



## Features

- Miniature relay with high switching capability(25A VDE Certified), especially suitable for Motor and compressor control.
- Both quick connect and PCB terminal types available.

## Safety Approval

UL , C-UL File No. : E190598

VDE File No. : 40007481

TUV File No. : R50138321

CQC File No. : CQC02001002131

## Contact Capacity

|                                        |                |                    |
|----------------------------------------|----------------|--------------------|
| Model                                  | SFK            |                    |
| Nominal switching capacity (res. load) | 25A/20A 250VAC | H Mark: 22A 250VAC |
| Max. switching current                 | 25A            |                    |
| Max. switching voltage                 | 277VAC         |                    |
| Max. switching power                   | 6,250VA        |                    |

## Characteristic Data

|                                         |                                 |                                                             |
|-----------------------------------------|---------------------------------|-------------------------------------------------------------|
| Contact material                        | Silver alloy                    |                                                             |
| Initial contact resistance (at 6VDC 1A) | 50mΩ Max.                       |                                                             |
| Operate time (at nominal volt.)         | 20msec. Max.                    |                                                             |
| Release time (at nominal volt.)         | 10msec. Max.                    |                                                             |
| Initial insulation resistance           | 1,000MΩ Min.(DC500V)            |                                                             |
| Initial dielectric strength             | Between open contacts :         | AC1,000V , 50/60Hz 1Min.<br>H Mark:AC2,500V , 50/60Hz 1Min. |
|                                         | Between coil and contact :      | AC4,500V , 50/60Hz 1Min.                                    |
| Vibration resistance                    | Functional                      | 10 ~ 55Hz at double amplitude of 1.5 mm                     |
|                                         | Destructive                     | 10 ~ 55Hz at double amplitude of 1.5 mm                     |
| Shock resistance                        | Functional                      | 10G Min.                                                    |
|                                         | Destructive                     | 100G Min.                                                   |
| Endurance (operations)                  | Mechanical (at 7,200 ops./h)    | 10,000,000                                                  |
|                                         | Electrical (at 900 ops./h)      | standard type:100,000 cycles                                |
|                                         |                                 | H Mark:30,000 cycles                                        |
| Ambient temperature                     | -40°C ~ +85°C (no condensation) |                                                             |
| Unit weight                             | Approx. 22.0 g                  |                                                             |

## Standard Coil Data(at 20°C)

| Nominal voltage (VDC) | Nominal operating current 10% (mA) | Coil resistance 10% (Ω) | Max allowable voltage    | Pick-up voltage (Max.)  | Drop-out voltage (Min.) | Nominal operating power |
|-----------------------|------------------------------------|-------------------------|--------------------------|-------------------------|-------------------------|-------------------------|
| 5                     | 180.00                             | 27.80                   | 130 % of nominal voltage | 75 % of nominal voltage | 5 % of nominal voltage  | .Approx 0.90W           |
| 6                     | 150.00                             | 40.00                   |                          |                         |                         |                         |
| 9                     | 100.00                             | 90.00                   |                          |                         |                         |                         |
| 12                    | 75.00                              | 160.00                  |                          |                         |                         |                         |
| 18                    | 50.00                              | 360.00                  |                          |                         |                         |                         |
| 24                    | 37.50                              | 640.00                  |                          |                         |                         |                         |

## Coil Data of Mark H (at 20°C)

| Nominal voltage (VDC) | Nominal operating current 10% (mA) | Coil resistance 10% (Ω) | .Max allowable voltage   | Pick-up voltage (Max.)  | Drop-out voltage (Min.) | Nominal operating power |
|-----------------------|------------------------------------|-------------------------|--------------------------|-------------------------|-------------------------|-------------------------|
| 5                     | 280.00                             | 18.00                   | 130 % of nominal voltage | 75 % of nominal voltage | 5 % of nominal voltage  | .Approx 1.40W           |
| 6                     | 233.33                             | 26.00                   |                          |                         |                         |                         |
| 9                     | 155.56                             | 58.00                   |                          |                         |                         |                         |
| 12                    | 116.67                             | 103.00                  |                          |                         |                         |                         |
| 18                    | 77.78                              | 232.00                  |                          |                         |                         |                         |
| 24                    | 58.33                              | 412.00                  |                          |                         |                         |                         |

## Safety Approval Ratings

| Approval         | CQC                                                  | TUV                                                                                            | VDE                                    | UL/CUL                                                                                                                                                                                                                                                              |
|------------------|------------------------------------------------------|------------------------------------------------------------------------------------------------|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| File No.         | CQC02001002131                                       | R50138321                                                                                      | 40007481                               | E190598                                                                                                                                                                                                                                                             |
| Approved ratings | 25A 250VAC<br>22A 250VAC<br>20A 250VAC<br>16A 277VAC | Making 80A<br>For 300ms<br>Cosφ=0.7 ,<br>Breaking 20A ,<br>Cosφ= 0.9 ,<br>250VAC<br>22A 250VAC | 25A 250VAC<br>22A 250VAC<br>20A 250VAC | 25A 277VAC, Resistive&General use<br>25A 250VAC, Resistive&General use<br>25A 120VAC, Resistive&General use<br>22A 250VAC, Resistive&General use<br>20A 250VAC, Resistive&General use<br>20A 120VAC, Resistive&General use<br>1HP 120VAC;2HP 240VAC<br>TV-10 120VAC |

## Ordering Information

| Nomenclature                                                                 |   |   |    |   |   |   |   |   |       |
|------------------------------------------------------------------------------|---|---|----|---|---|---|---|---|-------|
| SFK                                                                          | - | 1 | 12 | D | M | P | - | F | H -XX |
| Special Parameter : Nil-Standard type, E-Step structure contact              |   |   |    |   |   |   |   |   |       |
| Parameter Mark : Nil-Standard, H-GAP>1.8MM, Coil Power 1.40W, OP/OP :2500VAC |   |   |    |   |   |   |   |   |       |
| Insulation System : Nil-Standard, B-Class B, F-Class F                       |   |   |    |   |   |   |   |   |       |
| 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 Designation : SFK                                                       |   |   |    |   |   |   |   |   |       |

## Outline Dimensions, Wiring Diagram, P.C.

## Board Layout (unit : mm)

Unless otherwise specified :

If dimension &lt; 1mm, tolerance : 0.2 mm;

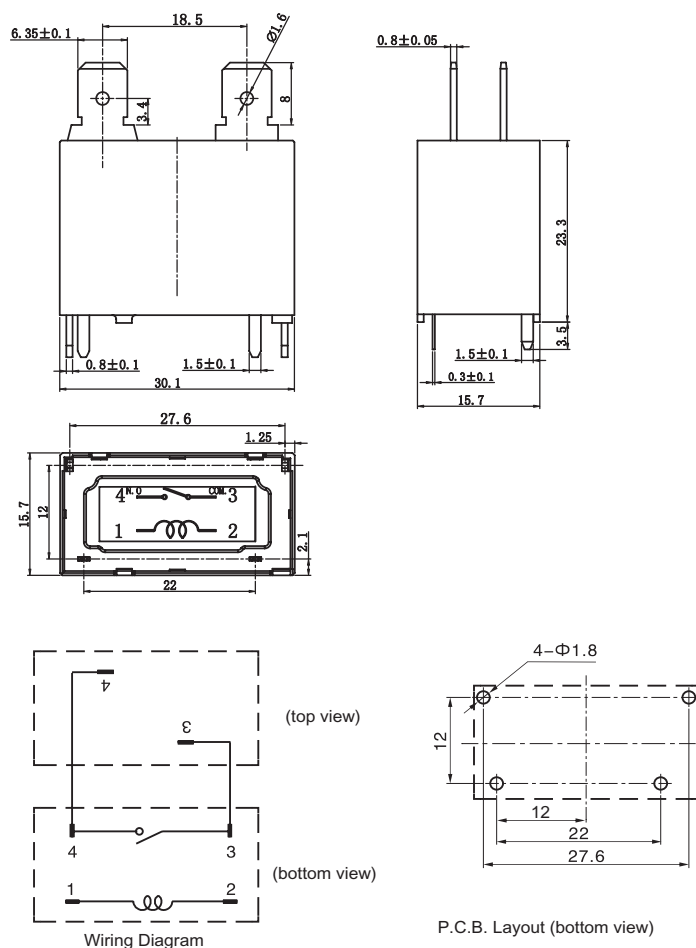
If dimension 1~5mm, tolerance : 0.3 mm;

If dimension &gt; 5mm, tolerance : 0.4 mm.

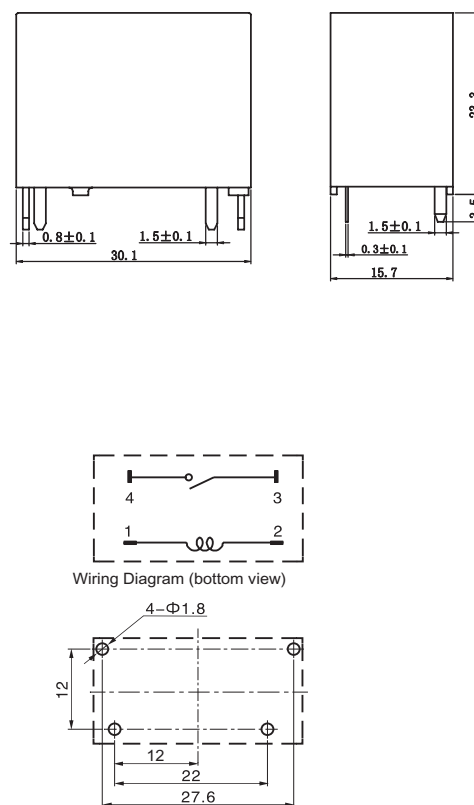
Note : 1. Extended terminal dimension is dimension before soldering.

2. Tolerance of P.C.B. layout : 0.1 mm.

## Standard type



## PCB type

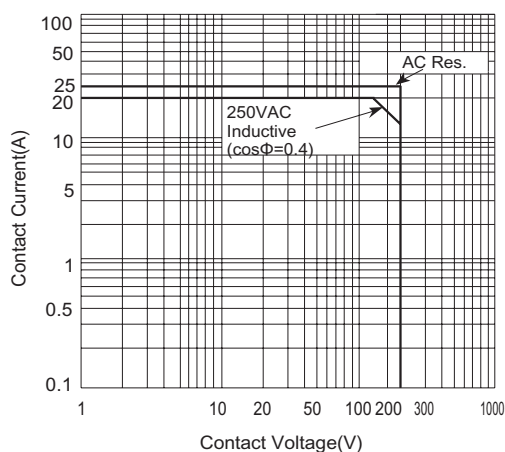


## Typical Applications

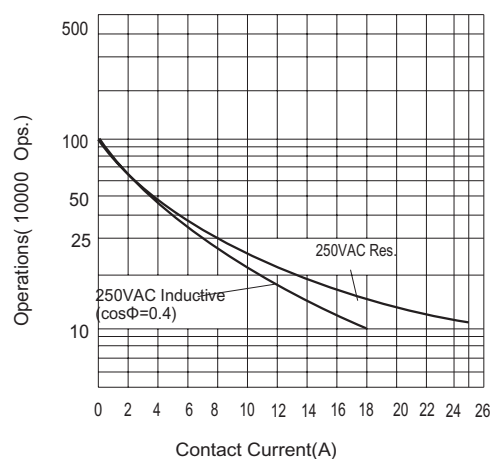
- Motor, compressor control, e.g. : air conditioner.
- Home appliances and industrial electrical equipment.

## Characteristic Curves

Max. Switching Power



Endurance Curve



## Disclaimer:

This datasheet is the customers' reference. All the specification 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 in a right position to choose the suitable product for their own application. If there is any query, please contact Sanyou for the technical service. However it is the user's responsibility to determine which product should be used only.