HF141FF MINIATURE HIGH POWER RELAY

c UL us
File No.:E133481

CQC
File No.:CQC09002034351

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	$AgSnO_2$, AgCdO	
Contact rating (Res.load)	Standard	High Capacity
	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 x 10^7OPS	
Electrical endurance	Standard type: 1 x 10^5OPS (NO or NC, 8A 250VAC/30VDC, Resistive load, Room temp., 1s on 9s off), High capactiy type: 1 x 10^5OPS (NO or NC, 10A 250VAC/30VDC, Resistive load, Room temp., 1s on 9s off),	

Notes: For plastic sealed type, the venting-hole should be excised in electrical endurance test.

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. 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. 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: 1) When requiring pick-up voltage < 80% of nominal voltage, special order allowed.
2) *Maximum voltage refers to the maximum voltage which relay coil could endure in a short period of time.
3) 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.

SAFETY APPROVAL RATINGS

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

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

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)	
Special code[3]	**XXX:** Customer special requirement	**Nil:** Standard	

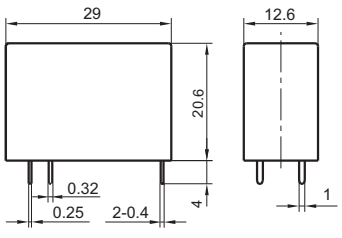
Notes: 1) Under the ambience with dangerous gas like H_2S, SO_2 or NO_2, plastic sealed type is recommended; Please test the relay in real applications. If the ambience allows, flux proofed type is preferentially recommended.
2) Contact is recommended for suitable condition and specifications if water cleaning or surface process is involved in assembling relays on PCB.
3) The customer special requirement express as special code after evaluating by Hongfa.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

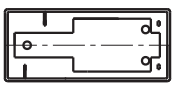
Unit: mm

Outline Dimensions

1 Form A



(Bottom view)



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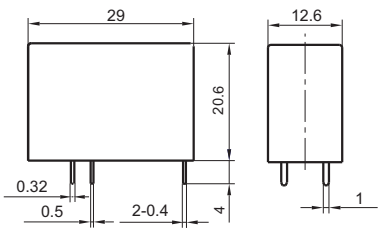

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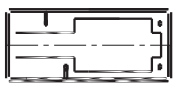
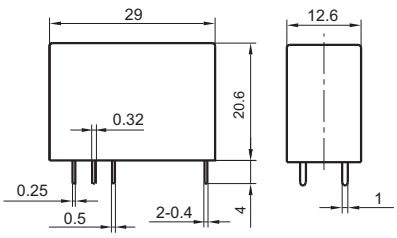
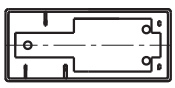


1 Form C



(Bottom view)



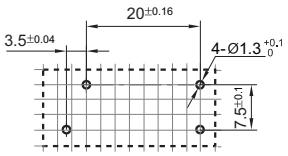
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.
2) The tolerance without indicating for PCB layout is always ±0.1mm.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

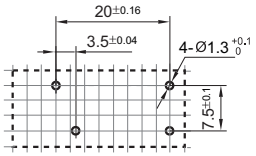
Unit: mm

PCB Layout (Bottom view)

1 Form A



1 Form B



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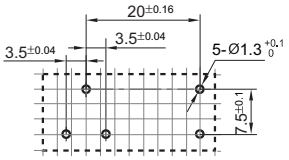
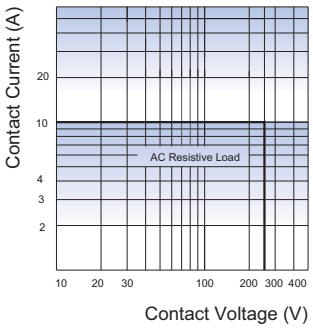


Remark: The width of the gridding is 2.5mm.

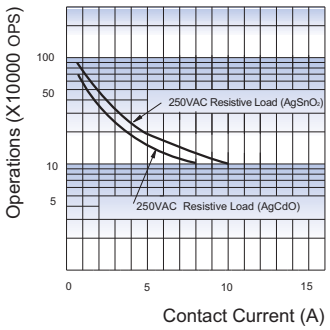
Wiring Diagram (Bottom view)

CHARACTERISTIC CURVES

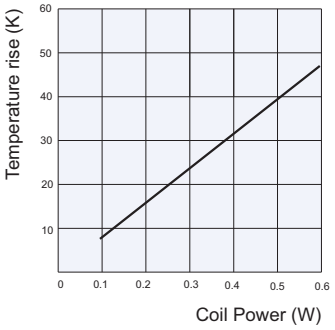
MAXIMUM SWITCHING POWER



ENDURANCE CURVE



COIL TEMPERATURE RISE



Test conditions:

NO, Flux proofed,

Room temp., 1s on 9s off.

Relay Sockets

CE

cULus

File No.: E253370

Features

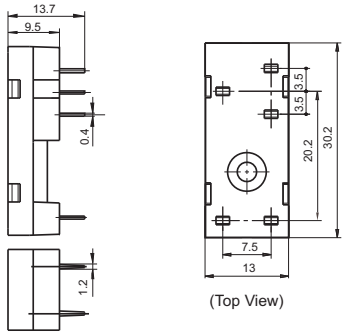
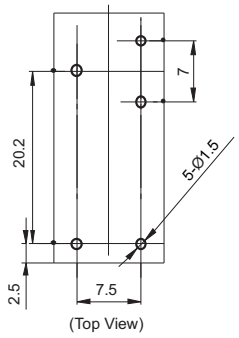
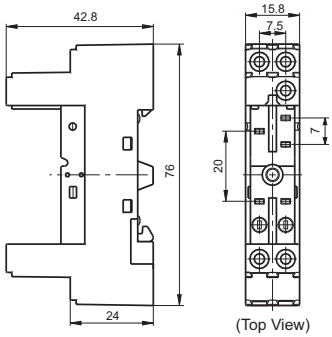
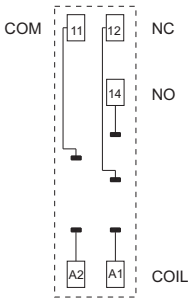
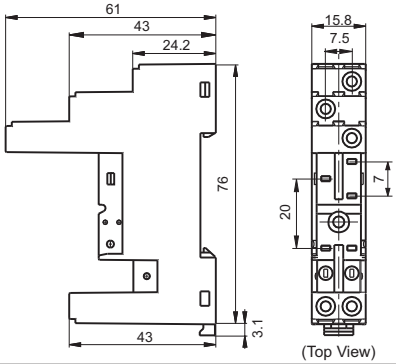
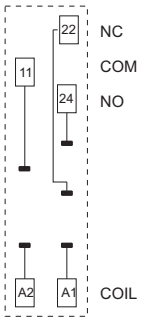
- The dielectric strength can reach 5000VAC(I/O) and the insulation resistance is 1000MΩ
- Three mounting types are available: PCB, screw mounting and DIN rail mounting
- With finger protection device
- Many kinds of plug-in modules are available with the function of energizing indication and wiring protection
- Environmental friendly product (RoHS compliant)

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			
14FF-1Z-C2  Screw terminal, PCB or Screw mounting With finger protection device			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			plastic retainer 14FF-H5 marker 14FF-M1 jumper 14FF-J1 plug-in module HFAA to HFHU*

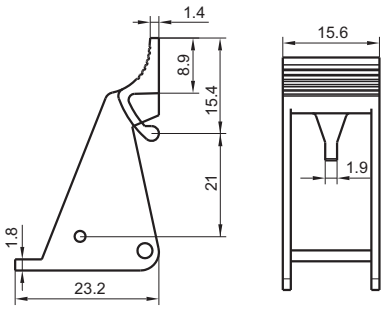
Notes: * Please refer to the product datasheet if plug-in module is required.

DIMENSION OF RELATED COMPOENT (AVAILABLE)

Unit: mm

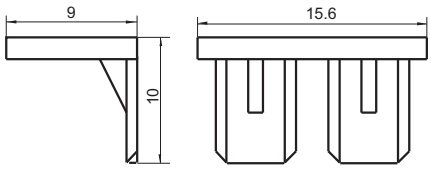
Retainer

14FF-H5（Plastic retainer）



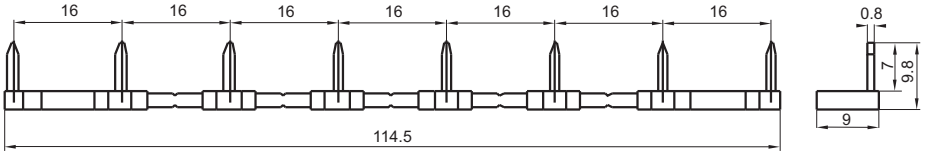
Marker

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.
4. Main outline dimension(L, W, H) ≥50mm, tolerance should be ±1mm; outline dimension >20mm and <50mm, tolerance should be ±0.5mm; outline dimension ≤20mm, tolerance should be ±0.3mm.
5. DIN rail mounting: recommend to use standard rail 35×7.5×1, 35×15×1.

Disclaimer

The 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.