HF189F MINIATURE HIGH POWER RELAY

c UL us
认证号:E133481

认证号:R 50493573



Features

- With auxiliary monitoring contact,Detection of main contact welding makes it possible to construct a safety circuit (according to IEC 61810-3)
- Contact gap：2.25mm,3.0mm(763 type)
- Main Contact Resistance to Short Circuit Current (according to IEC 62752 1.5kA 6kA²s or IEC 62955 1.85kA 4.5kA2s)
- 4kV Dielectric strength (Between Main contact & coil)
- UL insulation system: Class F available

RoHS compliant

CONTACT DATA

Contact arrangement	1A(Main contact)+1B(Auxiliary contact)
Contact resistance[1)]	Main contact≤10mΩ(6VDC 20A)
Contact material	Main contact:$AgSnO_2$, Auxiliary contact：AgNi
Contact clearance	Main contact≥2.25mm, 763 type:Main contact≥3.0mm
Contact rating (resistance)	Main contact：Making 10A, Loading 48A,Breaking 10A 277VAC, Auxiliary contact：1A 12VDC
Max.swtiching voltage	Main contact：600VAC
Max.switching current	Main contact：48A Auxiliary contact：1A
Max.switching power	Main contact：13296VA Auxiliary contact：12W
Min. switching load[2)] (Auxiliary contact)	NC: 100mA 12VDC NC(Gold plated): 10mA 12VDC
Mechanical endurance	1×10^5ops
Electrical endurance	Main contact≥5×10^4ops (85℃, 1s on 9s off,Making 10A,Loading 48A,Breaking 10A 277VAC,Resistive load) **763 type:** Main contact≥5×10^4ops (85℃, 1s on 9s off,32A 277VAC, Resistive load)

Notes:1) The data shown above are initial values.
2) Min. contact load is reference value. Please perform the confirmation test with the actual load before usage since reference value may change according to switching frequencies, environmental conditions and expected life cycles.

COIL DATA 23℃

Nominal Voltage VDC	Pick-up Voltage VDC max.	Drop-out Voltage VDC min	Max. Allowable Voltage VDC [1)]	Coil Resistance Ω
5	3.50	0.30	5.5	13×(1±10%)
9	6.30	0.45	9.9	42.2×(1±10%)
12	8.40	0.60	13.2	75×(1±10%)
18	12.6	0.90	19.8	168.8×(1±10%)
24	16.8	1.20	26.4	300×(1±10%)
48	33.6	2.40	52.8	1200×(1±10%)

Notes:1)The data shown above are initial values.
2) Maximum voltage refers to the maximum voltage which relay coil could endure in a short period of time.

CHARACTERISTICS

Insulation resistance		1000MΩ(500VDC)
Dielectric strength	Between coil & Main contact	4000VAC 1min
	Between open Main contact	2500VAC 1min
	Between Main contact & Auxiliary contact	4000VAC 1min
	Between coil & Auxiliary contact	1000VAC 1min
Surge Voltage (Between coil & Main contacts)		10kV(1.2/50μs)
Operate time (at nomi. volt.)		30ms Max.
Release time (at nomi. volt.)		20ms Max.
Temperature rise		70K max.（Rated voltage excitation will reach hold voltage,at 85℃)
Shock resistance	Functional	Main contact：10g
	Destructive	Main contact：100g
Vibration resistance		Main contact：10Hz to 55Hz DA 1.5mm
Humidity		5% to 85%RH
Ambient temperature		-40℃ to 85℃ (Apply holding voltage to coil)
Termination		PCB
Unit weight		Approx.66g
Construction		Flux proofed

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

COIL

Coil power	Approx.1.92W
Holding voltage[1)]	35% to 70%U_N(at 23℃) 45% to 55%U_N(at 85℃)

Notes:1)The coil holding voltage is the voltage applied to coil 100ms after the rated voltage.

SAFETY APPROVAL RATINGS

UL/CUL[3]	Main contact：Making 10A, Loading48A, Breaking 10A, 277VAC/600VAC, 85℃, 1s on 9s off, 5×10^4ops Main contact：Making 48A, Breaking 10A, 277VAC/600VAC, 85℃, 1s on 9soff, 5×10^4ops
TÜV	Main contact：Making 10A, Loading 48A,Breaking 10A, 277VAC/600VAC，85℃，1s on 9s off,5×10^4ops Main contact：Making48A，Breaking 10A, 277VAC/600VAC,85℃,1s on 9s off,5×10^4ops **763 type:** 85℃, 1s on 9s off,32A 277VAC,Resistive load,5×10^4ops

Notes:1) All values unspecified are at room temperature.
2) Only some typical rating are listed above.If more details are required,please contact us.
3) Suitable for overvoltage category III, and shall provide protection for a rated impulse withstand voltage peak of 6 kv.

ORDERING INFORMATION

	HF189F/	12	-H	B		T	F	（XXX）

Type

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

Main contact arrangement **H:**1 Form A

Auxiliary contact arrangemen **Nil:** Without auxiliary contact
B:1 Form B

Construction **Nil:** flux proofed types

Main contact material **T:** $AgSnO_2$

Insulation class **F:** Class F

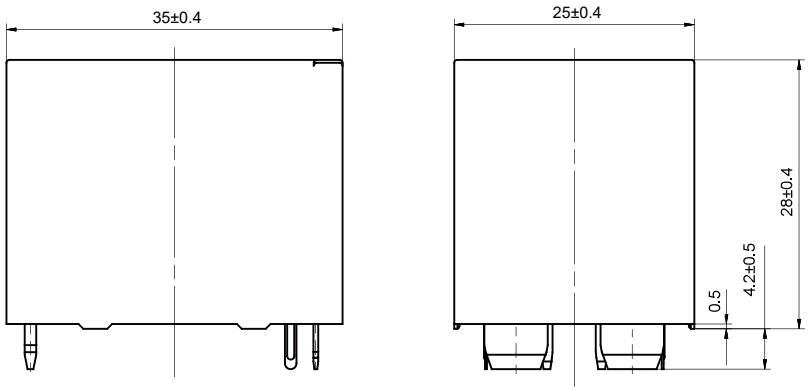
Special code
XXX: Customer special requiremen **Nil:** Standard
763: Contact gap 3.0mm **991:** Auxiliary contact gold plated

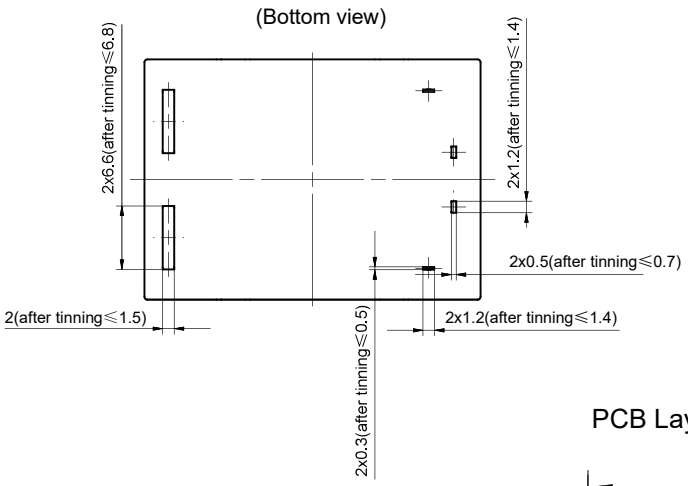
Notes:1) Flux-proofed relays can not be used inthe environment with pollutants like H_2S, SO_2, NO_2, dust, etc.
2) Water clearing or surface process is not suggested after the flux-proofed relays are assembled on PCB.
3) The customer special requirement express as special code after evaluating by Hongfa.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

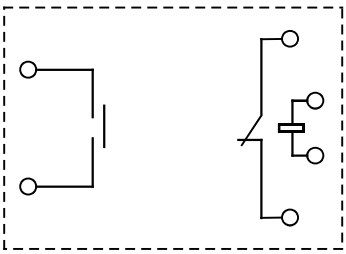
Unit: mm

Outline Dimensions

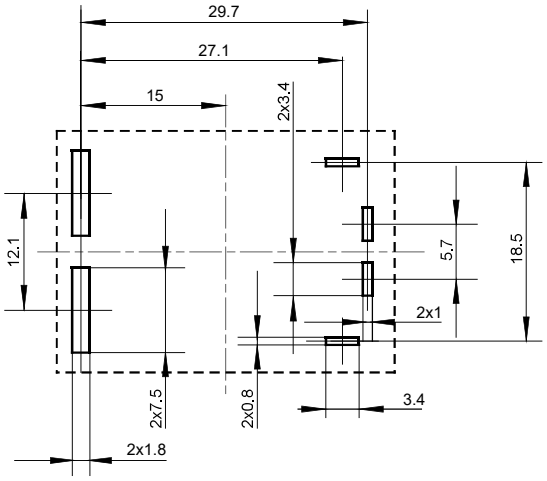




Wiring Diagram(Bottom view)



PCB Layout(Bottom view)



Notes:1) The pin dimension of the product outline drawing is the size before tinning (it will become larger after tinning), and the mounting hole size is the recommended design size of the PCB board hole. The specific PCB board hole design size can be mapped and adjusted according to the actual product.

2) 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 and ≤30mm, tolerance should be ±0.4mm;outline dimension＞30 mm, tolerance should be ±0.6mm.

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

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.

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