HF191F-L MINIATURE HIGH POWER LATCHING RELAY

File No.：E133481

File No.：R 50615722

File No.：CQC 21002316567

Features

- Latching relay
- High capacity：50A 277VAC
- High surge current capacity：480A/2.1ms
- TV-20 250VAC Capability
- Dielectric strength: Between coil & contacts≥5000VAC
- Outline Dimensions：(35×12×24) mm

RoHS compliant

CONTACT DATA

Contact arrangement	1A
Contact resistance(initial)[1]	Max.100mΩ(1A 6VDC)
Contact material	$AgSnO_2$
Contact rating(Res. load)	50A 277VAC
Max. swtiching voltage	480VAC
Max. switching current	50A
Max. switching power	15360VA
Mechanical endurance	1×10^6OPS
Electrical endurance	6000OPS (50A 277VAC, Resistive load, at 85℃, 1s on 9s off)

Notes: 1) The data shown above are initial values.
2) For plastic sealed type,the venting hole should be excised in electrical endurance test.

CHARACTERISTICS

Insulation resistance		1000MΩ(500VDC)
Dielectric strength	Between open contacts	1500VAC 1min
	Between coil & contacts	5000VAC 1min
Surge voltage (Between coil & contacts)		10kV(1.2/50μs)
Set time(at rated. volt.)		Max.15ms
Reset time(at rated. volt.)		Max.15ms
Shock resistanc	Functional	98m/s²
	Destructive	980m/s²
Vibration resistance		10Hz to 55Hz 2.0mm DA
Humidity		5 % to 85 % RH
Ambient temperature		-40℃ to 85℃
Termination		PCB
Unit weight		Approx. 22g
Construction		Plastic sealed,Flux proofed

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

COIL

Coil power	1 coil latching：Approx. 1.2W 2 coils latching：Approx. 2W

COIL DATA at 23℃

1 coil latching

Nominal Voltage VDC	Pick-up Voltage VDC max.[1]	Drop-out Voltage VDC min.[1]	Max. Voltage VDC[2]	Pulse Duration ms Typ	Pulse Duration ms Min	Coil Resistance Ω
3	2.4	2.4	6	50	30	7.5×(1±10%)
5	4.0	4.0	10	50	30	20.8×(1±10%)
6	4.8	4.8	12	50	30	30×(1±10%)
9	7.2	7.2	18	50	30	67.5×(1±10%)
12	9.6	9.6	24	50	30	120×(1±10%)
15	12	12	30	50	30	187.5×(1±10%)
18	14.4	14.4	36	50	30	270×(1±10%)
24	19.2	19.2	48	50	30	480×(1±10%)
48	38.4	38.4	96	50	30	1920×(1±10%)

2 coils latching

Nominal Voltage VDC	Pick-up Voltage VDC max.[1]	Drop-out Voltage VDC min.[1]	Max. Voltage VDC[2]	Pulse Duration ms Typ	Pulse Duration ms Min	Coil Resistance Ω
3	2.4	2.4	6	50	30	4.5×(1±10%)
5	4.0	4.0	10	50	30	12.5×(1±10%)
6	4.8	4.8	12	50	30	18×(1±10%)
9	7.2	7.2	18	50	30	40.5×(1±10%)
12	9.6	9.6	24	50	30	72×(1±10%)
15	12	12	30	50	30	112.5×(1±10%)
18	14.4	14.4	36	50	30	162×(1±10%)
24	19.2	19.2	48	50	30	288×(1±10%)
48	38.4	38.4	96	50	30	1152×(1±10%)

Notes: 1)The data shown above are initial values;
2)Max. voltage refers to the maximum voltage which relay coil could endure in a short period of time(≤50ms).

SAFETY APPROVAL RATINGS

UL/CUL	50A 277/250/125/120VAC Resistive load 85℃ 40A 277/250/125/120VAC Resistive load 85℃ TV-20 250/240/120VAC 40℃ 16A 277VAC/120VAC Electronic ballast 85℃
TUV	50A 277/250/125/120VAC Resistive load 85℃
CQC	50A 277/250/125/120VAC Resistive load 85℃ 32A 480/380/277/250/125/120VAC Resistive load 40℃

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

HF191F-L/	12	-H	S	L1	T	F	K	(XXX)

Type	
Coil voltage	3,5,6,9,12,15,18,24,48VDC
Contact arrangement	**H:** 1 Form A
Construction[1)2)]	**S:** Plastic sealed(no manual switch) **Nil:** Flux proofed
Sort	**L1:** 1 coil latching **L2:** 2 coils latching
Contact material	**T:** $AgSnO_2$
Insulation standard	**F:** Class F
Manual switch	**K:** With manual switch **Blank:** No manual switch
Special code[3)]	**XXX:** Customer special requirement **Nil:** Standard type

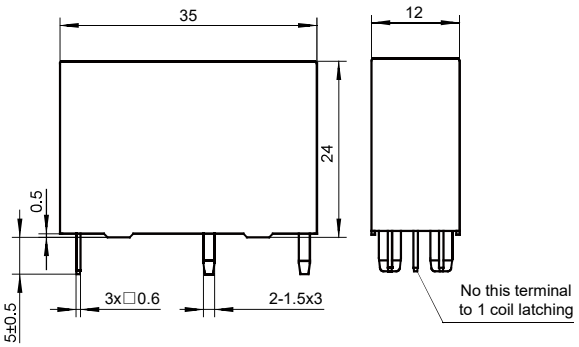
Notes: 1) We recommend flux proofed types for a clean environment(free from contaminations like H_2S, SO_2, NO_2, dust,etc.).We suggest to choose plastic sealed types and validate it in real application for an unclean environment(with contaminations like H_2S, SO_2,NO_2, dust,etc.).
2) Contact is recommended 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

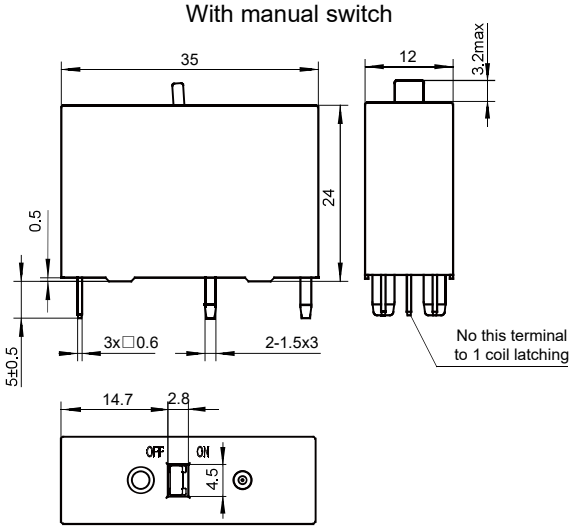
Unit: mm

Outline Dimensions

No manual switch



With manual switch

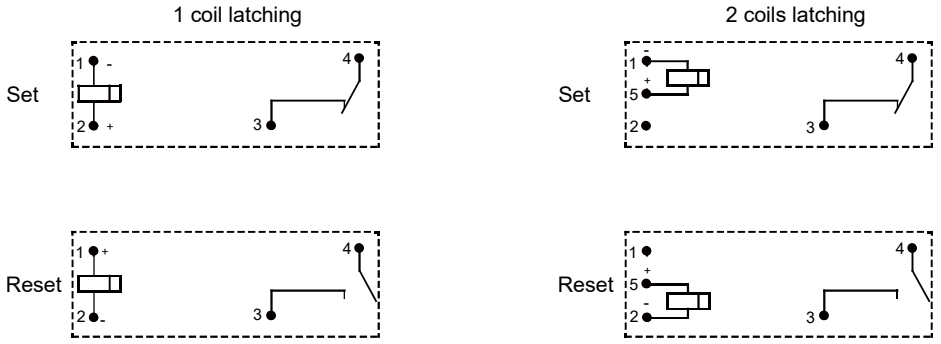


OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

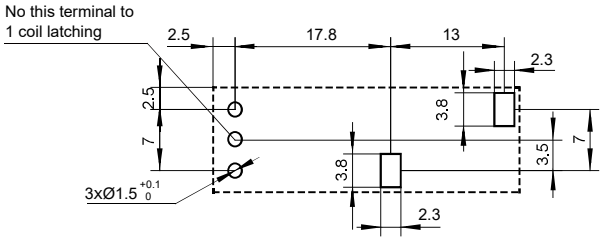
Wiring Diagram

(Bottom view)



PCB Layout

(Bottom view)



Dimensional tolerance is not marked for product boundary dimensions		Dimensional tolerance is not marked for PCB board
Outline Dimensions	Dimensional tolerance	±0.1
≤1	±0.2	
＞1~5	±0.3	
＞5	±0.4	

Remark: 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,tolerance should be ±0.4mm.

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

Notice: 1) Relay is on the “reset” status when being released from stock,with the consideration of shock risen from transit and relay mounting, relay would be changed to “set” or “reset” status,therefore,when application (connecting the power supply),please reset the relay to “set” or “reset” status on request.

2) In order to maintain “set” or “reset” status, energized voltage to coil should reach the rated voltage. Do not energize voltage to “set” coil and “reset” coil simultaneously. And also long energized time(more than 1 min)should be avoided.

3) Keep the product away from strong magnetic field during transportation, storage and application, to avoid change of set/reset voltage.

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.