HF11F MINIATURE HIGH POWER RELAY



File No.: E133481

Features

- 30A/415VAC contact switching capability
- Multiple contact forms:
  1 Form C, 2 Form C, 3 Form C, 1 Form Z,
  1 Form A, 2 Form A, 3 Form A, 1 Form X,
  1 Form B, 2 Form B, 3 Form B, 1 Form Y
- QC terminal
- Flange mounting, DIN-rail mounting and Top flange mounting available
- Impulse voltage up to 6kV(Between contact & coil)
- UL insulation system: Class F

RoHS compliant

CONTACT DATA

Contact arrangement[1)]	1Z, 2Z, 3Z, 1H, 2H, 3H, 1D, 2D, 3D, QZ, QH, QD
Contact resistance[2)]	50mΩ max.(at 6VDC 100mA)
Contact material	$AgSnO_2$
Contact gap	0.6mm min.
Contact rating (Res.load)	1Z, 2Z, 3Z, 1H, 2H, 3H, 1D, 2D, 3D: 25A 415VAC, 15A 28VDC QZ, QH, QD: 30A 415VAC,30A 28VDC
Max. switching voltage	415VAC
Max. switching current	30A
Max. switching power	12450VA 840W
Min. Capacity[3)]	5VDC 100mA
Mechanical endurance	5×10^6 OPS
Electrical endurance	415VAC Resistive load: 5×10^4 OPS (55℃) 28VDC Resistive load: 10×10^4 OPS (55℃)

Notes: 1) 3Z is same polarity.
2) The data shown above are initial values.
3) Min. contact load is reference value. Please perform the co-nfirmation test with the actual load before usage since refer-ence value may change according to switching frequencies, environmental conditions and expected life cycles.

COIL DATA at 23℃

Nominal Voltage VDC	Pick-up Voltage VDC max.	Drop-out Voltage VDC min.	Max. Voltage VDC	Coil Resistance Ω
12	9.6	1.2	13.2	100×(1±10%)
24	19.2	2.4	26.4	400×(1±10%)
110	88	11	121	8400×(1±10%)
220	176	22	242	33600×(1±10%)

Nominal Voltage VAC	Pick-up Voltage VAC max.	Drop-out Voltage VAC min.	Max. Voltage VAC	Coil Resistance Ω
12	9.6	3.6	13.2	17.7×(1±15%)
24	19.2	7.2	26.4	72×(1±15%)
120	96	36	132	1700×(1±15%)
240	192	72	264	7200×(1±15%)

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

CHARACTERISTICS

Insulation resistance		1000MΩ(500VDC)
Dielectric strength	Between coil & contacts	2200VAC 1min[3)], 4400VAC 1min[4)]
	Between open contacts	1600VAC 1min[3)], 2000VAC 1min[4)]
	Between contacts sets	2200VAC 1min[3)]
Impulse voltage (Between contact & coil)		6kV(1.2/50μs)
Operate time(at nomi. volt.)		20ms max.
Release time(at nomi. volt.)		20ms max.
Temperaturerise		100K max.(at 55℃)
Shock resistance	Functional	10g
	Destructive	100g
Vibration resistance		10Hz to 150Hz DA 1mm
Humidity		5% to 85%RH
Ambient temperature		-40℃ to 55℃
Termination		QC terminal
Unit weight		Approx.98g
Construction		Dust protected

Notes: 1) The data shown above are initial values.
2) Apply holding voltage to coil, which is 70% that of rated voltage.
3) Only for products with contact forms: 1Z, 2Z, 3Z, 1H, 2H, 3H, 1D, 2D, 3D.
4) Only for products with contact forms: QZ, QH, QD.

COIL

Coil power	DC type: Approx. 1.5W AC type: Approx. 2.5VA

SAFETY APPROVAL RATINGS

UL/CUL	1Z, 2Z, 3Z 1H, 2H, 3H 1D, 2D, 3D	25A 415VAC; 15A 28VDC
	QZ, QH, QD	30A 415VAC; 30A 28VDC

Notes: 1) All values unspecified are at 55℃.

ORDERING INFORMATION

	HF11F	/A	12	-1Z	2	D	T	F

Type	
Coil form	**A:** AC **NIL:** DC
Coil voltage	**DC:** 12, 24, 110, 220 **AC:** 12, 24, 120, 240
Contact arrangemen	**1Z:** 1 Form C **2Z:** 2 Form C **3Z:** 3 Form C **1H:** 1 Form A **2H:** 2 Form A **3H:** 3 Form A **1D:** 1 Form B **2D:** 2 Form B **3D:** 3 Form B **QZ:** 1 Form Z **QH:** 1 Form X **QD:** 1 Form Y
Terminals	**2:** QC terminal (4.75x0.5mm) **5:** QC terminal(6.35x0.8mm)
Installation method	**F:** Flange mounting **D:** DIN-rail mounting, Top flange mounting **NIL:** Standard
Contact material	**T:** $AgSnO_2$
Insulation standard	**F:** Class F

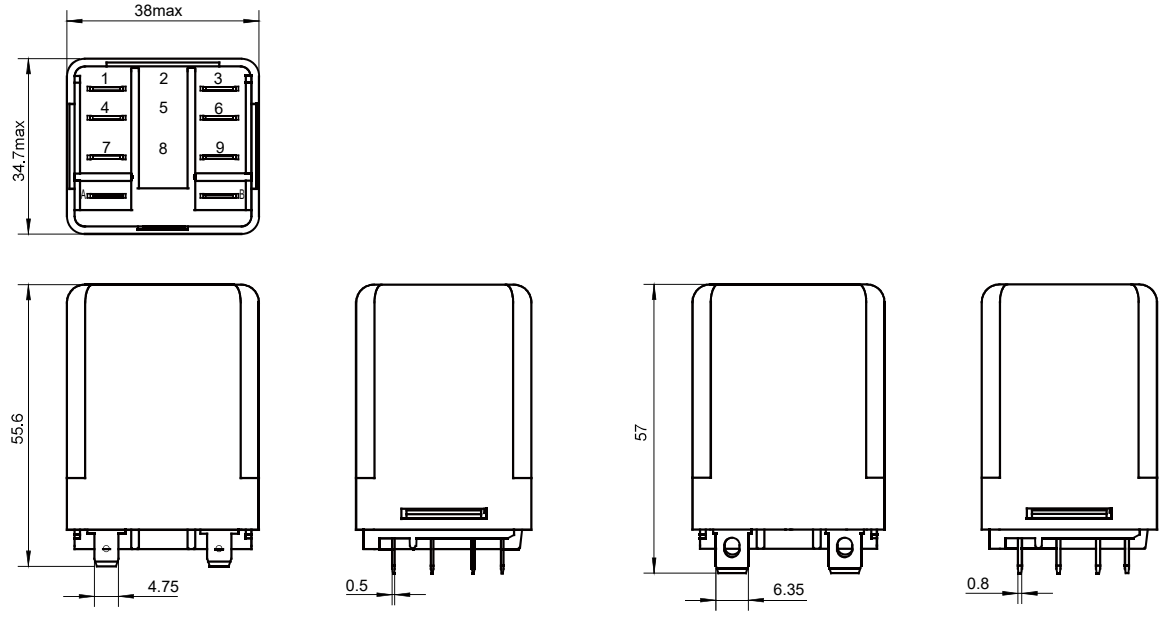
Notes: 1) The customer special requirement express as special code after evaluating by Hongfa.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

Outline Dimensions

Standard cover



"2" type terminal

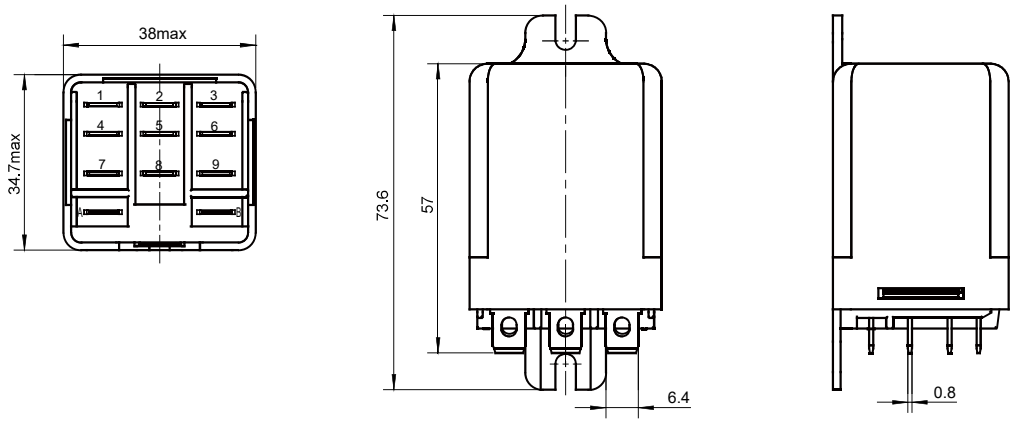
"5" type terminal

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

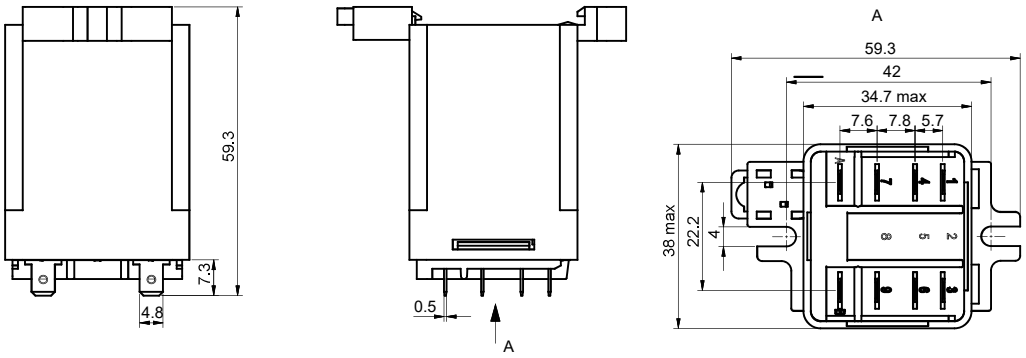
Unit：mm

Outline Dimensions

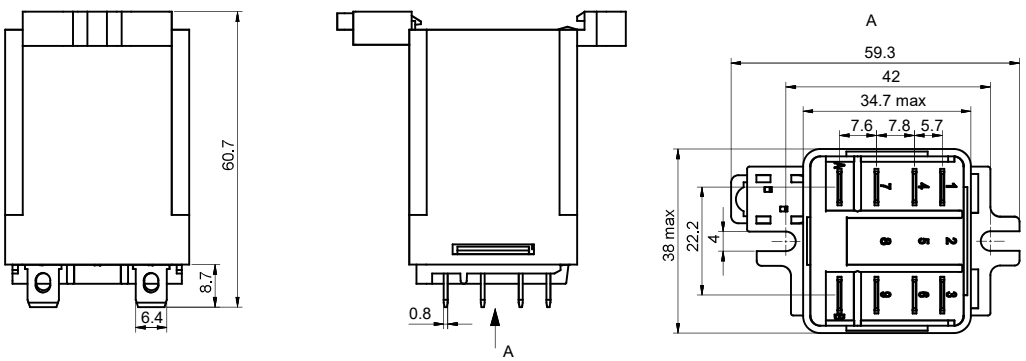
Flange cover



DIN-rail mounting, Top flange mounting



“2” type terminal



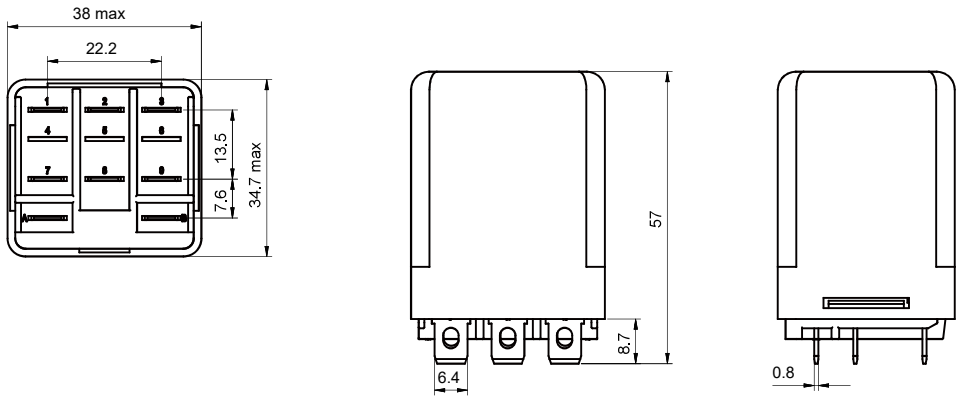
“5” type terminal

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

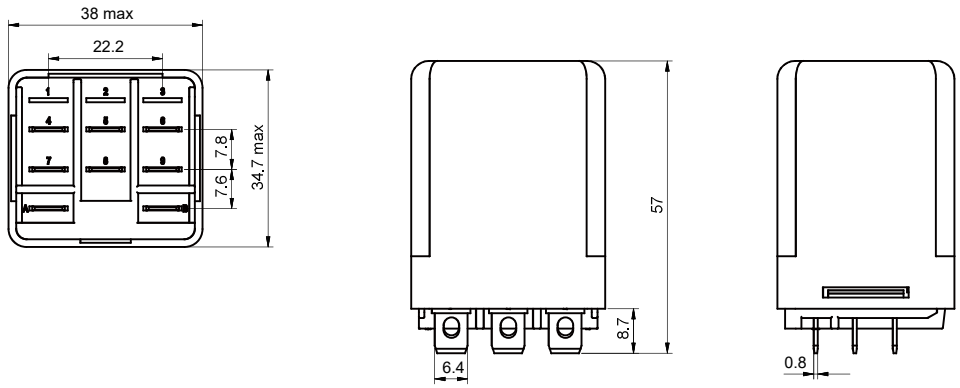
Unit：mm

Outline Dimensions

D type



H type

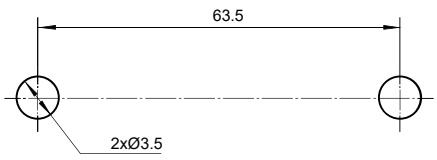


Notes: Terminal shown is Type 5; Type 2 terminal is optional.

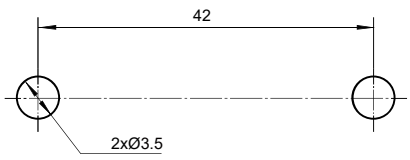
PCB Layout

(Bottom view)

Flange mounting & Standard



Top flange mounting



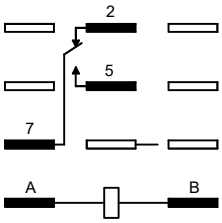
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit：mm

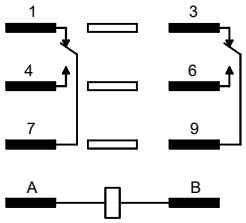
Wiring Diagram

（Bottom view）

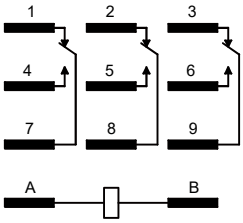
1Z



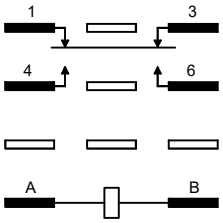
2Z



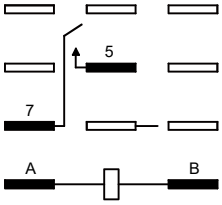
3Z



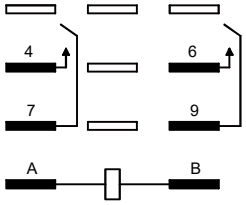
QZ



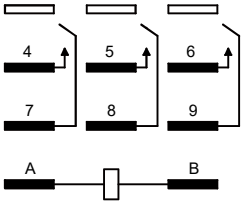
1H



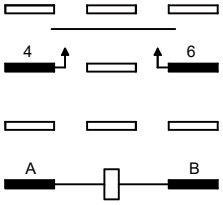
2H



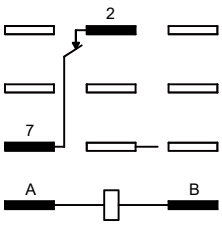
3H



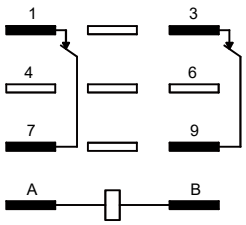
QH



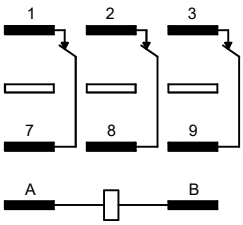
1D



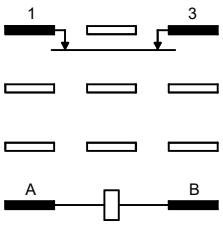
2D



3D



QD



Notes: 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.

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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