HFE52 CHANGE OVER HIGH POWER LATCHING RELAY

Features

- Latching relay for phase change-over switch
- With micro switch detection funtion
- 120A switch capacity
- UC3 in IEC 62055-31 compliant.
  Short circuit current withstand capacity of 6000A for 100ms(breaking 2 times voltage)
- Switching within 10ms
- (A12): With manual switch

RoHS compliant

CONTACT DATA

Contact arrangement	1A1B
Contact resistance 1)	Typical value: 2) ≤0.35mΩ(100A)
Contact material	$AgSnO_2$
Contact rating(Res. load)	120A 220VAC
Max. switching voltage	380VAC
Max. switching current	120A
Max. switching power	26400W
Mechanical endurance	1 x 10^5ops
Electrical endurance	AC Terminal:1x10^4ops(100A 220VAC) 6x10^3ops(120A 220VAC) BC Terminal:1x10^4ops(100A 220VAC) 6x10^3ops(120A 220VAC)

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 open contacts	2500VAC 1min
Creepage distance		>10mm
Operate time(at 2.5 times nomi. volt.)		Approx.5.5ms
Release time(at 2.5 times nomi. volt.)		Approx.4.5ms
Shock resistance	Functional	98m/s^2
	Destructive	980m/s^2
Vibration resistance		10Hz ~ 55Hz 1.5mm DA
Humidity		5% ~ 85% RH
Ambient temperature		-40°C ~ 85°C
Termination	Coil terminal	PCB、QC
	Load terminal	QC
Unit weight		Approx.70g
Construction		Plastic sealed

Notes: The data shown above are initial values.

COIL

Rated power	Single coil latching:Approx.5W Double coils latching: Approx.10W

COIL DATA

23°C

Single coil latching

Nominal Voltage VDC	Set / Reset Voltage VDC 1)2)	Pulse Duration ms	Coil Resistance x (1±10%) Ω
5	≤4.0	≥100	5
6	≤4.8	≥100	7.2
9	≤7.2	≥100	16.2
12	≤9.6	≥100	28.8
24	≤19.2	≥100	115.2
48	≤38.4	≥100	460.8

Double coils latching

Nominal Voltage VDC	Set / Reset Voltage VDC 1)2)	Pulse Duration ms	Coil Resistance x (1±10%) Ω
5	≤4.0	≥100	2.5+2.5
6	≤4.8	≥100	3.6+3.6
9	≤7.2	≥100	8.1+8.1
12	≤9.6	≥100	14.4+14.4
24	≤19.2	≥100	57.6+57.6
48	≤38.4	≥100	230.4+230.4

Notes:1) The data shown above are initial values.
2) The above set voltage, reset voltage are the test value for relay without load. Please use 1~1.5 times of rated voltage to drive the relay for your application.

ORDERING INFORMATION

	HFE52	/12	-1HD	T	-L1	-R	(XXX)

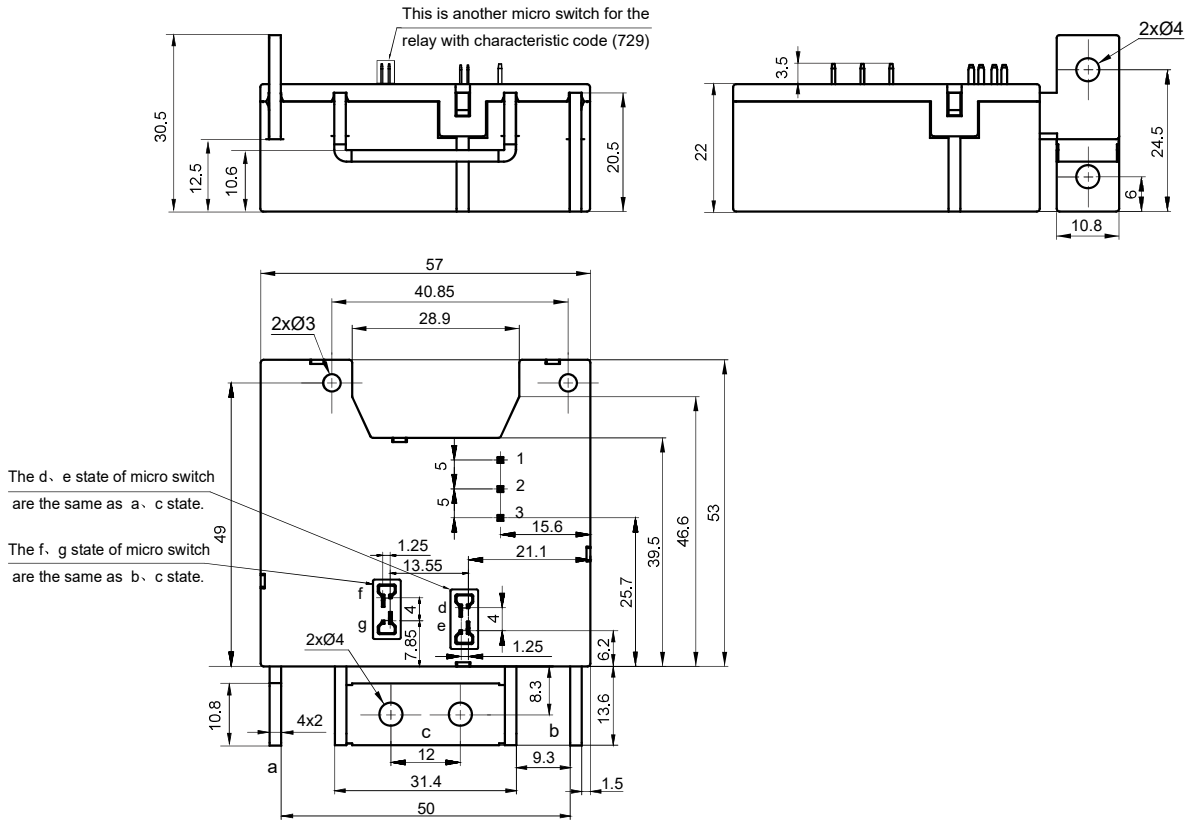
Type	
Coil voltage	5,6,9,12,24,48 VDC
Contact arrangement	**1HD:**1 Form A + 1 Form B
Contact material	**T:** $AgSnO_2$
Coil type	**L1:** Single coil latching **L2:** Double coils latching
Polarity	**R:** Reverse polarity **Nil:** Standard polarity
Special code [1) 2)]	**XXX:** Customer special requirement **(729):**Double micro switches **(A12):**With manual switch

Note: 1) Please contact us if mirco switch is needed.
2) The customer special requirement express as special code after evaluating by Hongfa.

OUTLINE DIMENSIONS AND WIRING DIAGRAM

Unit: mm

Outline Dimensions



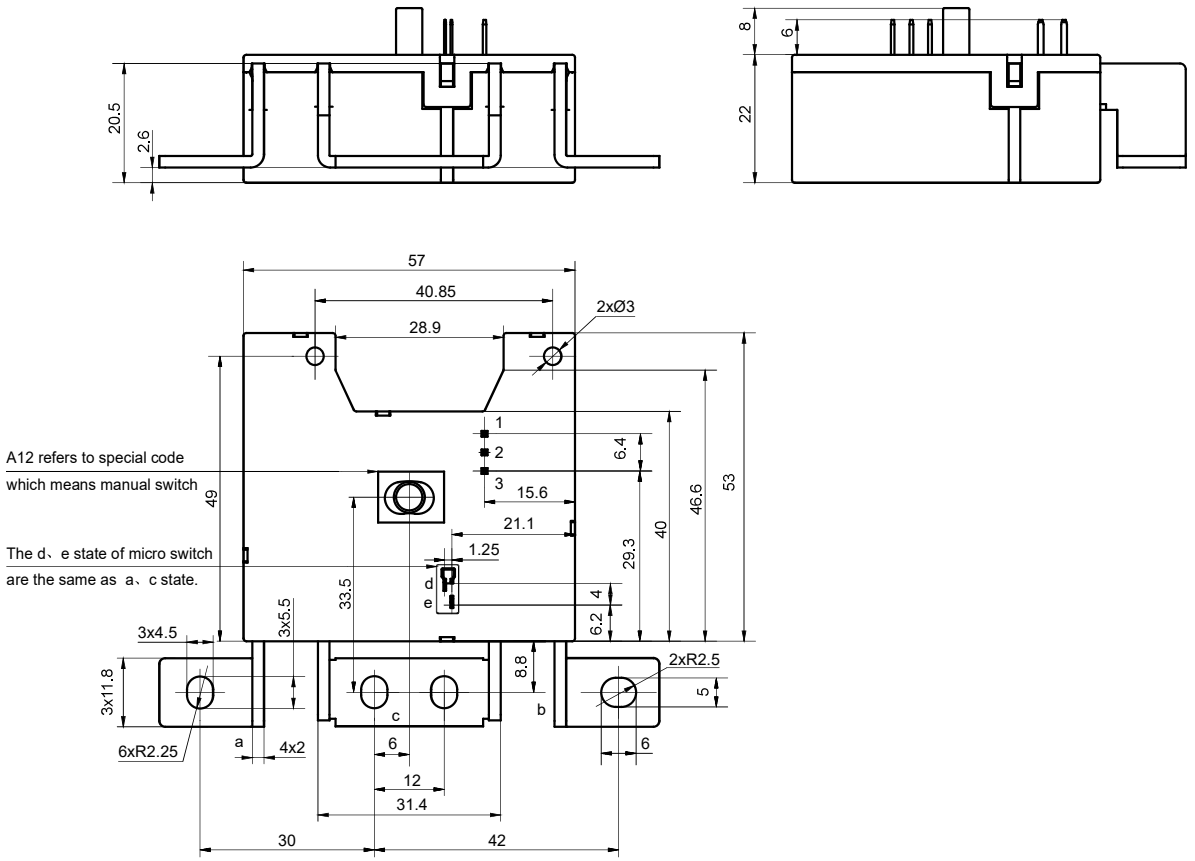
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be±0.2mm; outline dimension ＞1mm and ≤5mm, tolerance should be±0.3mm; outline dimension ＞5mm, tolerance should be ±0.4mm.

OUTLINE DIMENSIONS AND WIRING DIAGRAM

Unit: mm

Outline Dimensions

HFE52/X-1HDT-XX-XXX(A12)



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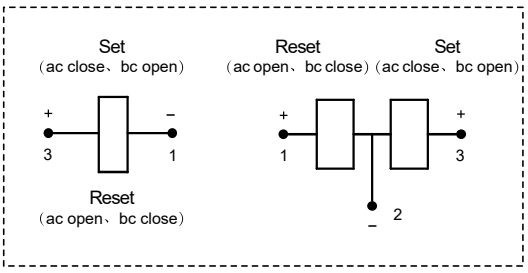
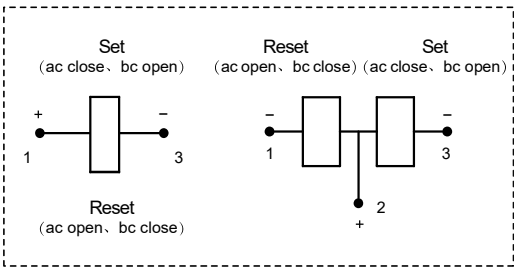
Wiring Diagram

Standard polarity

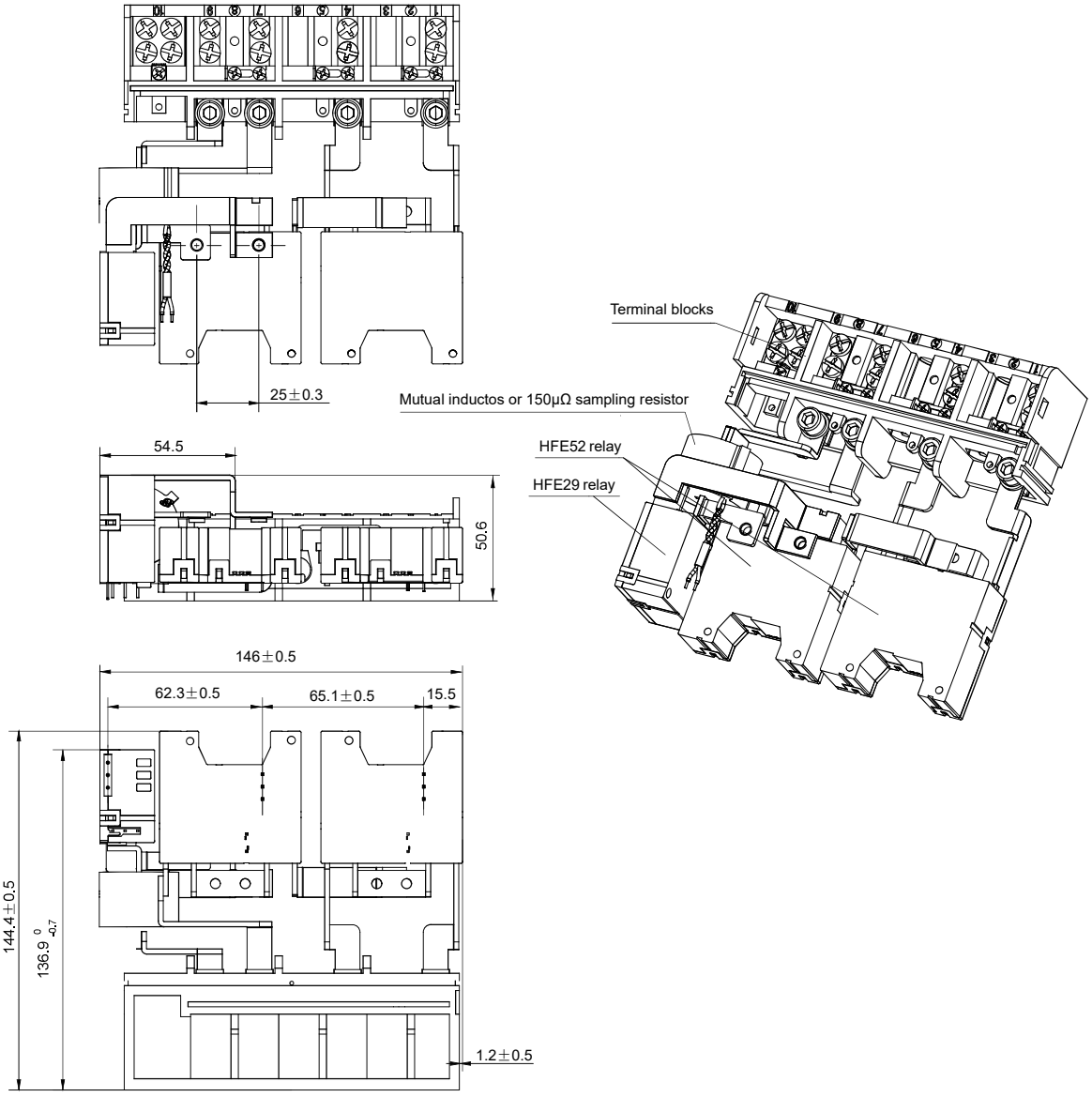


Reverse polarity



Typical Design

Typical Design for phase change-over switch
（HFE29+HFE52+HFE52）

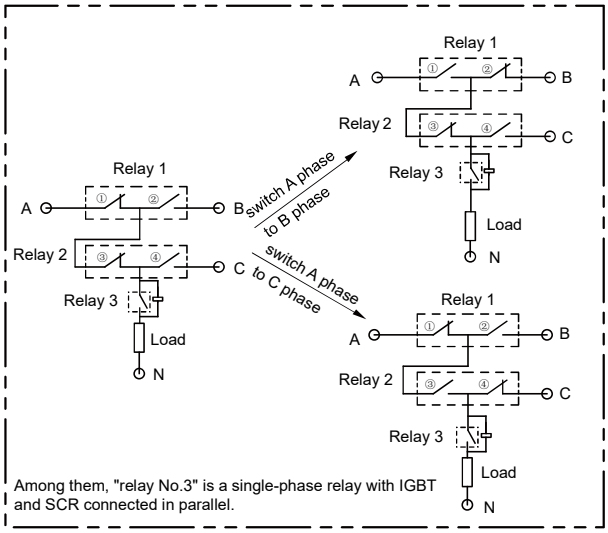


TYPICAL DESIGN

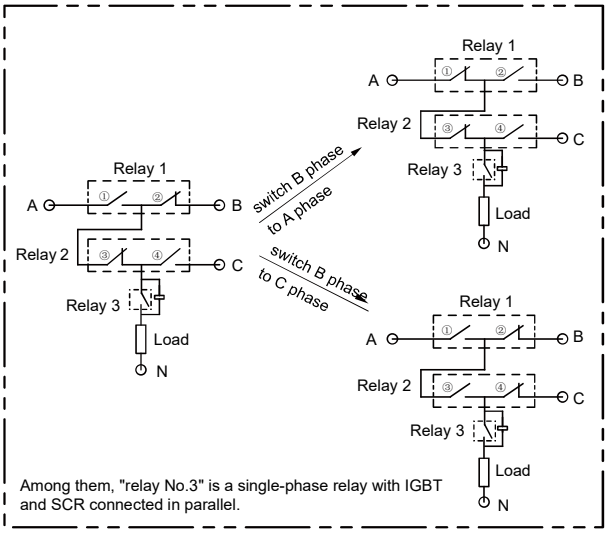
Typical Design

Typical wiring diagram of phase change-over switch
（HFE29+HFE52+HFE52）

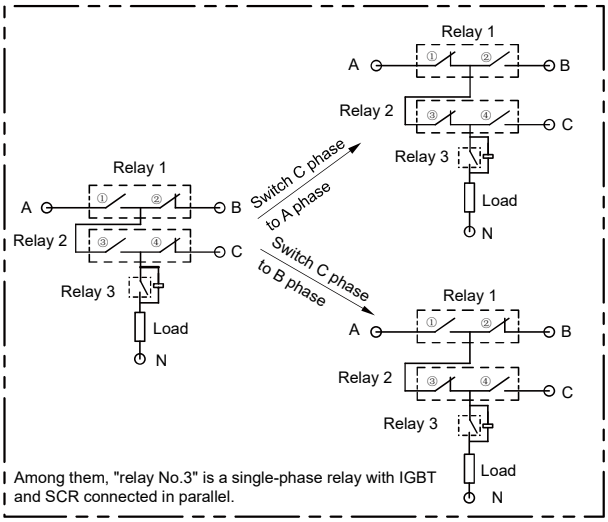
Switch A phase to B phase or C phase



Switch B phase to A phase or C phase



Switch C phase to A phase or B phase



Description of phase-change process:：

1. Load disconnection:

Close SCR first →Make ”relay No.3” open → Disconnect SCR → Judge whether the load current is cut off through the current transformer at the load end. Because SCR is connected in parallel, so that the relay can be switched randomly without considering whether it crosses zero during operation.

2.Phase-change:

Complete phase switching through the operation and reset of "relay No.1" and "relay No.2" (whether the phase-change is completed can be identified by microswitch), as shown in the figure.

3.Load connection:

Close SCR first → Operate "relay No.3" to connect the load (whether it is closed can be identified by microswitch) → Disconnect SCR;Phase switching is completed after the above processes finished.

Because relay No.3 is connected in parallel with SCR, and SCR is closed first and then disconnected, so the operation time of relay No. 3 can be neglected, and the overall phase-change time only refers to the operation time of single relay No.1 or relay No. 2 (which can be driven at the same time).

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.