

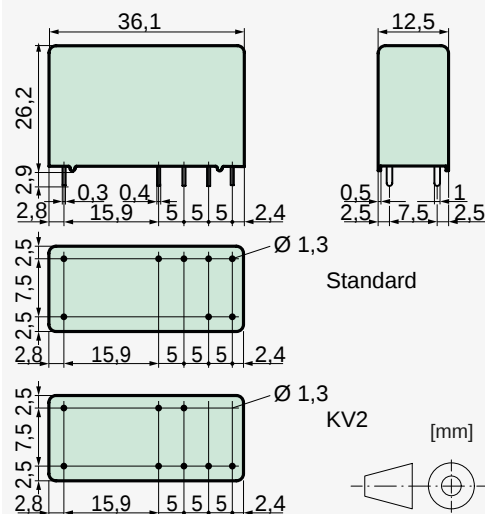


## SIM 3 Series

### Relay Key Data

- PCB relay with forcibly guided contacts
- Protective separation between coil and contacts (air and creepage distance >14 mm); protective separation between left and right contact side (air and creepage distance >5,5 mm)
- IEC 61810-3 Type A
- Contact mounting: SIM212 2 NO / 1 NC
- Small external dimensions
- Nominal coil power 0,75 W
- Holding coil power 0,21 W
- Coil for railway application according EN 50155 on request

### Dimensions



### Contact Data

|                                   |                                |
|-----------------------------------|--------------------------------|
| Contact material                  | AgSnO <sub>2</sub> + 0,2 µm Au |
| Type of contact                   | crown contact                  |
| Rated switching capacity          | 250 VAC 8 A AC1 2000 VA        |
| Electr. Life AC1(360 S / h)       | approx. 100000                 |
| Inrush current max.               | 20 A for 20 ms                 |
| Switching voltage range           | 5 to 250 VDC / VAC             |
| Switching current range*          | 10 mA to 8 A                   |
| Switching capacity range*         | 60 mW to 2000 W(VA)            |
| Contact resistance (as delivered) | ≤100 mΩ / 6 V / 100 mA         |

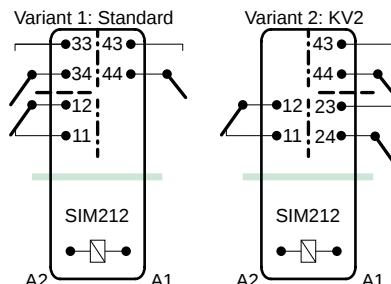
\*Guided values

### Standard Coils for Direct Current

(other voltages on request)

| Nominal voltage VDC | Min. pick-up voltage VDC at 20 °C | Drop-out voltage VDC at 20 °C | Nominal current in mA at 20 °C | Resistance in Ohm at 20 °C |
|---------------------|-----------------------------------|-------------------------------|--------------------------------|----------------------------|
| 5                   | 3,75                              | ≥0,5                          | 151,0                          | 33 ± 10%                   |
| 6                   | 4,50                              | ≥0,6                          | 125,0                          | 48 ± 10%                   |
| 12                  | 9,00                              | ≥1,2                          | 63,1                           | 190 ± 10%                  |
| 21                  | 15,75                             | ≥2,1                          | 35,5                           | 590 ± 10%                  |
| 24                  | 18,00                             | ≥2,4                          | 30,0                           | 800 ± 10%                  |
| 48                  | 36,00                             | ≥4,8                          | 15,4                           | 3100 ± 10%                 |
| 60                  | 45,00                             | ≥6,0                          | 12,5                           | 4800 ± 13%                 |
| 110                 | 82,50                             | ≥11,0                         | 6,8                            | 16000 ± 15%                |

### Circuit Diagram (relay top view)



### Insulation Data

|                                     |                        |
|-------------------------------------|------------------------|
| - Basic insulation                  | at 250 VAC             |
| - Air and creepage distance         | >4 mm                  |
| - Test voltage                      | 2500 V / 50 Hz / 1 min |
| - Double or reinforced insulation   | at 250 VAC             |
| - Air and creepage distance         | >5,5 mm                |
| - Test voltage                      | 4000 V / 50 Hz / 1 min |
| - Double or reinforced insulation   | at 250 VAC             |
| - Air and creepage distance         | >14 mm                 |
| - Test voltage                      | 5000 V / 50 Hz / 1 min |
| Test voltage contact open           | 1500 V / 50 Hz / 1 min |
| Creepage resistance                 | CTI 250                |
| Pollution degree                    | 2                      |
| Overvoltage category                | III                    |
| Insulation resistance at Up 500 VDC | >100 MΩ                |

### Additional Data

|                                         |                                     |
|-----------------------------------------|-------------------------------------|
| Mechanical endurance                    | >10 x 10 <sup>6</sup> operations    |
| Switching frequency, mechanical         | 15 Hz                               |
| Response time (all NO closed)           | typically 10 ms                     |
| Drop-out time (NC closed)               | typically 4 ms                      |
| Bounce time of NO contact               | typically 6 ms                      |
| Bounce time of NC contact               | typically 12 ms                     |
| Shock resistance 16 ms                  | NO > 10g<br>NC > 2,5g               |
| Vibration resistance (10-200 Hz)        | NO > 10g<br>NC > 1g                 |
| Resistance to short circuiting contacts | 1000 A SCPD 10 A gG / gL (pre-fuse) |
| Ambient temperature                     | -40°C to +70°C                      |
| Thermal Resistance                      | 50 K / W                            |
| Temperature limit for coil              | 120°C                               |
| Weight                                  | approx. 25 g                        |
| Mounting position                       | any                                 |
| Mounting distance                       | rec. >5 mm                          |
| Test method                             | A / group assembly                  |
| Type of protection                      | RT II                               |
| Solder bath temperature                 | 270°C / 5 s                         |
| **without spark suppression             |                                     |

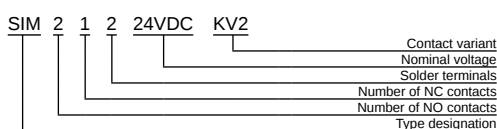
### Tests, Regulations, Standards

|                                    |            |
|------------------------------------|------------|
| Approvals                          | c RU us    |
| UL File E188953                    | Sec. 3     |
| Insulation class IEC 60664-1       | 250 VAC    |
| Fire protection requirements       | UL 94 / V0 |
| Standards IEC 61810-1, IEC 61810-3 |            |

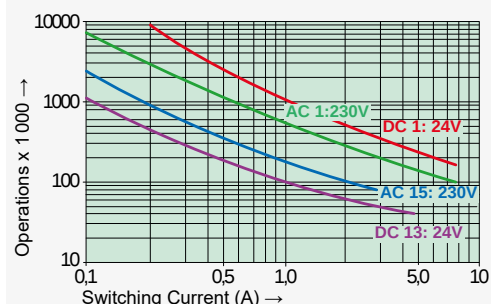
### Options, Accessories

Print socket, DIN-rail socket

### Product Key



### Contact Lifetime

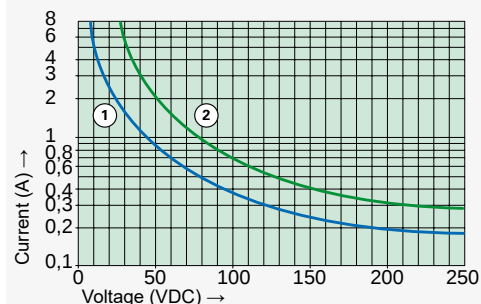


Maximal switching capacity (DIN EN 60947-5-1, Tab. C2)

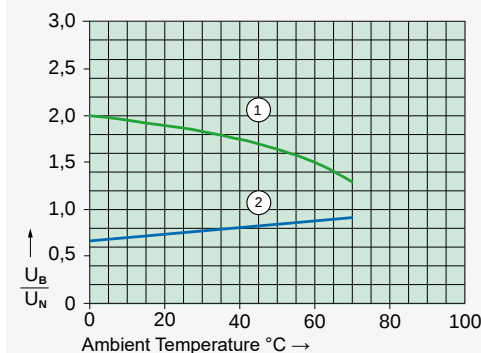
|         |                     |
|---------|---------------------|
| AC 1:   | 250 V / 8 A         |
| AC 15:  | 230 V / 3 A         |
| DC 1:   | 24 V / 8 A          |
| DC 13:  | 24 V / 6 A / 0,1 Hz |
| UL 508: | C150 / R300         |

Maximal contact load at AC 1 with 230 V:  
2 contacts with 8 A each

### Load Limit Curve with Direct Current



### Excitation Voltage Range



Single relay on print, no heat accumulation due to surrounding components with self-heating, duty cycle 100%.