HF141FF   MINIATURE HIGH POWER RELAY

c UL US

File No.:E133481

CQC

File No.:CQC09002034351

HF141FF
012-HSP
10A 125VAC
8A 250VAC
8A 30VDC
CHINA

Features

- 10A switching capability
- 5kV dielectric strength (between coil and contacts)
- Sockets available
- 1 Form A ,1 Form B and 1 Form C configurations
- Plastic sealed and flux proofed types available
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (29.0 x 12.6 x 20.6) mm

CONTACT DATA

Contact arrangement	1A, 1B, 1C	
Contact resistance	50mΩ max.(at 1A 6VDC)	
Contact material	AgSnO2, AgCdO	
	Standard	High Capacity
Contact rating (Res.load)	8A 250VAC /30VDC 10A 125VAC	10A 30VDC 10A 250VAC
Max. switching power	2000VA / 240W	2500VA / 300W
Max. switching current	10A	
Max. switching voltage	250VAC / 30VDC	
Mechanical endurance	1×10^7OPS	
Electrical endurance	1×10^5OPS	

CHARACTERISTICS

Insulation resistance		1000MΩ (at 500VDC)
Dielectric strength	Between coil & contacts	5000VAC 1min
	Between open contacts	1000VAC 1min
Operate time (at nomi. volt.)		15ms max.
Release time (at nomi. volt.)		5ms max.
Vibration resistance		10Hz to 55Hz 1.5mm DA
Shock resistance	Functional	98m/s^2
	Destructive	980m/s^2
Humidity		5% to 85% RH
Ambient temperature		-40°C to 70°C
Termination		PCB
Unit weight		Approx. 13g
Construction		Plastic sealed, Flux proofed

Notes: 1) The data shown above are initial values.
2) Please find coil temperature curve in the characteristic curves below.
3) UL insulation system: Class A

COIL

Coil power	Standard: Approx. 720mW; Sensitive: Approx. 550mW

COIL DATA   at 23°C

Standard type

Nominal Voltage VDC	Pick-up Voltage VDC max.	Drop-out Voltage VDC min.	Max. Allowable Voltage VDC	Coil Resistance Ω
5	4.0	0.5	6.5	36 x (1±10%)
6	4.8	0.6	7.8	50 x (1±10%)
9	7.2	0.9	11.7	115 x (1±10%)
12	9.6	1.2	15.6	200 x (1±10%)
18	14.4	1.8	23.4	460 x (1±10%)
24	19.2	2.4	31.2	820 x (1±10%)
48	38.4	4.8	62.4	3300 x (1±10%)

Sensitive type

Nominal Voltage VDC	Pick-up Voltage VDC max.	Drop-out Voltage VDC min.	Max. Allowable Voltage VDC	Coil Resistance Ω
5	4.0	0.5	6.5	47 x (1±10%)
6	4.8	0.6	7.8	68 x (1±10%)
9	7.2	0.9	11.7	155 x (1±10%)
12	9.6	1.2	15.6	270 x (1±10%)
18	14.4	1.8	23.4	620 x (1±10%)
24	19.2	2.4	31.2	1100 x (1±10%)
48	38.4	4.8	62.4	4400 x (1±10%)

Notes: When requiring pick-up voltage < 80% of nominal voltage, special order allowed.

HF HONGFA RELAY
ISO9001, ISO/TS16949 , ISO14001, OHSAS18001, IECQ QC 080000 CERTIFIED   2013 Rev. 1.00

SAFETY APPROVAL RATINGS

UL/CUL	High Capacity	10A 30VDC/250VAC
	Standard	8A 30VDC/250VAC
		10A 125VAC

Notes: Only some typical ratings are listed above. If more details are required, please contact us.

ORDERING INFORMATION

	HF141FF /	012	-H	S	P	G	(XXX)

Type

Coil voltage　　5, 6, 9, 12, 18, 24, 48VDC

Contact arrangement　**H:**1 Form A　　**D:**1 Form B　　**Z:**1 Form C

Construction [1)]　　**S:** Plastic sealed　　**Nil:** Flux proofed

Coil power　　**P:** Standard　　**Nil:** Sensitive

Contact capacity　　**G:** High capacity ($AgSnO_2$)　　**Nil:** Standard type (AgCdO)

Customer special code

Notes: 1) Under the ambience with dangerous gas like H_2S, SO_2 or NO_2, plastic sealed type is recommended; Please test the relay in real applications. If the ambience allows, flux proofed type is preferentially recommended.
　　　If water cleaning is required after the relay is assembled on PCB, please contact us for suggestion about suitable parts.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT　　　Unit: mm

Outline Dimensions

1 Form A　　　　　　　　　　1 Form B　　　　　　　　　　1 Form C

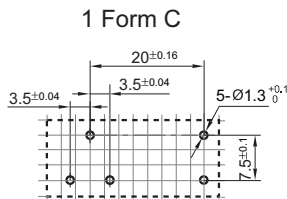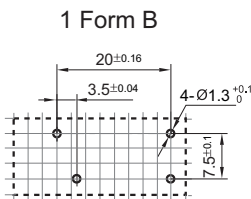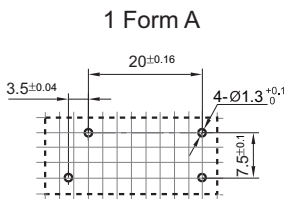
(Bottom view)　　　　　　　(Bottom view)　　　　　　　(Bottom view)
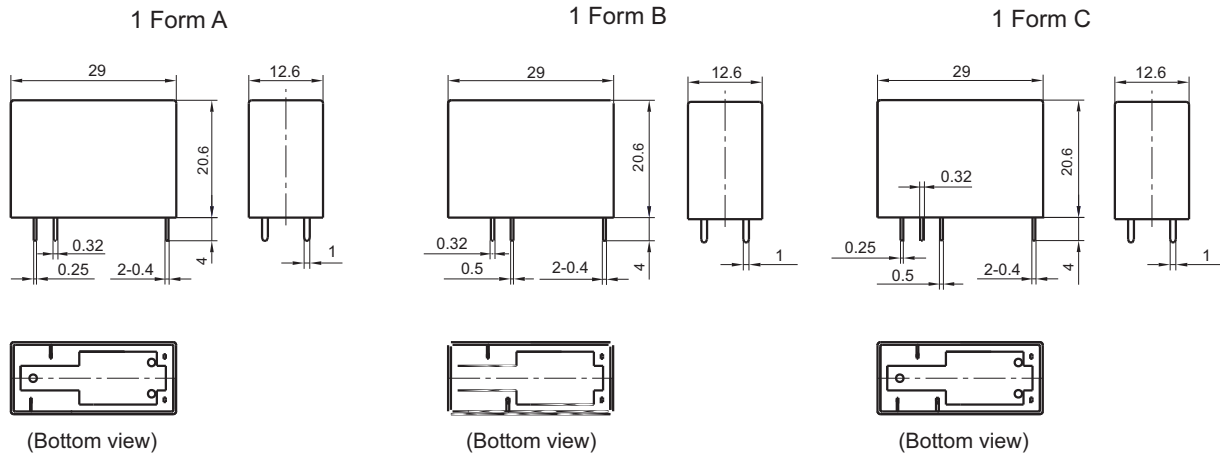
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.
　　　　2) The tolerance without indicating for PCB layout is always ±0.1mm.

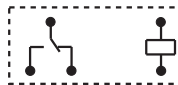## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT
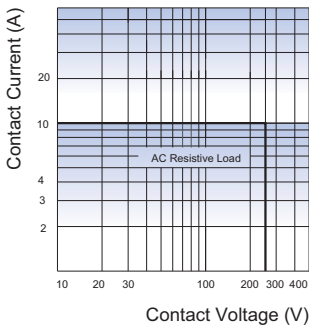
Unit: mm

PCB Layout (Bottom view)

1 Form A

$20^{\pm0.16}$
$3.5^{\pm0.04}$
$4\text{-}\varnothing1.3\,^{+0.1}_{0}$
$7.5^{\pm0.1}$

1 Form B

$20^{\pm0.16}$
$3.5^{\pm0.04}$
$4\text{-}\varnothing1.3\,^{+0.1}_{0}$
$7.5^{\pm0.1}$

1 Form C

$20^{\pm0.16}$
$3.5^{\pm0.04}$
$3.5^{\pm0.04}$
$5\text{-}\varnothing1.3\,^{+0.1}_{0}$
$7.5^{\pm0.1}$

Remark: The width of the gridding is 2.5mm.

Wiring Diagram (Bottom view)

CHARACTERISTIC CURVES

MAXIMUM SWITCHING POWER

AC Resistive Load

Contact Current (A)

Contact Voltage (V)

ENDURANCE CURVE

250VAC Resistive Load (AgSnO$_2$)

250VAC Resistive Load (AgCdO)

Operations (X10000 OPS)

Contact Current (A)
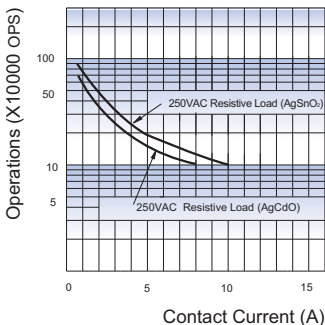
COIL TEMPERATURE RISE

Temperature rise (K)

Coil Power (W)

90
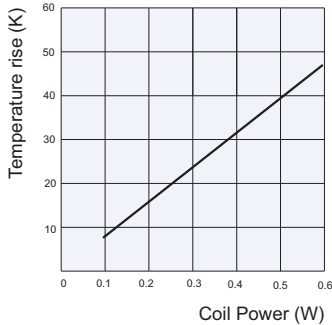
Relay Sockets

Features

- The dielectric strength can reach 5000VAC(I/O) and the insulation resistance is 1000MΩ
- Three mounting types are available: PCB, 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
- Environmental friendly product (RoHS compliant)

CE

c **UL** US

File No.: E253370

CHARACTERISTICS

Type	Nominal Voltage	Nominal Current	Ambient Temperature	Dielectric Strength min.	Screw Torque	Wire Strip Length
14FF-1Z-A1	250VAC	10A	-40 ˚C to 70˚C	5000VAC	—	—
14FF-1Z-C2	250VAC	10A	-40 ˚C to 70˚C	5000VAC	0.6N·m	7mm
14FF-1Z-C3	250VAC	10A	-40 ˚C to 70˚C	5000VAC	0.6N·m	7mm

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT   Unit: mm

Socket	Outline Dimensions	Wiring Diagram / PCB Layout	Components Available
14FF-1Z-A1 PCB terminal, PCB or Screw mounting	(Top View)	(Top View)	
14FF-1Z-C2 Screw terminal, PCB or Screw mounting With finger protection device	(Top View)	COM 11 12 NC 14 NO A2 A1 COIL (Top View)	plastic retainer 14FF-H5 marker 14FF-M1 jumper 14FF-J1 plug-in module HFAA to HFHU*
14FF-1Z-C3 Screw terminal, DIN rail or Screw mounting With finger protection device	(Top View)	22 NC 11 COM 24 NO A2 A1 COIL (Top View)	plastic retainer 14FF-H5 marker 14FF-M1 jumper 14FF-J1 plug-in module HFAA to HFHU*

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

DIMENSION OF RELATED COMPOENT (AVAILABLE)   Unit: mm

Retainer

14FF-H5（Plastic retainer）
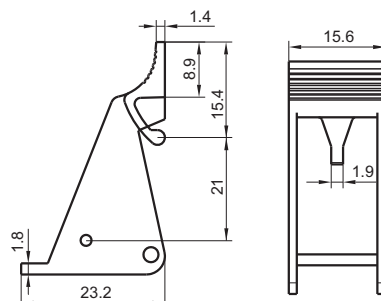
Marker

14FF-M1
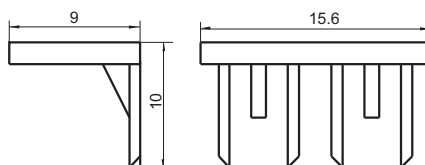
Jumper

14FF-J1
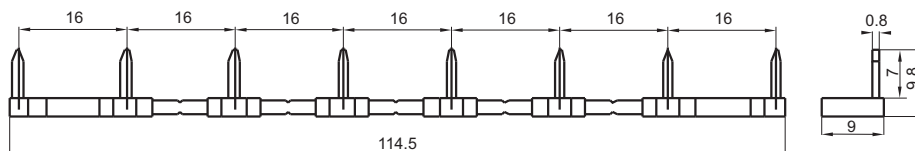
Things to be noticed when selecting sockets:

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 HF141FF relay. If you have any special requirements, please contact us.

Disclaimer

This datasheet is for the customers' reference. All the specifications are 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.