between coil & contacts		2000VAC 1min	
Dielectric strength	Between	open contacts	1000VAC 1min	
	Datusan	contact coto	2000VAC 1min(2Z)	
	Between contact sets		1500VAC 1min(4Z)	
Operate time (at nomi. volt.)			20ms max.	
Release time (at nomi. volt.)			DC type: 15ms max.	
			AC type: 25ms max.	
Temperature rise			85K max.	
Shock resistance		Functional	200m/s ² (NO), 100m/s ² (NC)	
Shock res	istance	Destructive	1000m/s ²	
Vibration resistance			10Hz to 55Hz 1mm DA	
Humidity			5% to 85% RF	
Ambient temperature			-40°C to 70°C	
Termination			Plug-in	
Unit weight			Approx. 39.4g	
Construction			Dust protected	

Notes: 1) The data shown above are initial values.



HONGFA RELAY

ISO9001, IATF16949, ISO14001, OHSAS18001, IECQ QC 080000 CERTIFIED

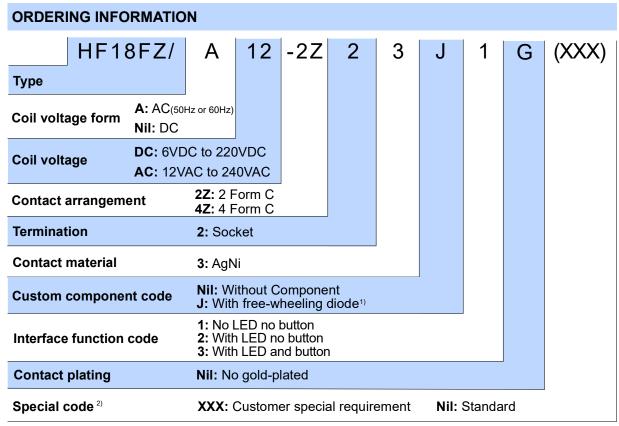
2022 Rev. 1.00

Notes: 1) The data shown above are initial values.

2) Please refer to the characteristic curves for detailed electrical endurance information. If you need other conditions. please contact us.

SAFETY APPROVAL RATINGS 2 Form C 7A 277VAC or 7A 30VDC **UL/CUL** 4 Form C 5A 277VAC or 5A 30VDC Resistive at 70°C 2 Form C 7A 277VAC or 7A 30VDC Resistive at 70°C CQC 4 Form C 5A 277VAC or 5A 30VDC Resistive at 70°C 7A 277VAC or 7A 30VDC Resistive at 70°C 2 Form C **VDE** 4 Form C 5A 277VAC or 5A 30VDC Resistive at 70°C

Notes: 1) Only typical loads are listed above. Other load specifications can be available upon request.



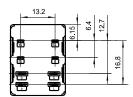
Notes: (1) Free-wheeling diode is available only for DC coil relay;

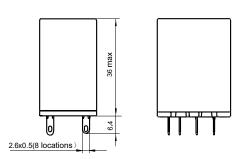
⁽²⁾ The customer special requirement express as special code after evaluating by Hongfa;

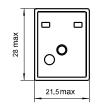
⁽³⁾ DC coil specifications: 6、12、24、48、100/110、220;

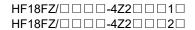
⁽⁴⁾ AC coil specifications: 12、24、48、100/110、110/120、200/220、220/240。

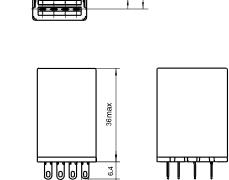
Outline Dimensions







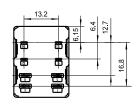


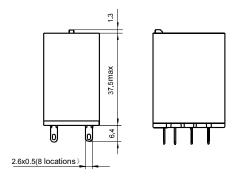


2.6x0.5(14locations)

6.4

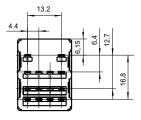
HF18FZ/ | | | | | -2Z2 | | | 3 | |

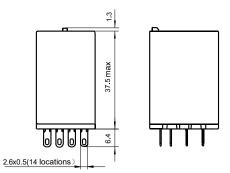








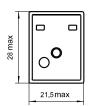


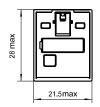


Outline Dimensions

HF18FZ/\| \| \| \| \| \| -4Z2 \| \| \| \| 1 \| \| HF18FZ/\| \| \| \| \| \| \| -4Z2 \| \| \| \| \| 2 \| \|

HF18FZ/ | | | | | -4Z2 | | | | 3 | |



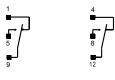


Remark: In case of no tolerance shown in outline dimension: outline dimension \leq 1mm, tolerance should be \pm 0.2mm; outline dimension >1mm and \leq 5mm, tolerance should be \pm 0.3mm; outline dimension >5mm, tolerance should be \pm 0.4mm.

WIRING DIAGRAM(BOTTOM VIEW)

HF18FZ/□□□-2Z232 HF18FZ/□□□-2Z233

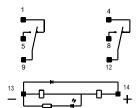
2 Form C(DC,With LED) (Without 220VDC)



13 - 14

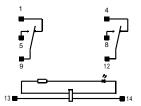
HF18FZ/□□□-2Z23J2 HF18FZ/□□□-2Z23J3

2 Form C (DC, With fly-wheel diode and LED) (Without 220VDC)



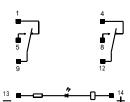
HF18FZ/A□□□-2Z232 HF18FZ/A□□□-2Z233

> 2 Form C (AC, With LED)



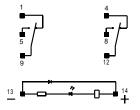
HF18FZ/220-2Z232 HF18FZ/220-2Z233

2 Form C(DC, With LED) (220VDC)



HF18FZ/220-2Z23J2 HF18FZ/220-2Z23J3

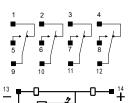
2 Form C (DC, With fly-wheel diode and LED) (220VDC)



WIRING DIAGRAM(BOTTOM VIEW)

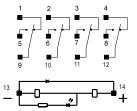
HF18FZ/□□□-4Z232 HF18FZ/□□□-4Z233

4 Form C(DC, With LED) (Without 220VDC)

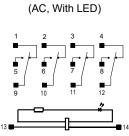


HF18FZ/□□□-4Z23J2 HF18FZ/□□□-4Z23J3

4 Form C
(DC, With fly-wheel diode and LED)
(Without 220VDC)



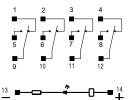
HF18FZ/A□□□-4Z232 HF18FZ/A□□□-4Z233



4 Form C

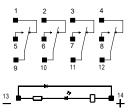
HF18FZ/220-4Z232 HF18FZ/220-4Z233

4 Form C(DC, With LED) (220VDC)



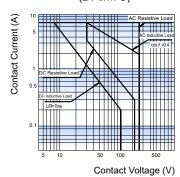
HF18FZ/220-4Z23J2 HF18FZ/220-4Z23J3

4 Form C (DC, With fly-wheel diode and LED) (220VDC)

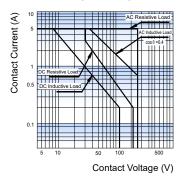


CHARACTERISTIC CURVES

MAXIMUM SWITCHING POWER (2 Form C)

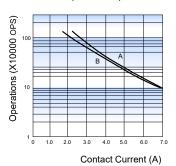


MAXIMUM SWITCHING POWER (4 Form C)



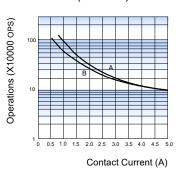
CHARACTERISTIC CURVES

ENDURANCE CURVE (2 Form C)



Notes: 1) Line A is Res.load 24Vd.c. Line B is Res.load 220Va.c. 2) Switching condition:NO or NC.

ENDURANCE CURVE (4 Form C)



Relay Sockets



Features

- The dielectric strength can reach 2000VAC and the insulation resistance is $1000M\Omega$
- 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

Туре	Nominal Voltage	Nominal Current	Ambient Temperature	Dielectric Strength min.	Screw Torque	Wire Strip Length	Unit weight
18FZ-2Z-C2	250VAC	7A	-40 °C ~ 70°C	2000VAC	0.6N · m	7mm	Approx.30g
18FZ-4Z-C2	250VAC	5A	-40 °C ~ 70°C	2000VAC	0.6N · m	7mm	Approx.44g
18FF-2Z-A2	250VAC	7A	-40 °C ~ 70°C	2000VAC	_	_	Approx.8g
18FF-2Z-C1	250VAC	7A	-40 °C ~ 70°C	2000VAC	0.8N · m	7mm	Approx.35g
18FF-2Z-C2	250VAC	7A	-40 °C ~ 70°C	2000VAC	0.8N · m	7mm	Approx.36g
18FF-2Z-C4	250VAC	7A	-40 °C ~ 70°C	2000VAC	0.6N · m	7mm	Approx.53g
18FF-2Z-C5	250VAC	7A	-40 °C ~ 70°C	2000VAC	0.6N · m	7mm	Approx.64g
18FF-2Z-C8	250VAC	7A	-40 °C ~ 70°C	2000VAC	0.6N · m	7mm	Approx.41g
18FF-2Z-C9	250VAC	7A	-40 °C ~ 70°C	2000VAC	_	7mm	Approx.70g
18FF-4Z-A2	250VAC	7A*	-40 °C ~ 70°C	2000VAC	_	_	Approx.8g
18FF-4Z-C1	250VAC	7A*	-40 °C ~ 70°C	2000VAC	0.8N · m	7mm	Approx.58g
18FF-4Z-C2	250VAC	7A*	-40 °C ~ 70°C	2000VAC	0.8N · m	7mm	Approx.59g
18FF-4Z-C4	250VAC	7A*	-40 °C ~ 70°C	2000VAC	0.6N · m	7mm	Approx.64g
18FF-4Z-C5	250VAC	7A*	-40 °C ~ 70°C	2000VAC	0.6N · m	7mm	Approx.76g
18FF-4Z-C8	250VAC	7A*	-40 °C ~ 70°C	2000VAC	0.6N · m	7mm	Approx.51g
18FF-4Z-C9	250VAC	7A*	-40 °C ~ 70°C	2000VAC	_	7mm	Approx.81g

Remark: For sockets marked *, their group of current totally should be not more than 20A.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT Unit: mm Components Available Socket **Outline Dimensions** Wiring Diagram **PCB** Layout 2x4.2x5 6 8xM3 18FZ-2Z-C2 2xØ4.5 00 metallic retainer 73.5 29 18FZ-H1 18FF-H2 (be used in sets) -09 (İ Screw Terminal. (Top View) DIN rail or Screw mounting, With finger protection device 22.4 (Top View) 2x4.2x5 30 18FZ-4Z-C2 2xØ4.5 ₩₩₩ 8765 metallic retainer 18FZ-H1 72.9 69.2 18FF-H2 (be used in sets) -⊕^l⊕ છ Screw Terminal, 0 DIN rail or Screw mounting, With finger protection device (Top View) (Top View) 18FF-2Z-A2 metallic retainer 18FF-H1 (Top View) PCB Terminal, PCB mounting Applicable for 2 poles 2x4.2x5 2xØ4.5 18FF-2Z-C1 metallic retainer 18FZ-H1 **@**-18FF-H2 -00 03 Screw Terminal. DIN rail or Screw mounting, (be used in sets) Without finger protection device _16.5 (Top View) 22 Applicable for 2 poles 30 (Top View) 2x4.2x5 18FF-2Z-C2 2xØ4.5 ````` -(A) r(T) metallic retainer 71 18FZ-H1 18FF-H2 0 9 (be used in sets) Screw Terminal, DIN rail or Screw mounting, (Top View) 16.5 With finger protection device

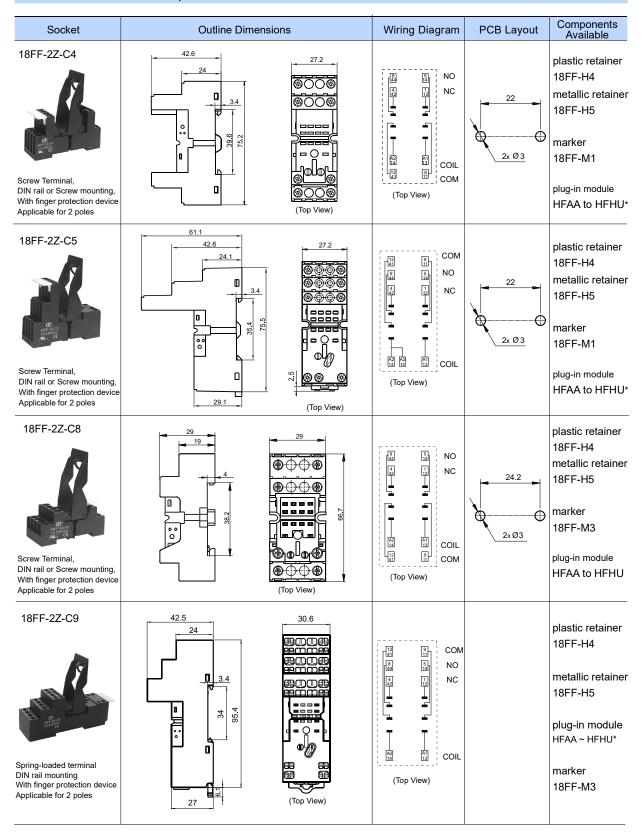
30.6

(Top View)

Applicable for 2 poles

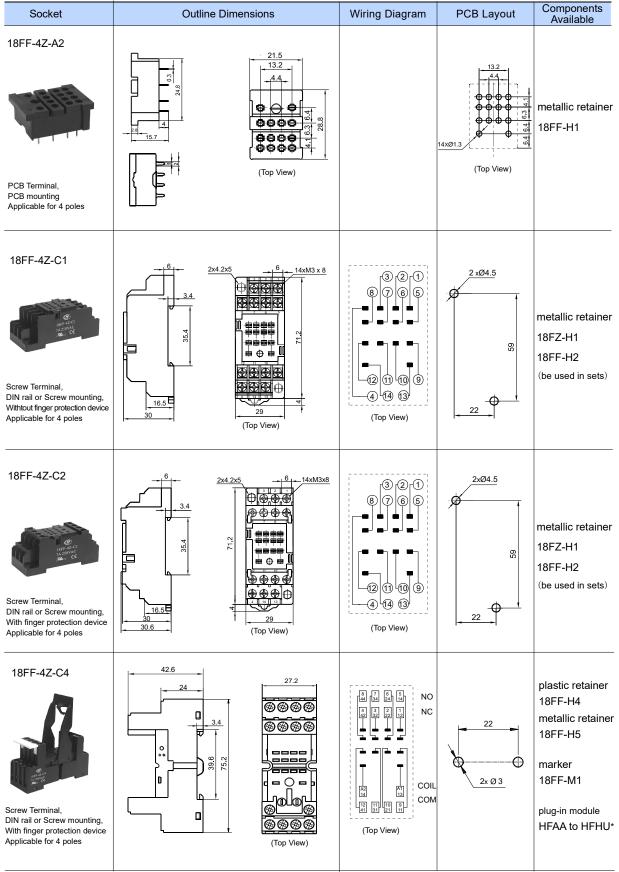
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm



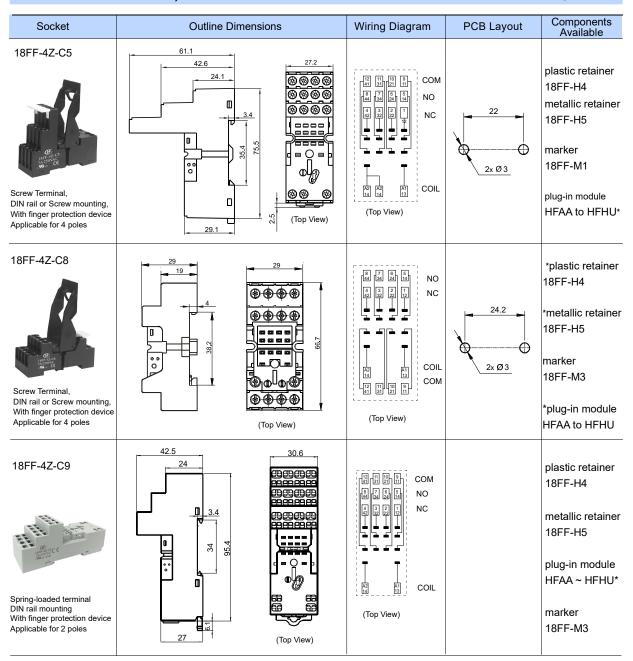
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm



OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm



DIMENSION OF RELATED COMPOENT (AVAILABLE)

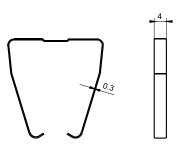
Unit: mm

Retainer

18FZ-H1(Metallic retainer)

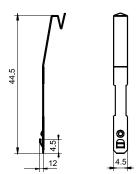
94 1.2 1.2 4.5

18FF-H1(Metallic retainer)

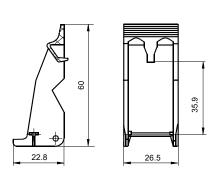


Remark: This retainer is for specific series. Please be aware before ordering.

18FF-H2 (Metallic retainer)

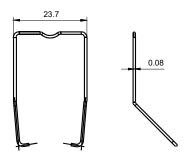


18FF-H4 (Plastic retainer)



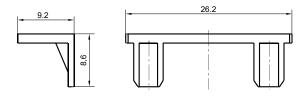
Remark: This retainer is for specific series. Please be aware before ordering.

18FF-H5 (Metallic retainer)

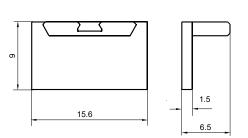


Marker

18FF-M1



18FF-M3



SELECTION OF PARTS

Type of Relay	Mounting termination	Socket	Retainer	Marker	Module
	-	18FF-2Z-A2	18FF-H1	-	-
		18FF-2Z-C1	18FF-H2		
		18FF-2Z-C2			
		18FZ-2Z-C2			
HF18FZ/□ □-2Z□ □ □1/2 □		18FF-2Z-C4	4055 114/115	18FF-M1	
		18FF-2Z-C5			
		18FF-2Z-C8	18FF-H4/H5	18FF-M3	HFAA~HFHU
		18FF-2Z-C9			
	without button	18FF-4Z-A2	18FF-H1		-
		18FF-4Z-C1			
		18FF-4Z-C2	18FF-H2	-	
		18FZ-4Z-C2			
HF18FZ/□ □-4Z□ □ □1/2□		18FF-4Z-C4	- 18FF-H4/H5	18FF-M1	HFAA~HFHU
		18FF-4Z-C5			
		18FF-4Z-C8		18FF-M3	
		18FF-4Z-C9			
		18FF-2Z-C1	18FZ-H1	-	-
		18FF-2Z-C2			
		18FZ-2Z-C2			
HF18FZ/□ □-2Z□ □ □3 □		18FF-2Z-C4	18FF-H4	18FF-M1	HFAA~HFHU
		18FF-2Z-C5		18FF-M3	
		18FF-2Z-C8			
	with button	18FF-2Z-C9			
		18FF-4Z-C1	18FZ-H1		
		18FF-4Z-C2			
		18FZ-4Z-C2	- 18FF-H4	18FF-M1 18FF-M3	HFAA~HFHU
HF18FZ/□ □-4Z□ □ □3 □		18FF-4Z-C4			
		18FF-4Z-C5			
		18FF-4Z-C8			
		18FF-4Z-C9			

Precautions For Use

For your personal safety and the normal operation of the equipment, as well as to prevent fire, please note the following issues:

- 1. The rated current of the socket should be no less than the rated current of the relay.
- 2.Sockets are required to be firmly fixed to prevent the wiring from loosening and affecting the quality of wiring.
- 3.Be sure to disconnect power to the outlet before installation, disassembly, wiring, maintenance and inspection.
- 4. Prevent foreign objects such as wire shavings from falling inside this product when wiring.
- 5.Be sure to install the relay in place, and use accessories such as retainer if necessary to improve contact reliability. Do not use with incomplete connections.
- 6.Be sure to observe the relay ratings and do not overload the relay.
- 7.Before selecting a relay, make sure that the drive voltage matches the relay excitation voltage.

Precautions for the use of non-threaded terminal type sockets

1.Lead end socket description:

18FF-2Z/4Z-C9

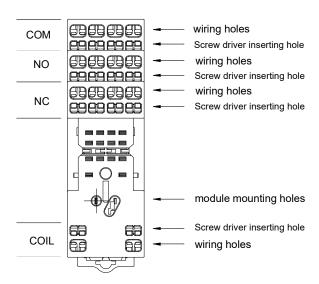


Figure 1

- 2. Things to be noticed when selecting soft wiring.
 - · The soft wiring can be divided into the following types.
 - 0.5mm² above 1.5mm² below or AWG20 above AWG16 below the stranded wire or a single wire.

The front terminal of the wire needs to be peeled off 8mm to 9mm of insulation protection layer, the wire insulation protection layer diameter *2.8mm or less. Please be sure to use according to this size.

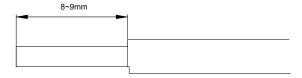


Figure 2

Precautions For Use

• If the protective layer is stripped too short, the wire may be pulled out, and if it is too long, it may be short-circuited to the neighboring wires. If using the stranded wire with cold crimped terminals, please twist the stranded wire tightly before use to avoid loosening the wire.

When wiring, use a screwdriver as shown in the figure.

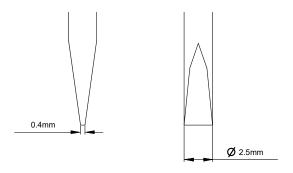


Figure 3

• The insertion position of the wire and the screwdriver and the insertion direction of the screwdriver are as shown in Figure 4.

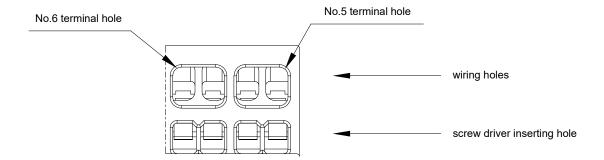


Figure 4

Precautions For Use

Step 1. Insert the screwdriver into the screwdriver insertion hole (square hole) of the socket so that the screwdriver is inserted in a slightly angled direction until the head of the screwdriver is between the back of the spring terminal and the wall of the cover.

Step 2. Keep pushing the screwdriver in until it contacts the stop position inside the socket and the junction is released, keeping the screwdriver in that position. The screwdriver will not come off even if the hand is released.

Step 3. Keeping the screwdriver in the insertion hole, insert the wire or cold crimp terminal to the bottom of the wire insertion hole.

Step 4. Pull out the screwdriver and the wiring is completed.

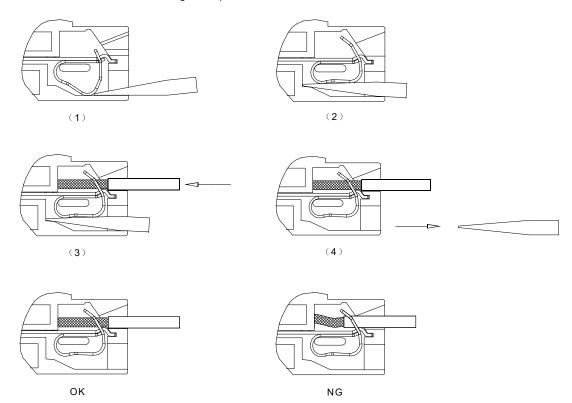


Figure 5

Note : When using wire with insulation protection diameter of ϕ 2mm or less, do not insert the insulated part of the wire into the spring clamp opening position .

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.
- 4. Main outline dimension, outline dimension>50mm ,tolerance should be ± 1 mm; 20mm<outline dimension ≤ 50 mm, tolerance should be ± 0.5 mm; 5mm<outline dimension ≤ 20 mm, tolerance should be ± 0.4 mm; outline dimension ≤ 5 mm, tolerance should be ± 0.3 mm.
- 5. DIN rail mounting: recommend to use standard rail $35\times7.5\times1$ mm, $35\times15\times1$ mm.

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.

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