HF190F MINIATURE HIGH POWER RELAY

File No.:E133481

File No.:R 50509389

File No.:CQC21002301055



Features

- With auxiliary monitoring contacts (according to Clause L.8.4 of IEC 60947-5-1)
- Contact gap：2.25mm
- Main Contact Resistance to Short Circuit Current: according to IEC 62752 1.5kA 6kA^{2}s
  627 type Resistance to Short Circuit Current: according to IEC 62955:2018 9.11.2 3kA
- 4kV Dielectric strength (Between Main contacts & 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	Silver Alloys
Contact clearance	Main contact≥2.25mm
Contact rating (resistance)	Main contact：32A 277VAC /30VDC Auxiliary contacts：1A 30VDC
Max.swtiching voltage	277VAC
Max.switching current	Main contact：32A Auxiliary contact：1A
Max.switching power	Main contact：8864VA / 480W Auxiliary contacts：30W
Min. switching load[2] (Auxiliary contact)	NC: 100mA 12VDC NC(Gold plated): 10mA 12VDC
Mechanical endurance	5×10^5ops
Electrical endurance	Main contact≥5×10^4ops (85℃, 1s on 9s off,Making 10A, Loading 32A,Breaking 10A 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.

CHARACTERISTICS

Insulation resistance		1000MΩ(500VDC)
Dielectric strength	Between open Main contacts	2500VAC 1min
	Between coil & Main contacts	4000VAC 1min
	Between Main contact & Auxiliary contact	4000VAC 1min
	Between coil & Auxiliary contacts	1000VAC 1min
Surge Voltage		10kV(1.2/50μs)
Operate time (at nomi. volt.)		30ms
Release time (at nomi. volt.)		20ms
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℃
Termination		PCB
Unit weight		Approx.30g
Construction		Flux proofed

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

COIL

Coil power	Standard type: Approx.1.55W 627 type: 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	Making 10A Loading 32A Breaking 10A,277VAC 85℃, 1s on 9s off,5×10^4
TÜV	Making 10A Loading 32A Breaking 10A,277VAC 85℃, 1s on 9s off,5×10^4
CQC	Making 10A Loading 32A Breaking 10A,277VAC 85℃, 1s on 9s off,5×10^4

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.

COIL DATA

23℃

Standard type

Nominal Voltage VDC	Pick-up Voltage VDC max.	Drop-out Voltage VDC min	Max. Allowable Voltage VDC [1)]	Coil Resistance Ω
5	3.75	0.25	5.5	16.1×(1±10%)
9	6.75	0.45	9.9	52×(1±10%)
12	9.00	0.60	13.2	93×(1±10%)
18	13.5	0.90	19.8	209×(1±10%)
24	18.0	1.20	26.4	372×(1±10%)
48	36.0	2.40	52.8	1486×(1±10%)

627 type

Nominal Voltage VDC	Pick-up Voltage VDC max.	Drop-out Voltage VDC min	Max. Allowable Voltage VDC [1)]	Coil Resistance Ω
5	3.75	0.25	5.5	13×(1±10%)
9	6.75	0.45	9.9	42×(1±10%)
12	9.00	0.60	13.2	75×(1±10%)
18	13.5	0.90	19.8	168.7×(1±10%)
24	18.0	1.20	26.4	300×(1±10%)
48	36.0	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.

ORDERING INFORMATION

HF190F/ 12 -H B T F （XXX）

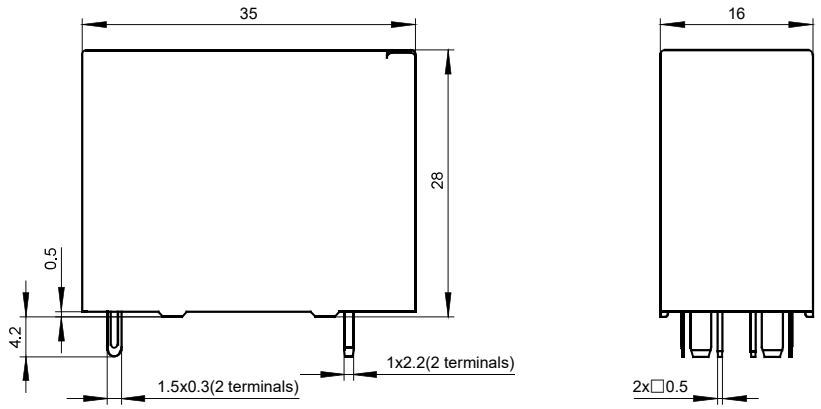
Type	
Coil voltage	5,9,12,18,24,48 VDC
Main contact arrangement	**H:**1 Form A
Auxiliary contact arrangemen	**B:**1 Form B **Nil**： Without auxiliary contact
Main contact material	**T:** $AgSnO_2$
Insulation class	**F:** Class F
Special code	**XXX:** Customer special requiremen **Nil:** Standard **991:** 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

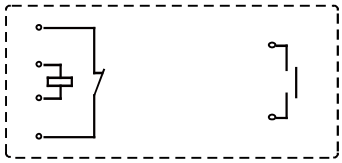
Outline Dimensions



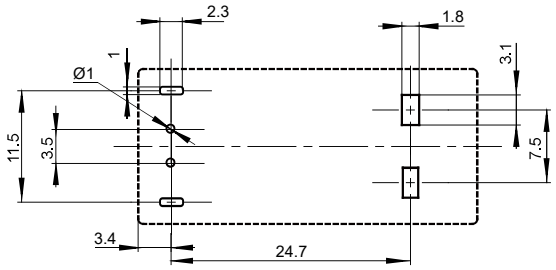
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

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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