HFE19-90 MINIATURE HIGH POWER LATCHING RELAY

File No.: 40037408

File No.: CQC12002086394

Features

- 90A Latching relay
- Carrying 2400A peak current/10ms and contact won't welded (Type:445)
- 4kV dielectric strength (between coil and contact)
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (38.0 x 30.0 x 16.5) mm

CONTACT DATA

Contact arrangement	1A, 1B
Contact resistence	Typ.: 0.45mΩ max.(at 80A) 1)
Contact material	$AgSnO_2$
Contact rating (Res. load)	90A 250VAC
Max. switching voltage	250VAC
Max. switching current	90A
Max. switching power	22500VA
Mechanical endurance	1 x 10^5OPS

Notes: 1) Typical value: Sampling quantity for contact resistance shall not less than 20 pcs, take the average value from 5 continous measurements for each sample.

CHARACTERISTICS

Insulation resistance		1000MΩ (at 500VDC)
Dielectric strength	Between coil & contacts	4000VAC 1min
	Between open contacts	1500VAC 1min
Creepage distance		8mm
Set time (at nomi. volt.)		20ms max.
Reset time (at nomi. volt.)		20ms max.
Shock resistance	Functional	98m/s²
	Destructive	980m/s²
Vibration resistance		10Hz to 55Hz 1.5mm DA
Humidity		5% to 85% RH
Ambient temperature		-40˚C to 70˚C
Termination		QC
Unit weight		Approx. 50g
Construction		Dust protected

Notes: The data shown above are initial values.

COIL

Coil power	Single coil latching: Approx. 1.5W Double coils latching: Approx. 3.0W

COIL DATA at 23˚C

Single coil latching

Nominal Voltage VDC	Set / Reset Voltage VDC max.	Pulse Duration ms min.	Coil Resistance x (1±10%) Ω
5	3.5	100	16
6	4.2	100	24
9	6.3	100	54
12	8.4	100	96
24	16.8	100	384
48	33.6	100	1536

Double coils latching

Nominal Voltage VDC	Set / Reset Voltage VDC max.	Pulse Duration ms min.	Coil Resistance x (1±10%) Ω
5	3.5	100	8+8
6	4.2	100	12+12
9	6.3	100	27+27
12	8.4	100	48+48
24	16.8	100	192+192
48	33.6	100	768+768

ELECTRICAL ENDURANCE

UC Class	Voltage (Uc)	Current (Ic)	Power Factor	Close Open time (s)	Electrical endurance (OPS)	
445 (UC1)	220VAC	60A	COSØ=1	10:20	3000	Total:6000
		10A	COSØ=0.4		3000	
Nil	253VAC	60A	COSØ=1		5000	Total:10000
			COSØ=0.5		5000	

Notes: 1) Electrical endurance meet IEC62055-31 test requirement,do the inductive load test after the resistive load test.
2) Only some typical ratings of UC are listed above, if more special ratings required, please contact us.

ORDERING INFORMATION

	HFE19	-90/	12	D	T	2	1	-R	(XXX)
Type									
Contact rating	**90:** 90A								
Coil voltage	5, 6, 9, 12, 24, 48VDC								
Contact form [1]	**D:** 1 Form B **H:** 1 Form A								
Contact material	**T:** $AgSnO_2$								
Coil angle form	**2:** Distance 5mm; No bowleg **4:** Distance 5mm; L-bowleg								
Sort	**1:** Single coil latching **2:** Double coils latching								
Polarity	**R:** Negative polarity **Nil:** Positive polarity								
Special code [2) 4)]	**XXX:** Customer special requirement **Nil:** Standard(See electrical endurance)								

Notes: 1) H means that relay is on the "reset" status when delivery; D means that relay is on the "set" status when delivery. If no speical required by customer, we will keep the relay on the "set" status when delivery.

2) UC1: Meet the UC1 requirements on IEC62055-31;Relays are able to pass the 30Imax short circuit.

3) We can make special design according to customer's requirement,Please see the typical design.

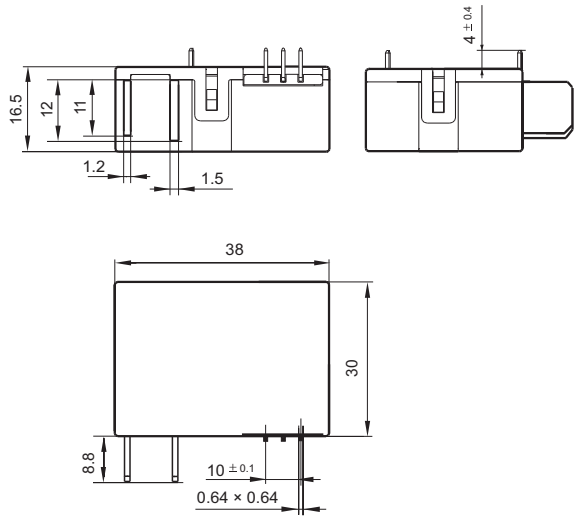
4) The customer special requirement express as special code after evaluating by Hongfa. e.g. (459): Coil pins with reverse eduction way; e.g. (445): UC1, Carrying 2400A peak current(10ms) and contact won't welded.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

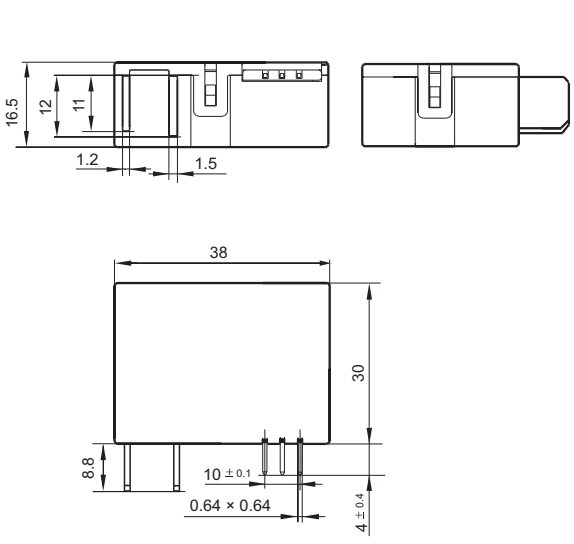
Unit: mm

Outline Dimensions

L-bowleg



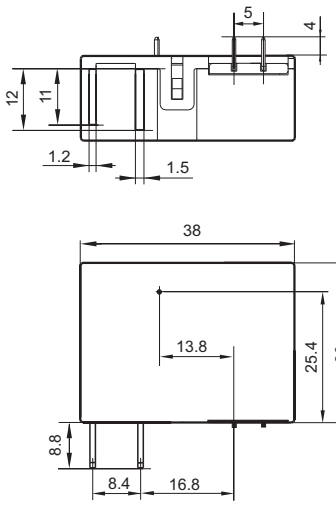
No bowleg



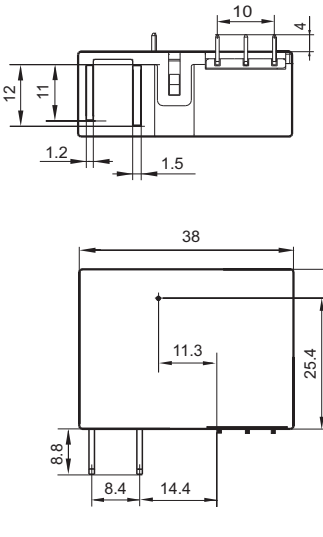
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

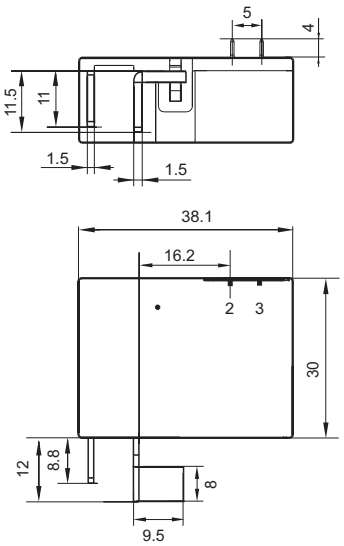
1 coil latching



2 coils latching

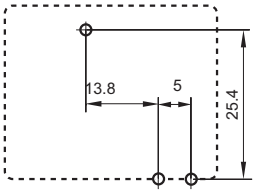


(459): Coil pins with reverse eduction way

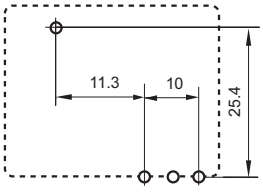


PCB Layout (Bottom view)

Single coil latching

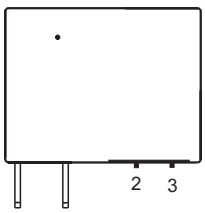


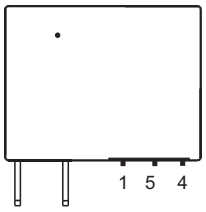
Double coils latching



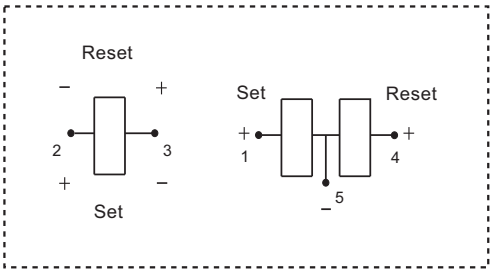
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.
2) The tolerance without indicating for PCB layout is always ±0.1mm.

Wiring Diagram (Bottom view)

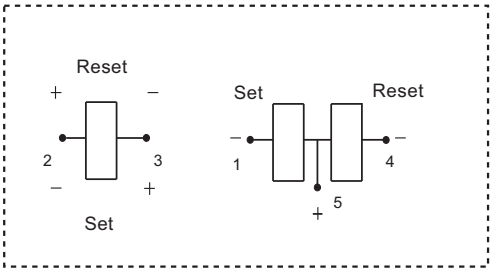




Positive polarity



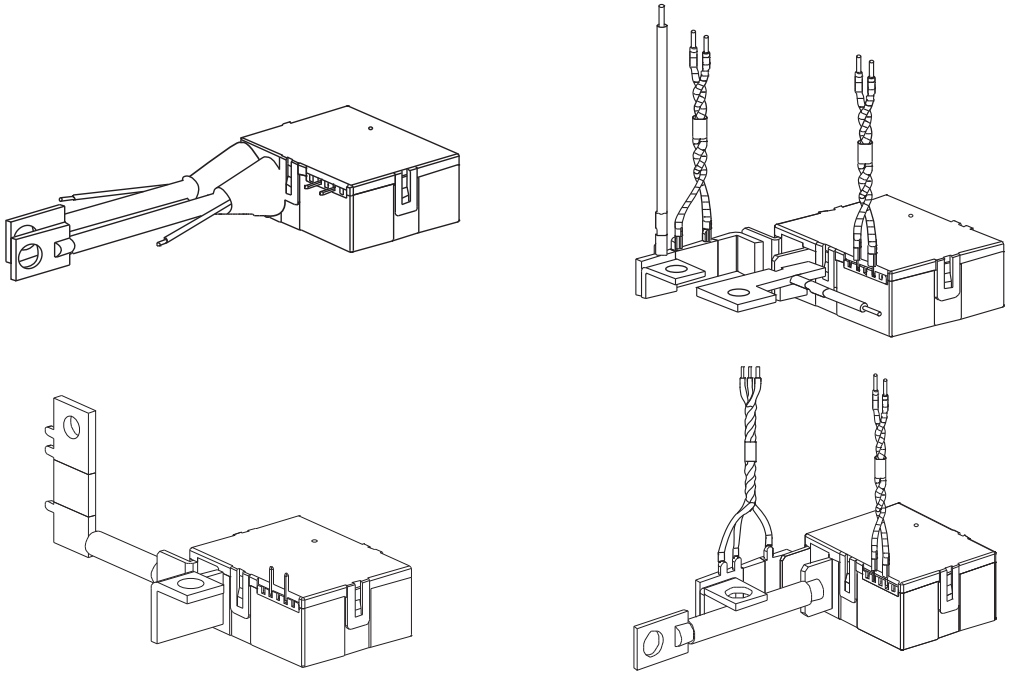
Negative polarity



OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

Typical Design



Remark: The drawing shown above are typical design,we can make special design according to customer's requirement. Please provide us with the drawing.

Notice:

1. Relay is on the “reset” or "set" 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, impulse width should be 5 times more than “set” or “reset” time. Do not energize voltage to “set” coil and “reset” coil simultaneously. And also long energized time (more than 1 min) should be avoided.
3. The terminals of relay without twisted copper wire can not be tin-soldered, can not be moved willfully.
4. Relays used for metering measuring applications are usually made with dust proof structure, while most relays could be made specially per customer's specific requirements.No longer than 6 months' storage time is recommended for this kind of relay, and please pay attention to the storage environment. To ensure contact reliability, we will keep contact status be closed when delivery if no special required by customer.