

Features:

- Miniature relay with high switching capability (25A), ideal for motor and compressor control.
- Both quick terminal and PCB terminal are available.
- IEC60335-1/IEC60079-15 compliant product is available.

Typical applications:

- Ideal for motor, compressor control, e.g.:air conditioner.
- Home appliances and industrial electrical equipment.

Approvals

UL, c-UL (File No.): E190598

TUV (File No.): R50138321

CQC (File No.): CQC02001002131,CQC09002030584

VDE (File No.): 40007481

Contact Data

Contact arrangement	1form A(NO)
Contact resistance	100m Ω Max.(at 1A 6VDC)
Rated voltage	250VAC
Max. switching voltage	400VAC
Rated current	20A/25A
Min. recommended contact load	1A, 6VDC
Breaking capacity max.	6925VA
Contact material	AgNi,AgSnO ₂
Frequency of operation	360 ops./h
Operate/release time max.	20ms/10ms
Electrical endurance	See electrical endurance graph

Contact ratings

Type	Contact	Load	Cycles
IEC 61810			
SFK	A(No)	25A,250VAC,cos ϕ =1,85°C	1X10 ⁵
SFK	A(No)	20A,250VAC,cos ϕ =1,85°C	1X10 ⁵
SFK	A(No)	Making:80A for 300ms,85°C	1X10 ⁵
UL 60947-4-1			
SFK	A(No)	25A,250VAC,cos ϕ =1,85°C	1X10 ⁵
SFK	A(No)	20A,250VAC,cos ϕ =1,85°C	1X10 ⁵
SFK	A(No)	TV-10,120 VAC, 40°C	2.5X10 ⁴
SFK	A(No)	2HP,240VAC,85°C	1X10 ⁵
GB/T 21711.1-2023			
SFK	A(No)	25A,250VAC,85°C	2X10 ⁴
SFK	A(No)	20A,250VAC,105°C	2X10 ⁴
EN 60730-1			
SFK	A(No)	25A,250VAC,85°C	1X10 ⁵
SFK	A(No)	20A,250VAC,85°C	1X10 ⁵
Mechanical endurance			
			$\geq 2 \times 10^6$

Coil Data

Coil voltage range:	5 to 24VDC
Operative range, IEC 61810	2
Coil insulation system according UL	Class F


Coil Data (continued)
Coil versions, DC coil

Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ω ($\pm 10\%$)	Rated coil powers mW
5	≤ 3.75	≥ 20.25	27.8	900
6	≤ 4.5	≥ 0.3	40	900
9	≤ 6.75	≥ 0.45	90	900
12	≤ 9	≥ 0.6	160	900
18	≤ 13.5	≥ 0.9	360	900
24	≤ 18	≥ 1.2	640	900

All figures are given for coil without pre-energization, at ambient temperature 20°C

Insulation Data

Initial dielectric strength

between open contacts	1000VAC
between contact and coil	4500VAC

Clearance/Creepage

between contact and coil (Clearance)	$\geq 4.0\text{mm}(\text{actual})$
between contact and coil (Creepage)	$\geq 5.0\text{mm}(\text{actual})$

Material group of insulation parts

IIIa

PTI 175V/PTI 250V

Other Data

Material compliance: EU RoHS/ELV, China RoHS, REACH

Ambient temperature: -40°C to +85°C

Category of environmental protection

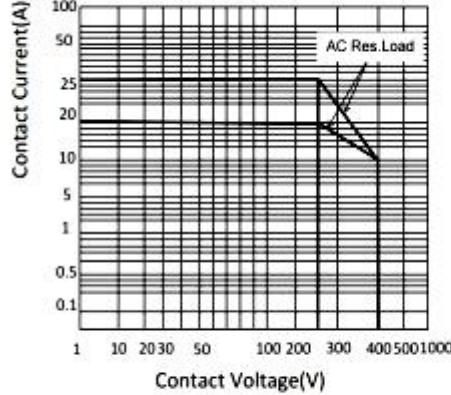
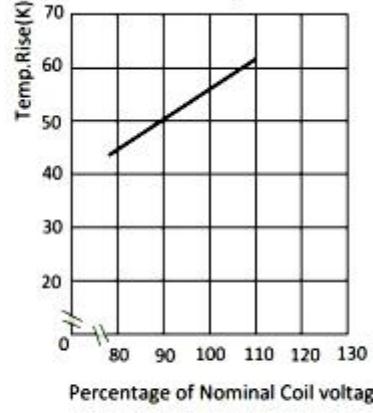
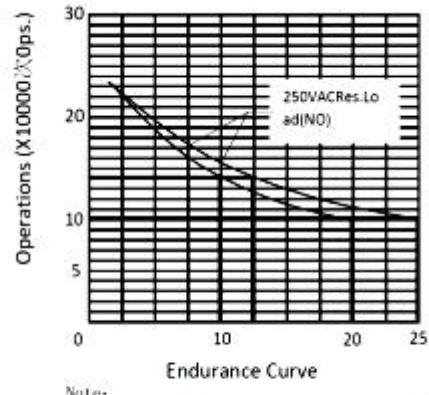
IEC 61810 RTII - flux proof

RTIII - Sealed type washable

Weight: Approx. 22.0g

Resistance to soldering heat THT (IEC 60068-2-20): 260°C/5s

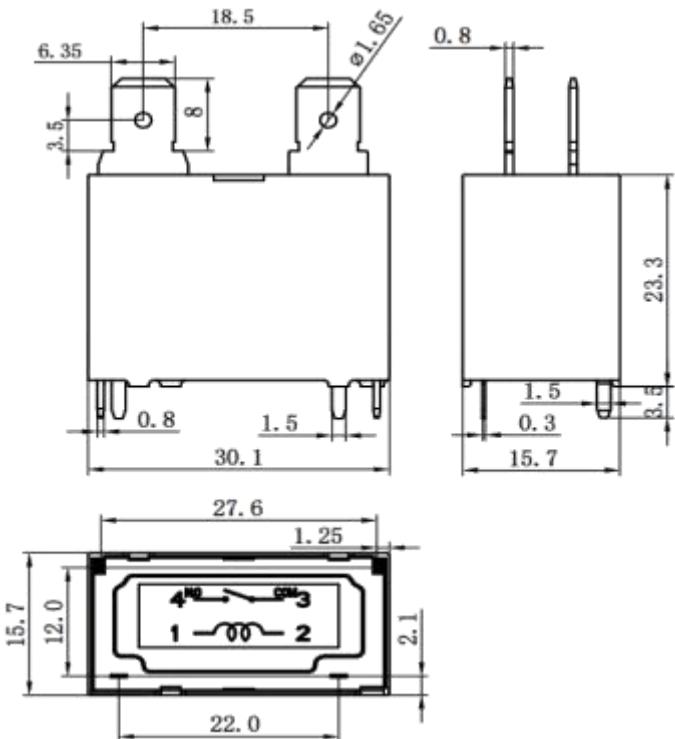
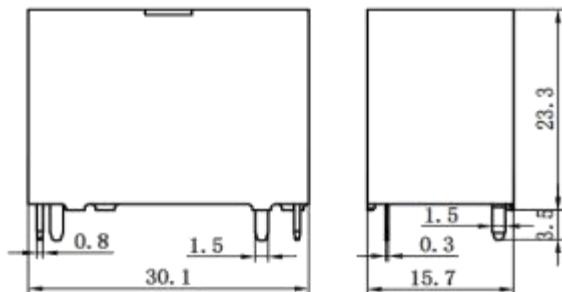
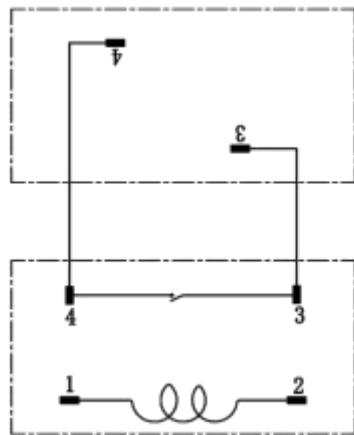
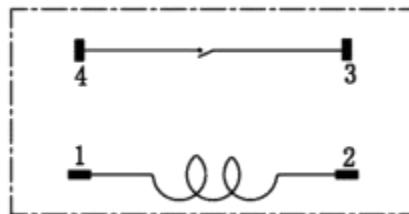
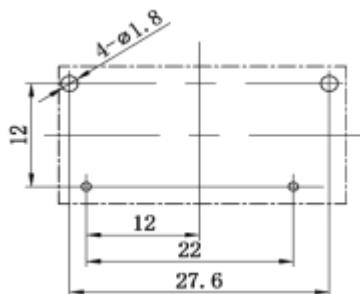
Packaging/unit: tube, tray

Max. Switching Power

Coil Temp.Rise

Endurance Curve


Note:

(1) Test conditions: room temperature, flux-proof product, resistive load, 1s on, 9s off.

(2) The above curves are for reference only, and the final result is subject to the experiment.

Dimensions
Standard type

PCB type

Wiring Diagrams (bottom view)

PCB type

PCB Layouts (bottom view)


In case of no tolerance shown on outline dimension

If dimension < 1 mm, tolerance: ± 0.2 mm

If dimension 1~5mm, tolerance: ± 0.3 mm

If dimension > 5mm, tolerance: ± 0.4 mm

Notes:

1. The dimension of pin is the size before tinning

2. Tolerance of PCB layout: ± 0.1 mm.

Product Code Structure

SFK	-1	12	D	M	P	3	-F	-E	-XX	
										Special Parameter:
										Nil-Standard type
										Letters or Numbers-Special requirements
										Contact Type:
										Nil-Standard (20A)
										E-Step type contact (25A)
										Insulation System:
										Nil-Standard
										B-Class B
										F-Class F
										Contact Material:
										Nil-AgSnO ₂
										3-AgNi and AgSnO ₂
										4-AgCdO
										Terminal Type:
										Nil-Standard
										P-PCB
										Contact Form:
										M-Form A
										Coil Power:
										D-0.90W
										Coil Voltage (VDC):
										05, 06, 09, 12, 18, 24
										Number of Poles:
										1-1 Pole
										Type: SFK

- (1) Flux-proof relays can not be used in the environment with pollutants like H₂S, SO₂, NO₂, dust, etc.
- (2) Water cleaning or surface process is not suggested after the flux-proof relays are assembled on PCB.
- (3) Customized special suffix is available after being evaluated by Sanyou.
- (4) C1 suffix stands for product in accordance to IEC60335-1(GWT) & CTI250V.
- (5) Ex suffix stands for product compliant with IEC60079-15.

Examples of Ordering Codes

SFK-112DM relay SFK, rated DC voltage 12V, coil power 0.90W, 1NO, 20A, and contact material AgSnO₂.

SFK-112DM-E relay SFK, rated DC voltage 12V, coil power 0.90W, 1NO, 25A, and contact material AgSnO₂.

Disclaimer

The specification is for reference only. Specifications are subject to change without prior notice.

We could not evaluate all the performance and all the parameters for every possible applications. Thus the users should in a right position to choose suitable product for their own application. For sealed relays, after installation and cleaning, please open the ventilation hole in the case before use. If there is any query, please contact Sanyou for technical services. However it is the user's responsibility to determine which product should be used.