

JE9 (HF8509)

HIGH POWER LATCHING RELAY



File No.:E133481



File No.:CQC02001001950



Features

- 60A switching capability
- 4kV dielectric strength (between coil and contacts)
- Heavy load up to 15000VA
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (38.0 x 30.0 x 16.0) mm

CONTACT DATA

| | | | |
|----------------------------|---|------------|------------|
| Contact arrangement | 1A | | |
| Voltage drop ²⁾ | Typ.: 100mV (at 10A) | | |
| | Max.: 250mV (at 10A) | | |
| Contact material | AgSnO ₂ , AgCdO | | |
| Contact rating (Res. load) | 60A 250VAC | 50A 250VAC | 40A 250VAC |
| | 5000 OPS | 10000 OPS | 100000 OPS |
| Max. switching voltage | 250VAC | | |
| Max. switching current | 60A | | |
| Max. switching power | 15000VA | | |
| Mechanical endurance | 1 x 10 ⁶ OPS | | |
| Electrical endurance | 1 x 10 ⁵ OPS (at 40A 250VAC) | | |

CHARACTERISTICS

| | | |
|-------------------------------|----------------------------|-----------------------------|
| Insulation resistance | 1000MΩ (at 500VDC) | |
| Dielectric strength | Between coil & contacts | 4000VAC 1min |
| | Between open contacts | 1500VAC 1min |
| Creepage distance | 8mm | |
| Operate time (at nomi. volt.) | 20ms max. | |
| Release time (at nomi. volt.) | 20ms max. | |
| Shock resistance | Functional | 100m/s ² (10g) |
| | Destructive | 1000m/s ² (100g) |
| Vibration resistance | 10Hz to 55Hz 1.5mm DA | |
| Humidity | 98% RH, 40°C | |
| Ambient temperature | -40°C to 70°C | |
| Termination | PCB & QC | |
| Unit weight | Approx. 33g | |
| Construction | Wash tight, Dust protected | |

COIL

Coil power Single Coil: 1.0W; Double Coil: 2.0W

COIL DATA ³⁾

| Nominal Voltage VDC | Pick-up Voltage VDC | Pulse Duration ms | Coil Resistance Ω | |
|---------------------|---------------------|-------------------|-------------------|--------------------|
| | | | Single Coil | Double Coils |
| 5 | 3.5 | 50 | 24 x (1±10%) | 2 x 12 x (1±10%) |
| 6 | 4.2 | 50 | 35 x (1±10%) | 2 x 17.5 x (1±10%) |
| 9 | 6.3 | 50 | 80 x (1±10%) | 2 x 40 x (1±10%) |
| 12 | 8.4 | 50 | 145 x (1±10%) | 2 x 72 x (1±10%) |
| 24 | 16.8 | 50 | 575 x (1±10%) | 2 x 285 x (1±10%) |
| 48 | 33.6 | 50 | 2270 x (1±10%) | 2 x 1135 x (1±10%) |

- Notes:** 1) The data shown above are initial values.
 2) Equivalent to the max. initial contact resistance is 50mΩ (at 1A 24VDC), and measured when coil is energized with 100% nominal voltage at 25°C.
 3) When requiring other nominal voltage, special order allowed.

SAFETY APPROVAL RATINGS

| | | |
|--------|--------------------|--|
| UL&CUR | AgCdO | 40A 250VAC at 70°C 50A 250VAC at 70°C 60A 250VAC at 70°C |
| | AgSnO ₂ | 40A 250VAC at 70°C 50A 250VAC at 70°C 60A 250VAC at 70°C |

Notes: Only some typical ratings are listed above. If more details are required, please contact us.



HONGFA RELAY

ISO9001、ISO/TS16949、ISO14001、OHSAS18001 CERTIFIED

2007 Rev. 2.00

ORDERING INFORMATION

| | | | | | | | | | | | | | |
|---|---|------------|--|-----------|------------|-----------|-----------|----------|----------|-----------|----------|------------|--------------|
| | | JE9 | | -3 | I / | 12 | -H | S | T | -R | A | X-X | (XXX) |
| Type ¹⁾ | JE9 HF8509 (Old type) | | | | | | | | | | | | |
| Version (See the following) | 1: 1 type, PCB terminals 2: 2 type, PCB terminals 3: Double Coil | | | | | | | | | | | | |
| Load type ²⁾ | I: Inrush Nil: Standard | | | | | | | | | | | | |
| Coil voltage | 5, 6, 9, 12, 24, 48VDC | | | | | | | | | | | | |
| Contact form | H: 1 Form A | | | | | | | | | | | | |
| Construction ³⁾ | S: Wash tight Nil: Dust protected | | | | | | | | | | | | |
| Contact material | T: AgSnO ₂ Nil: AgCdO | | | | | | | | | | | | |
| Polarity | R1 to R5: Negative polarity (See diagram wiring below) Nil: Positive polarity | | | | | | | | | | | | |
| Solder direction of twisted wire | A to I: See below direction of solder wire Nil: Without solder wire | | | | | | | | | | | | |
| Twisted copper wire length | First X: length of left side Second X: length of right side | | | | | | | | | | | | |
| Customer special code ⁴⁾ (Only for special requirements) | e.g. (551) stands for RoHS compliant (Cadmium containing contacts) (555) stands for RoHS compliant (Cadmium-free contacts) | | | | | | | | | | | | |

- Notes:**
- 1) We have now gradually updated our ordering information. We suggest new type should be selected.
 - 2) For high inrush load with the steady-state current of less than 40A, please choose type I.
 - 3) Under the ambience with dangerous gas like H₂S, SO₂ or NO₂, wash tight type is recommended; please test the relay in real applications. If the ambience allows, dust protected is preferentially recommended.
 - 4) JE9 is an environmental friendly product. Please mark a special code (555) or (551) when ordering. (551) stands RoHS compliant with Cadmium contact; (555) stands for RoHS compliant with Cadmium-free contact.

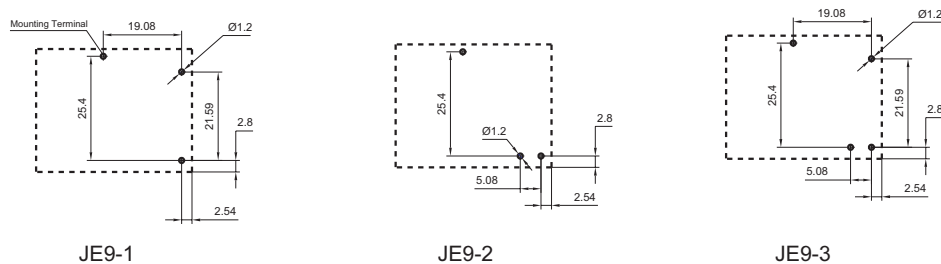
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

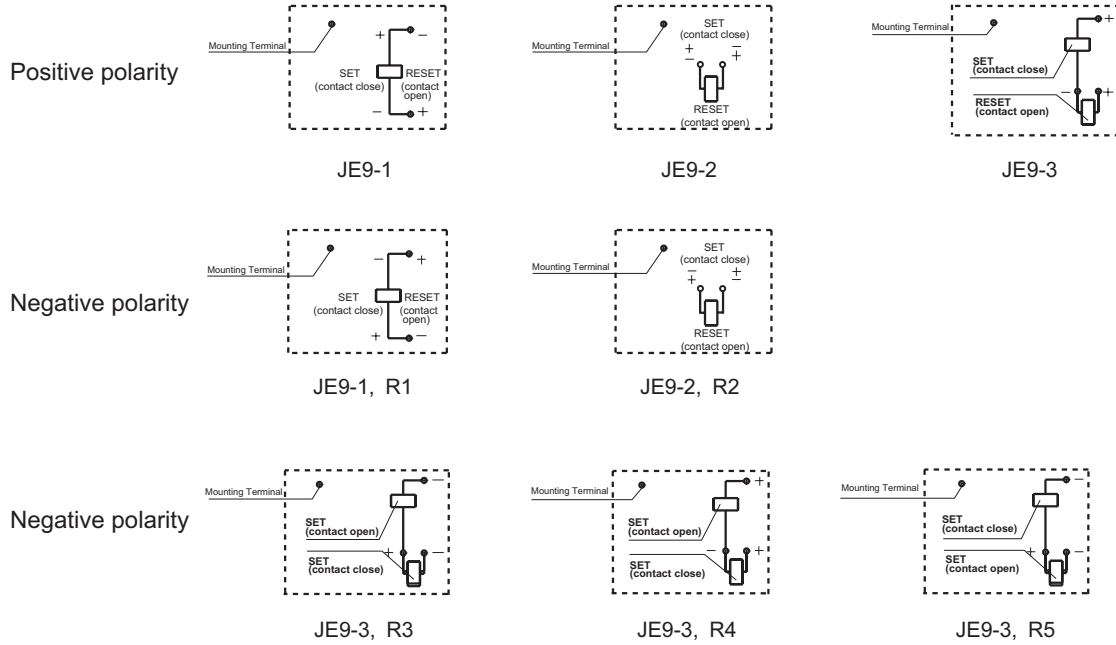
Outline Dimensions



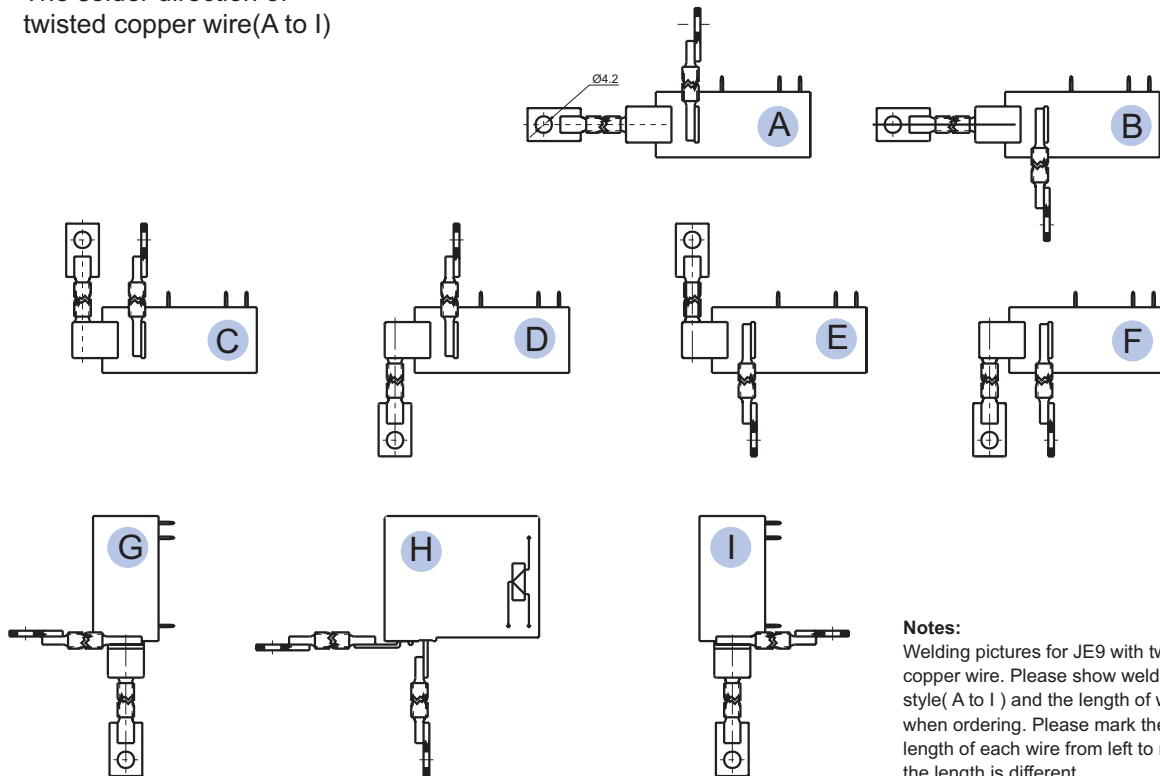
PCB Layout (Bottom view)



Wiring Diagram (Bottom view)



The solder direction of twisted copper wire(A to I)

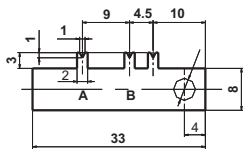


Notes:

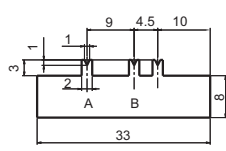
Welding pictures for JE9 with twisting copper wire. Please show welding style(A to I) and the length of wires when ordering. Please mark the length of each wire from left to right if the length is different.

Style of manganin shunt

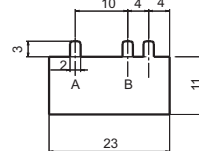
Notes: Style F1 to F44, the thickness of shunt: h=1 or h=2, R: resistance of shunt between A-B ($\mu\Omega, \pm 10\%$)



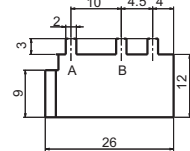
F1(h=1,R=500), F2(h=2,R=250)



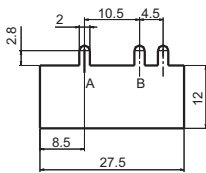
F3(h=1,R=500), F4(h=2,R=250)



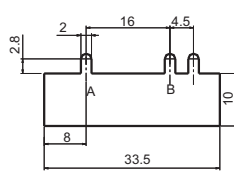
F5(h=1,R=400), F6(h=2,R=200)



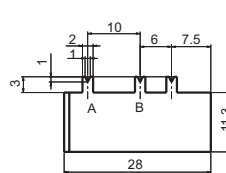
F7(h=1,R=360), F8(h=2,R=180)



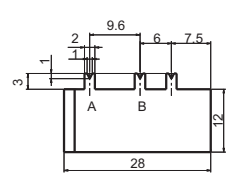
F9(h=1,R=370), F10(h=2,R=185)



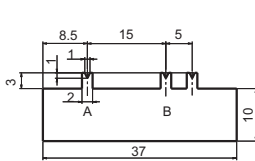
F11(h=1,R=700), F12(h=2,R=350)



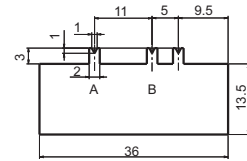
F13(h=1,R=390), F14(h=2,R=195)



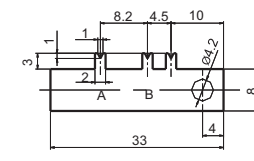
F15(h=1,R=350), F16(h=2,R=175)



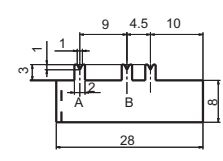
F17(h=1,R=660), F18(h=2,R=330)



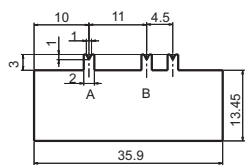
F19(h=1,R=360), F20(h=2,R=180)



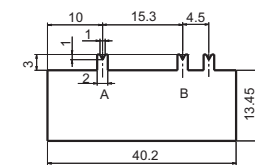
F21(h=1,R=450), F22(h=2,R=225)



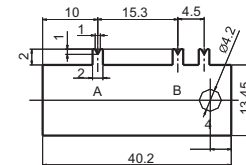
F23(h=1,R=500), F24(h=2,R=250)



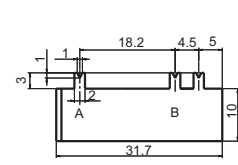
F25(h=1,R=380), F26(h=2,R=190)



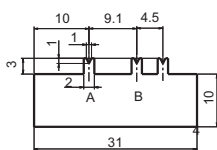
F27(h=1,R=500), F28(h=2,R=250)



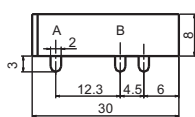
F29(h=1,R=500), F30(h=2,R=250)



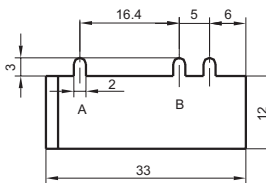
F31(h=1,R=800), F32(h=2,R=400)



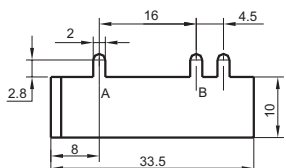
F33(h=1,R=400), F34(h=2,R=200)



F35(h=1,R=600), F36(h=2,R=300)



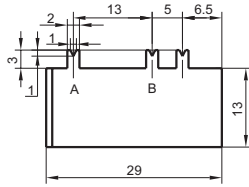
F37(h=1,R=600), F38(h=2,R=300)



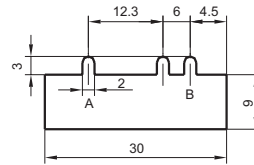
F39(h=1,R=700), F40(h=2,R=350)

Style of manganin shunt

Notes: Style F1 to F44, the thickness of shunt: h=1 or h=2, R: resistance of shunt between A-B ($\mu\Omega, \pm 10\%$)

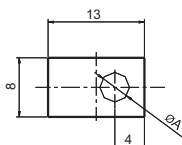


F41(h=1,R=440), **F42**(h=2,R=220)

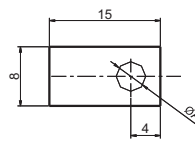


F43(h=1,R=600), **F44**(h=2,R=300)

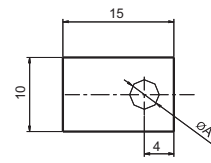
Connector style



Style 056: A= $\varnothing 4.2$
Style 056-1: A= $\varnothing 5.2$

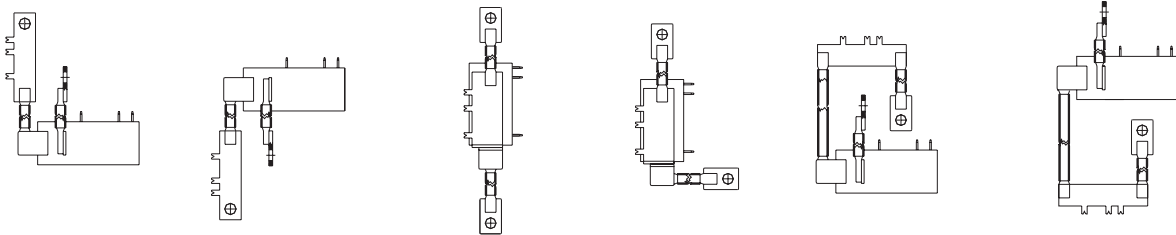


Style 076: A= $\varnothing 4.2$
Style 076-1: A= $\varnothing 5.2$



Style 077: A= $\varnothing 4.2$
Style 077-1: A= $\varnothing 5.2$
Style 077-2: A= $\varnothing 6.2$

Typical shunt connection ways



Notes: We can make special connection according to customer's requirement.
Please provide us with the drawing, and shunt specification and connector's specification.

Remark: 1) In case of no tolerance shown in outline dimension: outline dimension $\leq 1\text{mm}$, tolerance should be $\pm 0.2\text{mm}$; outline dimension $> 1\text{mm}$ and $\leq 5\text{mm}$, tolerance should be $\pm 0.3\text{mm}$; outline dimension $> 5\text{mm}$, tolerance should be $\pm 0.4\text{mm}$.
2) The tolerance without indicating for PCB layout is always $\pm 0.1\text{mm}$.

Notice

- Relay is on the "set" status when being released from stock, with the consideration of shock arisen from transit and relay mounting, relay would be changed to "reset" status, therefore, when application (connecting the power supply), please reset the relay to "set" or "reset" status on request.
- 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.
- The terminals of relay without twisted copper wire can not be tin-soldered, can not be moved willfully, more over two terminals can not be fixed at the same time.

Disclaimer

This datasheet is for the customers' reference. All the specifications are 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.