

HF14FW

MINIATURE HIGH POWER RELAY


File No.:E134517


File No.:40023508


File No.:CQC09002030293



Features

- 20A switching capability
- 4kV dielectric strength (between coil and contacts)
- Meeting VDE 0700, 0631 reinforce insulation
- 1 Form A, 1 Form B and 1 Form C configurations
- Sockets available
- Plastic sealed and dust protected types available
- UL insulation system: Class F available
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (29.0 x 13.0 x 26.5) mm

CONTACT DATA	
Contact arrangement	1A, 1B, 1C
Contact resistance	50mΩ max.(at 1A 24VDC)
Contact material	AgSnO ₂ , AgCdO
Contact rating	Resistive: 16A 277VAC/24VDC 1HP 240VAC TV-8 125VAC (NO contact)
Max. switching voltage	277VAC / 30VDC
Max. switching current	20A
Max. switching power	5540VA / 480W
Mechanical endurance	1 x 10 ⁷ OPS
Electrical endurance	1 x 10 ⁶ OPS (See approval reports for more details)

CHARACTERISTICS		
Insulation resistance		1000MΩ (at 500VDC)
Dielectric strength	Between coil & contacts	4000VAC 1min
	Between open contacts	1000VAC 1min
Operate time (at nomi. volt.)		15ms max.
Release time (at nomi. volt.)		5ms max.
Ambient temperature		-40°C to 85°C
Humidity		5% to 85% RH
Shock resistance	Functional	98m/s ²
	Destructive	980m/s ²
Vibration resistance		10Hz to 55Hz 1.5mm DA
Termination		PCB
Unit weight		Approx. 18.5g
Construction		Plastic sealed, Dust protected

- 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 F, Class B.

COIL	
Coil power	Standard: Approx.720mW
	Sensitive: Approx.530mW

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	3.6	0.5	5.5	36 x (1±10%)	
6	4.3	0.6	6.6	50 x (1±10%)	
9	6.5	0.9	9.9	115 x (1±10%)	
12	8.6	1.2	13.2	200 x (1±10%)	
18	13.0	1.8	19.8	460 x (1±10%)	
24	17.3	2.4	26.4	820 x (1±10%)	
48	34.6	4.8	52.8	3300 x (1±10%)	
60	43.2	6.0	66.0	5100 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	3.60	0.5	7.0	47 x (1±10%)
6	4.30	0.6	8.4	68 x (1±10%)
9	6.50	0.9	12.6	160 x (1±10%)
12	8.60	1.2	16.8	275 x (1±10%)
18	13.0	1.8	25.2	620 x (1±10%)
24	17.3	2.4	33.6	1100 x (1±10%)
48	34.6	4.8	67.2	4170 x (1±10%)
60	43.2	6.0	84.0	7000 x (1±10%)

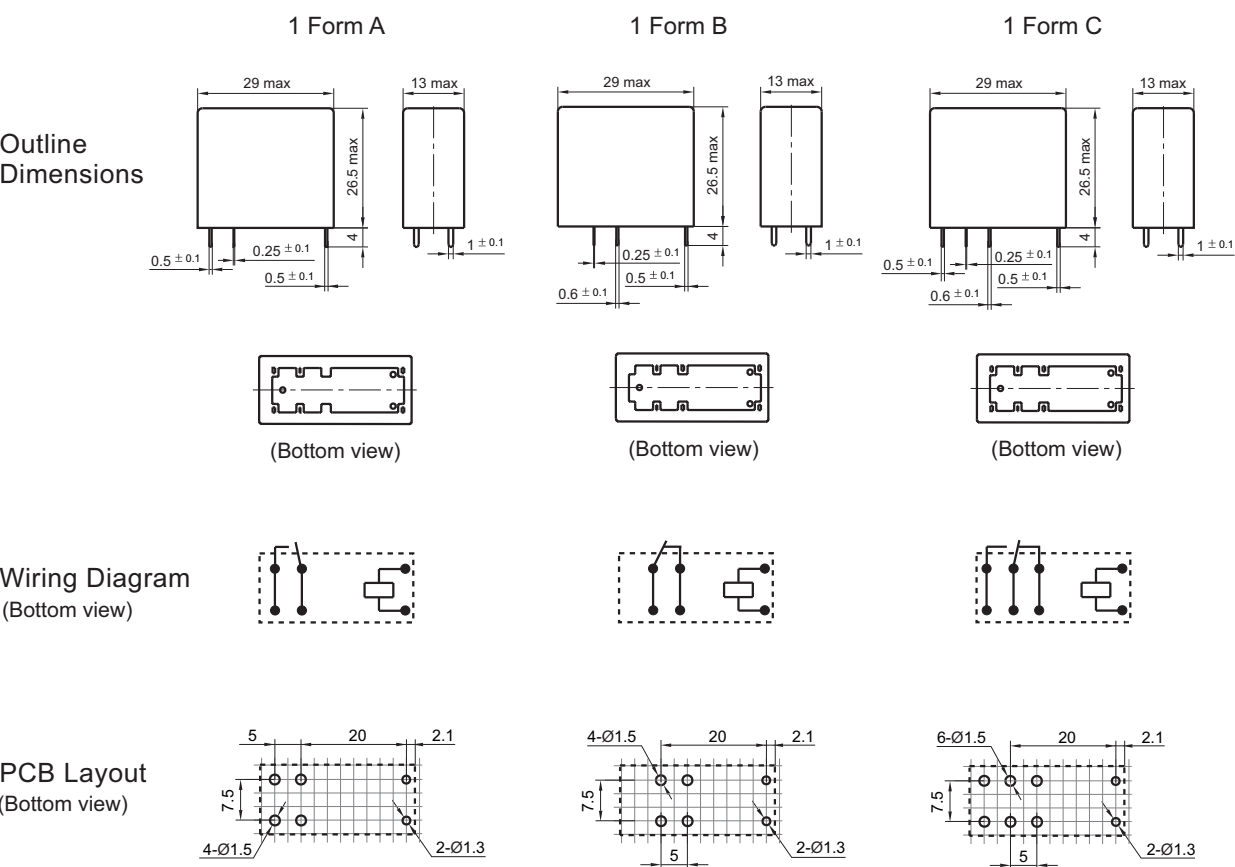
- Notes: 1) When requiring pick-up voltage < 72% of nominal voltage, special order allowed.
2) Suggesting to use the sensitive type.

SAFETY APPROVAL RATINGS				
UL/CUL	AgSnO ₂	1 Form A	20A 277VAC Resistive 1HP (8FLA) 240VAC TV-8 125VAC 16A 240VAC General Use 20A 24VDC 10FLA 60LRA 250VAC	
		1 Form C 1 Form B	16A 277VAC Resistive 1HP (8FLA) 240VAC 16A 240VAC General Use 20A 24VDC NO:20A 277VAC Resistive TV-8 125VAC 10FLA 60LRA 250VAC	
	AgCdO	1 Form A	20A 277VAC Resistive 1HP (8FLA) 240VAC 16A 240VAC General Use 20A 24VDC Resistive 20A 125VAC General Use	
		1 Form C 1 Form B	1HP (8FLA) 240VAC 16A 240VAC General Use 20A 24VDC Resistive 20A 125VAC General Use NO:20A 277VAC Resistive	
	VDE (coil power is 530mW)	AgSnO ₂	1 Form A	20A 250VAC 16A 30VDC
			1 Form C	16A 250VAC 16A 30VDC NO:20A 250VAC
Notes: Only some typical ratings are listed above. If more details are required, please contact us.				

ORDERING INFORMATION								
	HF14FW /	012	-H	S	P	T	F	(XXX)
Type								
Coil voltage		5, 6, 9, 12, 18, 24, 48, 60VDC						
Contact arrangement		H: 1Form A D: 1 Form B Z: 1 Form C						
Construction ¹⁾		S: Plastic sealed Nil: Dust protected						
Coil power		P: Standard Nil: Sensitive						
Contact material		T: AgSnO ₂ Nil: AgCdO						
Insulation standard		F: Class F Nil: Class B						
Customer special code								

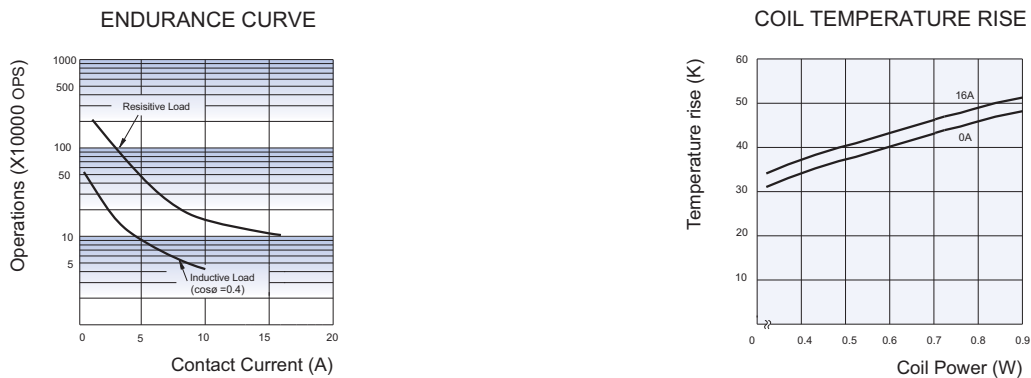
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm



Remark: 1) In case of no tolerance shown in outline dimension: outline dimension $\leq 1\text{mm}$, tolerance should be $\pm 0.2\text{mm}$; outline dimension $> 1\text{mm}$ and $\leq 5\text{mm}$, tolerance should be $\pm 0.3\text{mm}$; outline dimension $> 5\text{mm}$, tolerance should be $\pm 0.4\text{mm}$.
2) The tolerance without indicating for PCB layout is always $\pm 0.1\text{mm}$.
3) The width of the gridding is 2.5mm.

CHARACTERISTIC CURVES



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)

CHARACTERISTICS

Type	Nominal Voltage	Nominal Current	Ambient Temperature	Dielectric Strength min.	Screw Torque	Wire Strip Length
14FF-2Z-A1	250VAC	10A	-40 °C to 70°C	5000VAC	—	—
14FF-2Z-C2	250VAC	10A	-40 °C to 70°C	5000VAC	0.6N·m	7mm
14FF-2Z-C3	250VAC	10A	-40 °C to 70°C	5000VAC	0.6N·m	7mm
14FF-2Z-C4	250VAC	10A	-40 °C to 70°C	5000VAC	0.6N·m	7mm
140FF-2Z-C3	250VAC	10A	-40 °C to 70°C	5000VAC	0.6N·m	7mm

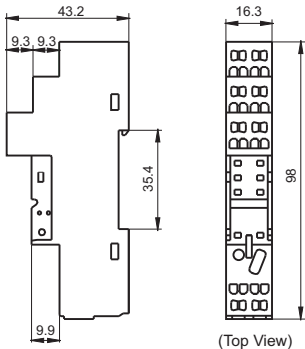
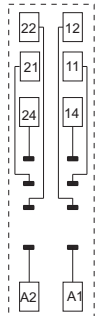
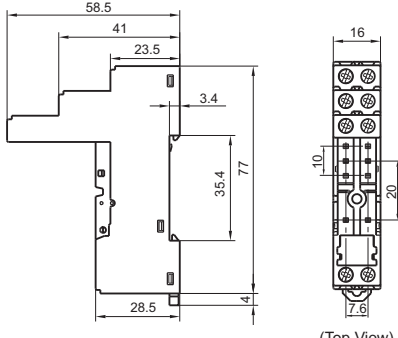
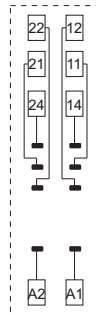
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

Socket	Outline Dimensions	Wiring Diagram / PCB Layout	Components Available
14FF-2Z-A1 PCB terminal, PCB or Screw mounting	(Top View)	(Top View)	metallic retainer 14FF-H3
14FF-2Z-C2 Screw terminal DIN rail or Screw mounting With finger protection device	(Top View)	(Top View)	plastic retainer 14FF-H6 marker 14FF-M1 jumper 14FF-J1 plug-in module HFAA to HFHU*
14FF-2Z-C3 Screw terminal DIN rail or Screw mounting With finger protection device	(Top View)	(Top View)	plastic retainer 14FF-H6 marker 14FF-M1 jumper 14FF-J1 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
14FF-2Z-C4  Spring-loaded terminal DIN rail mounting With finger protection device	 (Top View)	 (Top View)	plastic retainer 14FF-H6 marker 14FF-M1 plug-in module HFAA to HFHU*
140FF-2Z-C3  Screw terminal DIN rail or Screw mounting With finger protection device	 (Top View)	 (Top View)	plastic retainer 140F-H1 marker 140FF-M1 jumper 140FF-J1

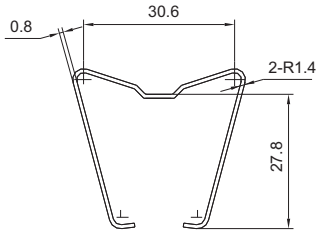
Notes: * Please refer to the product datasheet if plug-in module is required.

DIMENSION OF RELATED COMPONENT (AVAILABLE)

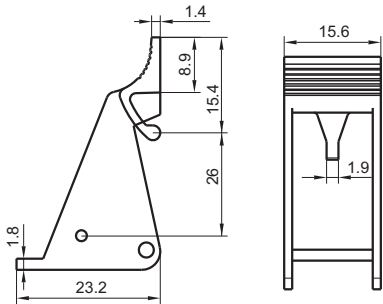
Unit: mm

Retainer

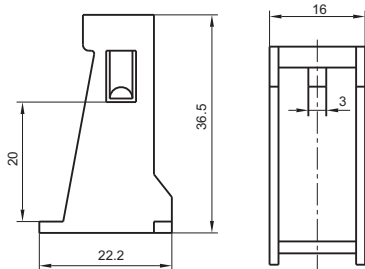
14FF-H3 (metallic retainer)



14FF-H6 (Plastic retainer)



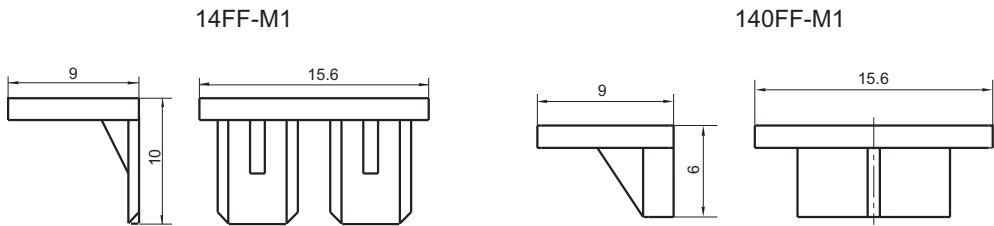
140F-H1 (Plastic retainer)



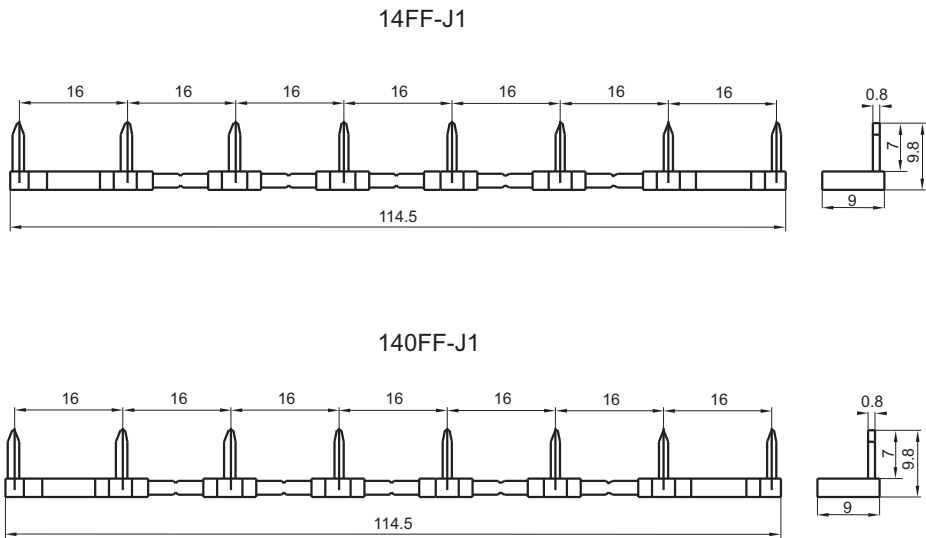
DIMENSION OF RELATED COMPONENT (AVAILABLE)

Unit: mm

Marker



Jumper



- 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 HF14FW 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.

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