HFE62 SUBMINIATURE INTERMEDIATE POWER RELAY

c UL us
File No.: E133481

TÜV
FILE NO.:B0532860032

Features

- High switching capacity
  1A, 1B: 10A 250VAC/30VDC;
- 4kV dielectric strength (between coil & contacts)
- 1 Form A, 1 Form B, 2 Form A, 2 Form B and 1A + 1B contact arrangement
- Monostable and bistable types available
- Suffix (803): TV5 compliant

RoHS compliant

CONTACT DATA

Contact arrangement	1A, 1B	2A, 2B, 1A+1B
Contact resistance 1)	2) gold-plated: ≤30mΩ(1A 6VDC) Non gold-plated: ≤50mΩ(1A 6VDC)	
Contact material	$AgSnO_2$	
Contact rating	10A 250VAC, 10 x 10^4ops(Res. load) 400W 220VAC, 3 x 10^4ops(led)	8A 250VAC, 10 x 10^4ops (Res. load)
Max. switching voltage	380VAC/240VDC	
Max. switching current	10A	8A
Max. switching power	2500W	2000W
Mechanical endurance	1 x10^7ops	
Electrical endurance	See "contact rating"	

Notes: 1) The data shown above are initial values.
2) 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(500VDC)
Dielectric strength	Between coil & contacts	4000VAC 1min
	Between Contact sets	4000VAC 1min
	Between open contacts	1000VAC (50/60 Hz 1min)
Operate time		≤6ms
Release time		≤6ms
Vibration resistance		10Hz~55Hz 1.5mm DA
Shock resistance	Functional	98m/s²
	Destructive	980m/s²
Humidity		5% ~85% RH
Ambient temperature		-40°C~85°C
Termination	Coil terminal	PCB
	Load terminal	PCB
Unit weight		Approx.6g
Construction		Plastic sealed, Flux proofed

Notes: The data shown above are initial values.

COIL

Rated power	Monostable	Approx. 280mW
	Single coils latching	Approx. 200mW
	Double coils latching	Approx. 280mW

COIL DATA 23°C

Single side stable

Nominal Voltage VDC	Pick-up Voltage 1) VDC	Drop-out Voltage 1) VDC	Coil Resistance x (1±10%) Ω
3	≤2.4	≥0.3	32.1
5	≤4	≥0.5	89.3
6	≤4.8	≥0.6	128.6
9	≤7.2	≥0.9	289.3
12	≤9.6	≥1.2	514.3
24	≤19.2	≥2.4	2057

Single coil latching

Nominal Voltage VDC	Set / Reset Voltage 1) VDC	Pulse Duration ms	Coil Resistance x (1±10%) Ω
3	≤2.4	≥50	45
5	≤4	≥50	125
6	≤4.8	≥50	180
9	≤7.2	≥50	405
12	≤9.6	≥50	720
24	≤19.2	≥50	2880

Double coils latching

Nominal Voltage VDC	Set / Reset Voltage 1) VDC	Pulse Duration ms	Coil Resistance x (1±10%) Ω
3	≤2.4	≥50	32.1+32.1
5	≤4	≥50	89.3+89.3
6	≤4.8	≥50	128.6+128.6
9	≤7.2	≥50	289.3+289.3
12	≤9.6	≥50	514.3+514.3
24	≤19.2	≥50	2057+2057

Notes: 1) The data shown above are initial values.
2) Above driving voltage only apply to check relay normal function without load. When normal use with load, use (1~2)Ue for latching relay set/reset volage, use (1~1.3)Ue for set voltage and 0V for release voltage for monostable relay.

SAFETY APPROVAL RATINGS

TUV	1A,1B	Resistive load: 10A 250VAC (CosΦ1.0) 85°C Inductive load: 5A 250VAC (CosΦ0.4) 85°C Resistive load: 10A 30VDC (0ms) 85°C
	2A,1A+1B,2B	Resistive load: 8A 250VAC (CosΦ1.0) 85°C Inductive load: 4A 250VAC (CosΦ0.4) 85°C Resistive load: 8A 30VDC (0ms) 85°C
UL	1A,1B	Resistive load: 10A 250VAC 85°C Resistive load: 10A 30VDC 85°C
	2A,1A+1B,2B	Resistive load: 8A 250VAC 85°C Resistive load: 8A 30VDC 85°C
	1A(803)	TV-5 40°C

ORDERING INFORMATION

HFE62 / 12 -1H S T G - L1 - R (XXX)

Type

Coil voltage 3,5,6,9,12,24 VDC

Contact arrangement 1)
1H: 1 Form A **2H:** 2 Form A
1D: 1 Form B(only for latching relay)
2D: 2 Form B(only for latching relay)
1HD: 1A + 1B

Construction 2) **S:** Plastic sealed **Nil:** Flux proofed

Contact material 3) **T:** $AgSnO_2$

Contact plating **G:** Gold plated **Nil:** Non gold plated

Coil type **L1:** Single coil latching **L2:** Double coils latching **Nil:** Monostable

Polarity **R:** Reverse polarity **Nil:** Standard polarity

Special code 4)5) **XXX:** Customer special requirement

Notes: 1) 1H, 2H means that relay is on the "reset" status when delivery; 1D, 2D means that relay is on the "set" status when delivery.

2) Under the environment with harmful gas like H_2S, SO_2 or NO_2, plastic sealed type is recommended; Please test the relay in real applications.If the water cleaning is not required, flux proofed type is preferentially recommended. If water cleaning or surface treatment is required after assembling relay on print circuit board, please contact us to confirm the suitable soldering conditions and specifications.

3) For the application with inrush current conditions, such as lamp load, motor load, capacitive load, coil load, etc., flux proofed type with non gold plated $AgSnO_2$ contact is recommended.

4) Please make confirmation with our engineers before selection if any inconformity between application conditions and our specifications.

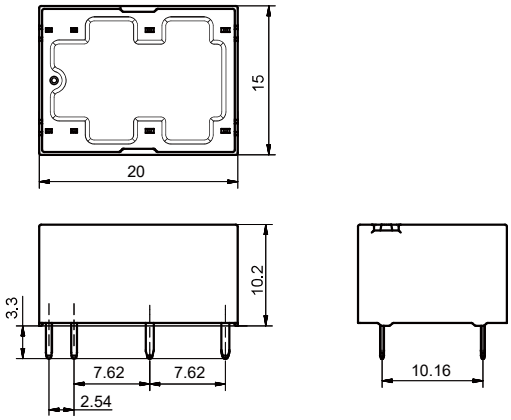
5) The customer special requirement express as special code after evaluating by Hongfa, The special code and its meaning are as follows.

Special code	Meaning
(412)	Single coil power(latching) (1A,2A,1A+1B): 0.3W.
	Dual coil power(latching) (1A,2A,1A+1B): 0.42W.
(421)	Single coil power(latching): 1W, Dual coil power(latching): 2W.
(803)	Single coil power(latching): 0.4W, Dual coil power(latching, monostable): 0.8W, TV5 compliant.
(A87)	Coil power (monostable) (1A,2A,1A+1B): 0.42W.
(359)	Lamp load.

OUTLINE DIMENSIONS AND WIRING DIAGRAM

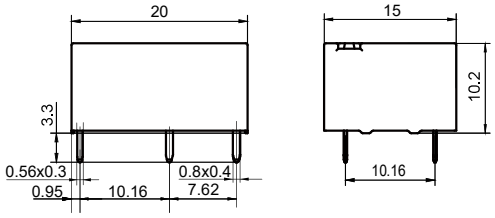
Unit: mm

Outline Dimensions

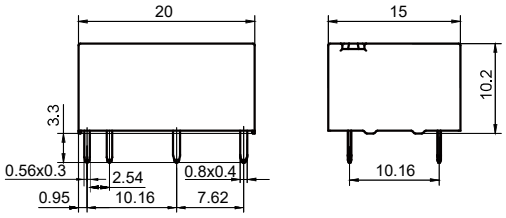


Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be±0.2mm; outline dimension ＞1mm and ≤5mm, tolerance should be±0.3mm; outline dimension ＞5mm, tolerance should be ±0.4mm.

Monostable & 1 coil latching



2 coils latching

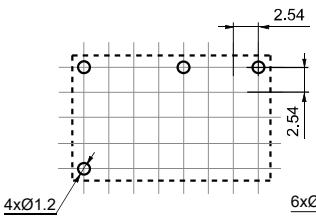


PCB Layout

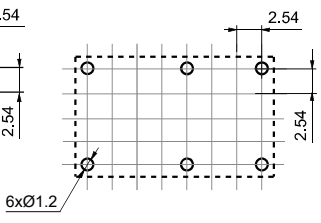
(Bottom view)

Monostable & 1 coil latching

1 Form A,1 Form B

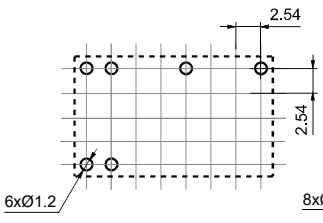


2 Form A, 2 Form B,1A + 1B

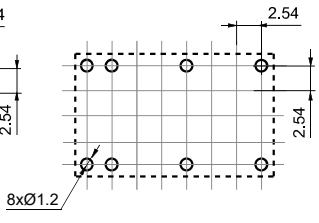


2 coils latching

1 Form A,1 Form B



2 Form A, 2 Form B,1A + 1B



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 ±1mm.

3) The width of the gridding is 2.54mm.

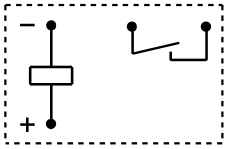
OUTLINE DIMENSIONS AND WIRING DIAGRAM

Unit: mm

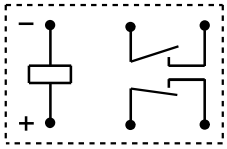
Wiring Diagram
(Bottom view)

Monostable
(Standard polarity)

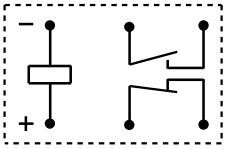
1 Form A



2 Form A

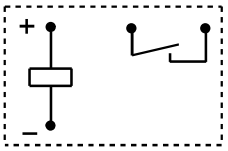


1A + 1B

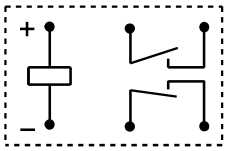


Monostable
(Reverse polarity)

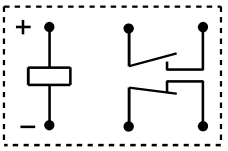
1 Form A



2 Form A

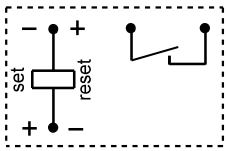


1A + 1B

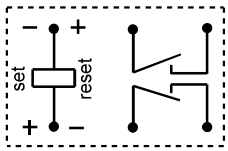


1 coil latching
(Standard polarity)

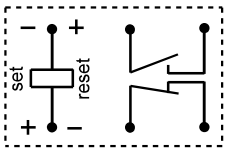
1 Form A



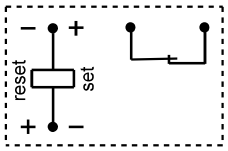
2 Form A



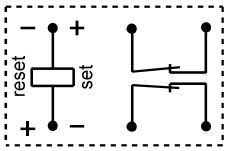
1A + 1B



1 Form B

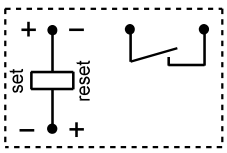


2 Form B

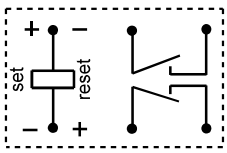


1 coil latching
(Reverse polarity)

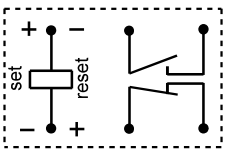
1 Form A



2 Form A

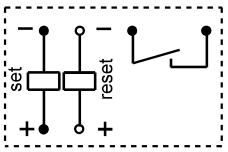


1A + 1B

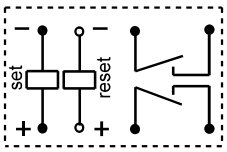


2 coils latching
(Standard polarity)

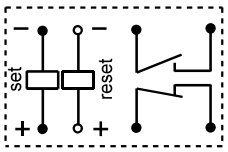
1 Form A



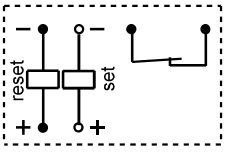
2 Form A



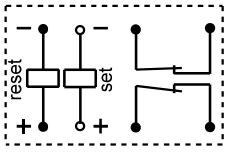
1A + 1B



1 Form B

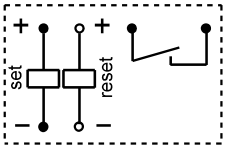


2 Form B

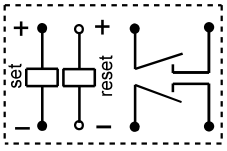


2 coils latching
(Reverse polarity)

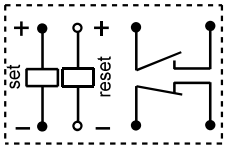
1 Form A



2 Form A



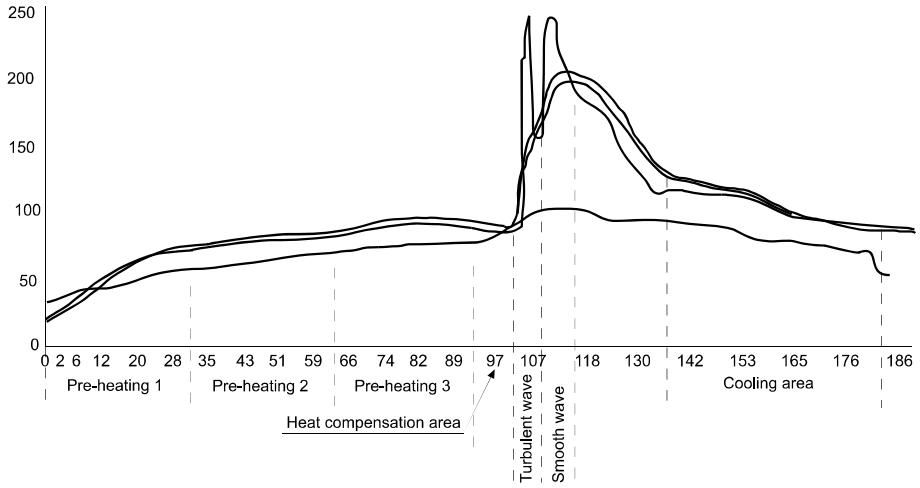
1A + 1B



CAUTIONS

1. Relay is on the "reset" or "set" status when Delivery, 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 applied across the 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. It is not allowed to use the product exceed the ambient temperature range of -40℃～70℃ for long time, as the parts and component of relay may get deformation due to high temperature. The parameters for wave soldering are recommended as follows: max. pre-heating time of 120s, max. pre-heating temperature of 120℃, soldering temperature of 260℃±5℃, soldering time of 10s±3s. Please try to shorten the time and lower the temperature of pre-heating and soldering. It is recommended to apply manual soldering for such relay.

Wave soldering temperature distribution chart



Disclaimer

The specification is for reference only. 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.