

## ● Features

- Standard 30A, maximum 40A switching capability
- 2.5kV dielectric strength (between coil and contacts)
- 1 Form A, 1 Form B and 1 Form C configurations
- UL insulation system: Class F available
- Environmental friendly product (RoHS compliant)
- Dimensions: 50.2 x 27 x 28 mm,  
50.2 x 27 x 20 mm



## ● Application

- Air Conditioner / Air Compressor / Home appliances / Heating controller /  
Automotive application / Refrigerator / Fan, etc.

## ● Contact Data

|                        |                                           |                                                        |
|------------------------|-------------------------------------------|--------------------------------------------------------|
| Contact Arrangement    | 1A, 1B, 1C                                |                                                        |
| Contact Material       | Ag Alloy                                  |                                                        |
| Contact Rating         | 40A Type:                                 | 40A 240VAC/277VAC/30VDC<br>1HP/1.5HP 240VAC TV-5 TV-15 |
|                        | 30A Type:                                 | 30A/20A 240VAC/277VAC/30VDC<br>1/2HP/1HP 240VAC TV-5   |
| Max. Switching Power   | 11000VA / 1200W                           |                                                        |
| Max. Switching Voltage | 277VAC / 30VDC                            |                                                        |
| Max. Switching Current | 40A                                       |                                                        |
| Contact Resistance     | $\leq 50\text{m}\Omega$ (1A, 24VDC)       |                                                        |
| Electrical Endurance   | 40A: $5 \times 10^4$ 30A: $1 \times 10^5$ |                                                        |
| Mechanical Endurance   | $1 \times 10^7$                           |                                                        |

## ● Coil Parameter

| Coil Voltage (VDC) |      | Coil Resistance ( $\Omega \pm 10\%$ ) | Pickup Voltage(max) (VDC) | Release Voltage(min) (VDC) | Coil Power Consumption (W) |
|--------------------|------|---------------------------------------|---------------------------|----------------------------|----------------------------|
| Rated              | Max. |                                       |                           |                            |                            |
| 5                  | 6.5  | 28                                    | 3.75                      | 0.5                        | 0.90                       |
| 6                  | 7.8  | 40                                    | 4.50                      | 0.6                        |                            |
| 9                  | 11.7 | 90                                    | 6.75                      | 0.9                        |                            |
| 12                 | 15.6 | 160                                   | 9.00                      | 1.2                        |                            |
| 15                 | 19.5 | 250                                   | 11.25                     | 1.5                        |                            |
| 18                 | 23.4 | 360                                   | 13.50                     | 1.8                        |                            |
| 24                 | 31.2 | 640                                   | 18.00                     | 2.4                        |                            |
| 48                 | 62.4 | 2560(1 $\pm$ 15%)                     | 36.00                     | 4.8                        |                            |
| 110                | 143  | 13445(1 $\pm$ 15%)                    | 82.50                     | 11.0                       |                            |

| Coil Voltage (VAC) |      | Coil Resistance ( $\Omega \pm 10\%$ ) | Pickup Voltage(max) (VDC) | Release Voltage(min) (VDC) | Coil Power Consumption (VA) |
|--------------------|------|---------------------------------------|---------------------------|----------------------------|-----------------------------|
| Rated              | Max. |                                       |                           |                            |                             |
| 24                 | 31.2 | 120                                   | 19.2                      | 7.0                        | 2                           |
| 110                | 143  | 2360                                  | 88.0                      | 33.0                       |                             |
| 120                | 156  | 3040                                  | 96.0                      | 36.0                       |                             |
| 220                | 286  | 13490                                 | 176.0                     | 66.0                       |                             |
| 240                | 312  | 13490                                 | 192.0                     | 72.0                       |                             |
| 277                | 360  | 15000                                 | 221.6                     | 83.1                       |                             |

## ● Operation Condition

|                       |                          |                                |
|-----------------------|--------------------------|--------------------------------|
| Insulation Resistance |                          | 1000M $\Omega$ min (at 500VDC) |
| Dielectric Strength   | Between Contacts         | 1500VAC, 50/60Hz 1min          |
|                       | Between Coil and Contact | 2500VAC, 50/60Hz 1min          |

# High Current Power Relay I HA4



RELAY / ISO9001 / IATF16949 CERTIFIED

## ● Operation Condition

|                      |            |                                |
|----------------------|------------|--------------------------------|
| Shock                | Functional | 98m/s <sup>2</sup>             |
| Resistance           | Endurance  | 980m/s <sup>2</sup>            |
| Vibration Resistance |            | 10~55Hz double amplitude 1.5mm |
| Ambient Temperature  |            | -55 ~ +85℃                     |
| Operate Time         |            | ≤ 15ms                         |
| Release Time         |            | ≤ 10ms                         |
| Relative Humidity    |            | 5%~85%                         |
| Weight               |            | Approx. 34g                    |

## ● Ordering Information

|                            | HA4                                                                             | L | -12D | -A | 30 | -S | (XXX) |
|----------------------------|---------------------------------------------------------------------------------|---|------|----|----|----|-------|
| <b>Model</b>               |                                                                                 |   |      |    |    |    |       |
| <b>Termination</b>         | <b>Nil:</b> Standard (Height: 28.5mm)<br><b>L:</b> Low Profile (Height: 20.5mm) |   |      |    |    |    |       |
| <b>Coil Voltage</b>        | 5, 6, 9, 12, 15, 18, 24, 48, 110VDC<br>24, 110, 120, 220, 240, 277VAC           |   |      |    |    |    |       |
| <b>Contact Arrangement</b> | <b>A:</b> 1 Form A <b>B:</b> 1 Form B <b>C:</b> 1 Form C                        |   |      |    |    |    |       |
| <b>Contact Current</b>     | <b>Nil:</b> 40A <b>30:</b> 30A                                                  |   |      |    |    |    |       |
| <b>Construction</b>        | <b>Nil:</b> Flux tight <b>S:</b> Sealed                                         |   |      |    |    |    |       |
| <b>Special Code</b>        | <b>Nil:</b> Standard <b>XXX:</b> Customer special requirement                   |   |      |    |    |    |       |

Notes: 1) We recommend flux tight types for a clean environment (free from contaminations like H2S, SO2, NO2, dust, etc.). We suggest to choose plastic sealed types and validate it in real application for an unclean environment (with contaminations like H2S, SO2, NO2, dust, etc.).

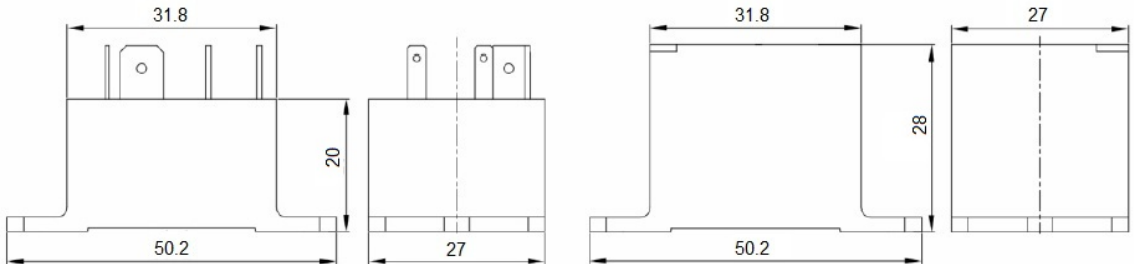
2) Please inform us if water cleaning or surface treatment will involve after the relays installed on PCB.

3) Please inform us if dielectric strength between coil and contact exceed 2500VAC.

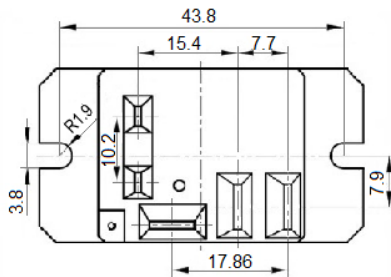
4) Avoid using relays under strong magnetic or shock conditions, or technical ratings will change.

## ● Dimensions (UNIT: mm)

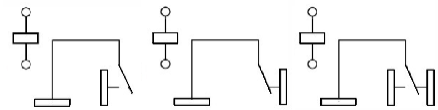
### Outline Dimensions



### Mounting (Bottom views)



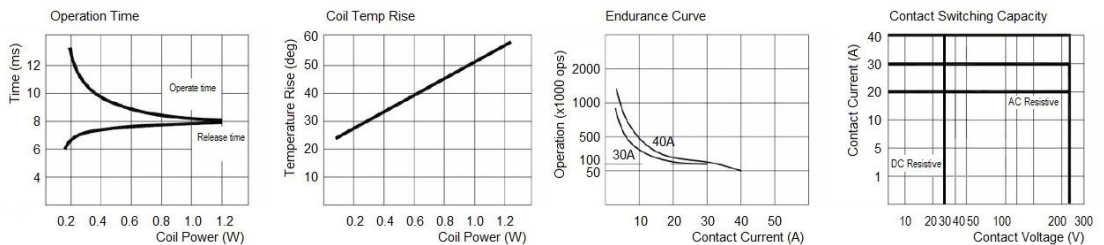
### Wiring Diagram (Bottom views)



1 Form A 1 Form B 1 Form C

- Notes: 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  $\pm 0.1\text{mm}$ .

## ● Engineering Data



Note: Specification and dimensions in this catalogue are for reference only and subject to change without notice.