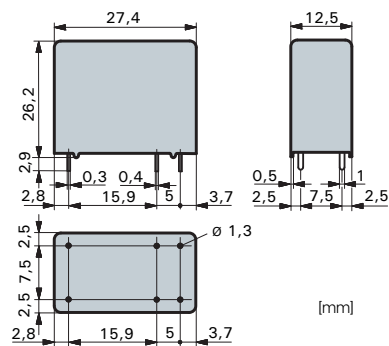




Relay data

- PCB relay with forcibly guided contacts
- Protective separation between coil and contacts (leakage and creepage distances > 14mm); protective separation between left and right contact side (leakage and creeping distances > 5.5mm)
- EN 50205, type A
- Contact mounting: SIM112 1NO/1NC
- Small external dimensions
- Mean coil power 0.5W
- Holding power 0.15 W



Contact material	AgSnO ₂ +0.2μm Au
Type of contact	Crest contact
Rated switching capacity	250VAC 8A AC1 2'000VA
Electr. life AC1 (360 cycles/h)	approx. 100'000
Inrush current max.	20A for 20ms
Switching voltage range	5 to 250 VDC/VAC
Switching current range*	10mA to 8A
Switching capacity range*	0.06VA(W) to 2'000VA
Contact resistance (as delivered)	≤100mΩ/28V/100mA

* Guide values

Standard coils for direct current (other voltages on request)

Nominal voltage VDC	Min. pick-up voltage at 20°C	Drop-out voltage at 20 °C	Nominal current in mA	Resistance in Ohm at 20 °C	Tolerance in %
5	3,5	≥ 0,5	111,0	45	± 10
6	4,2	≥ 0,6	85,7	70	± 10
12	8,4	≥ 1,2	44,4	270	± 10
21	14,7	≥ 2,1	23,8	880	± 10
24	16,8	≥ 2,4	21,8	1'100	± 10
48	33,6	≥ 4,8	10,9	4'400	± 13
60	42,0	≥ 6,0	8,7	6'850	± 15
110	77,0	≥ 11,0	5,5	20'000	± 15

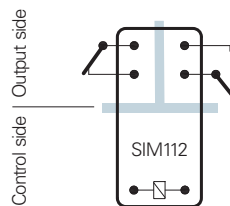
Ordering example

SIM 1 1 2 24VDC

Coil voltage
Soldering tags
Number of NC contacts
Number of NO contacts
Type designation

General data

Circuit diagram (view on relay upper side)



Double or reinforced insulation

Mechanical life	> 10 x 10 ⁶ operations
Switching frequency, mechanical	15Hz
Response time	typically 10ms
Drop-out time**	typically 3ms
Bounce time of NO contact	typically 6ms
Bounce time of NC contact	typically 12ms
Shock resistance	16ms NO contact > 10g
Vibration resistance	10-200Hz NO contact > 10g
Test voltage coil/contacts	5'000Veff 1min
Test voltage left to right contact sides	4'000Veff 1min
Test voltage contact open	1'500Veff 1min
Insulation resistance	10 ¹¹ Ω
Creepage resistance	CTI 250
Weight	approx. 20g
Mounting position	any
Ambient temperature	-40°C to +70°C
Type of protection	RT II
Solder bath temperature	270 °C/5s
Thermal resistance	55K/W
Temperature limit for coil	120°C
Pollution degree	2
Overvoltage category	III
Resistance to short circuiting	1'000A SCPD 10A gG (pre-fuse)

** without spark suppression

Insulation terms

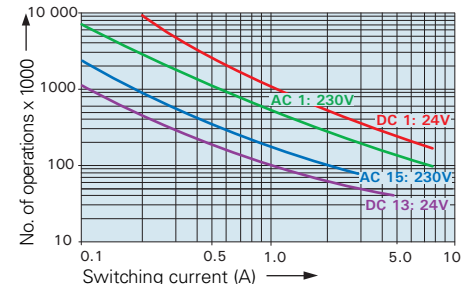
Coil/contacts:
Double or reinforced insulation > 14mm
Left to right contact side:
Double or reinforced insulation > 5.5mm

Tests, regulations

Approvals	SEV, UL, cUL, TÜV
UL File E188953	Sec. 3
Insulation class IEC 60664-1	250VAC
Protection class II	VDE 0106
Fire protection requirements	UL 94 / V0

Diagrams

Contact lifetime for NO contact



Max. switching characteristics (determined acc. to DIN EN 60947-5-1 table C2):

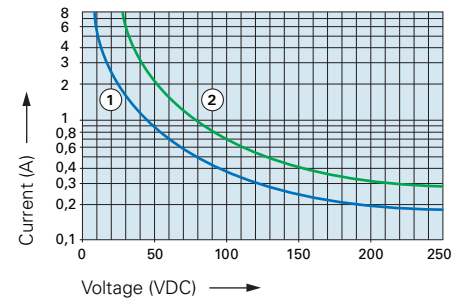
AC 15: 230V/3A

DC 13: 24V/4A

DC 13: 24V/6A/0,1Hz

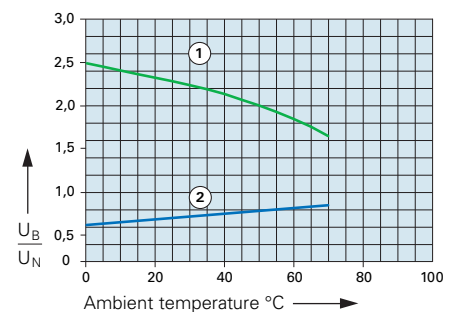
UL 508: C150/R300

Load limit curve with direct current



- 1) Inductive load, L/R 40 ms
- 2) Resistive load

Excitation voltage range



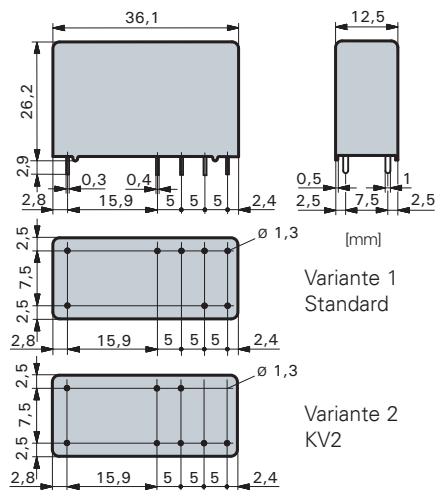
- 1) Max. excitation voltage with contact load ≤ 2A
- 2) Min. excitation voltage (guaranteed values) without previous operation

No heat accumulation due to intrinsic heating of other components.
Continuous duty 100%.



Relay data

- PCB relay with forcibly guided contacts
- Protective separation between coil and contacts (leakage and creepage distances > 14mm); protective separation between left and right contact side (leakage and creeping distances > 5.5mm)
- EN 50205, type A
- Contact mounting: SIM212 2NO/1NC
- Small external dimensions
- Mean coil power 0.75W
- Holding power 0.21 W



Contact material	AgSnO ₂ +0.2µm Au
Type of contact	Crest contact
Rated switching capacity	250VAC 8A AC1 2'000VA
Electr. life AC1 (360 cycles/h)	approx. 100'000
Inrush current max.	20A for 20ms
Switching voltage range	5 to 250 VDC/VAC
Switching current range*	10mA to 8A
Switching capacity range*	0.06VA(V) to 2'000VA
Contact resistance (as delivered)	≤100mΩ/28 V/100mA

* Guide values

Standard coils for direct current (other voltages on request)

Nominal voltage VDC	Min. pick-up voltage at 20°C	Drop-out voltage at 20°C	Nominal current in mA	Resistance in Ohm at 20°C	Tolerance in %
5	3,75	≥ 0,5	151,0	33	± 10
6	4,5	≥ 0,6	125,0	48	± 10
12	9,0	≥ 1,2	63,1	190	± 10
21	15,75	≥ 2,1	35,5	590	± 10
24	18,0	≥ 2,4	30,0	800	± 10
48	36,0	≥ 4,8	15,4	3'100	± 10
60	45,0	≥ 6,0	12,5	4'800	± 13
110	82,5	≥ 11,0	6,8	16'000	± 15

Ordering example

SIM 2 1 2 24VDC 2

_____KV2

_____Coil voltage

_____Soldering tags

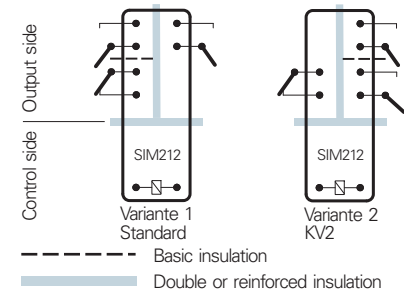
_____Number of NC contacts

_____Number of NO contacts

_____Type designation

General data

Circuit diagram (view on relay upper side)



Mechanical life	> 10 x 10 ⁶ operations
Switching frequency, mechanical	15Hz
Response time	typically 10ms
Drop-out time**	typically 4ms
Bounce time of NO contact	typically 6ms
Bounce time of NC contact	typically 12ms
Shock resistance	16ms NO contact > 10g
Vibration resistance	10-200Hz NO contact > 10g
Test voltage coil/contacts	5'000Veff 1min
Test voltage	
left to right contact sides	4'000Veff 1min
Test voltage	
contacts as one after the other	2'500Veff 1min
Test voltage contact open	1'500Veff 1min
Insulation resistance	10 ¹¹ Ω
Creepage resistance	CTI 250
Weight	approx. 25g
Mounting position	any
Ambient temperature	-40°C to +70°C
Type of protection	RT II
Solder bath temperature	270 °C/5s
Thermal resistance	50K/W
Temperature limit for coil	120°C
Pollution degree	2
Overvoltage category	III
Resistance to short circuiting	1'000A SCPD 10A gG (pre-fuse)

** without spark suppression

Insulation terms

Coil/contacts: Double or reinforced insulation > 14mm

Left to right contact side:

Double or reinforced insulation > 5.5mm

Contacts in one row: Basic insulation

Tests, regulations

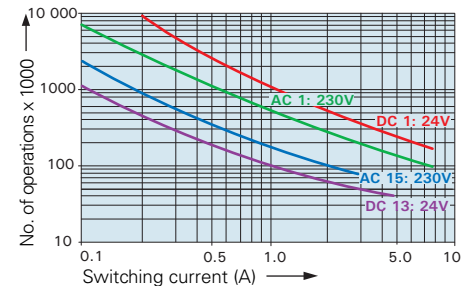
Approvals	SEV, UL, cUL, TÜV
UL File E188953	Sec. 3
Insulation class IEC 60664-1	250VAC
Protection class II	VDE 0106
Fire protection requirements	UL 94 / V0

Options, accessories

PCB socket, DIN rail socket see page 30

Diagrams

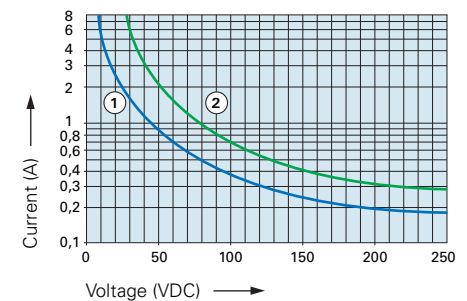
Contact lifetime for NO contact



Max. switching characteristics
(determined acc. to DIN EN 60947-5-1 table C2):
AC 15: 230V/3A
DC 13: 24V/4A
DC 13: 24V/6A/0,1Hz
UL 508: C150/R300

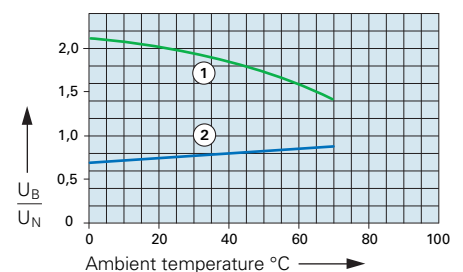
Maximal contact load at AC 1 with 230V:
2 contacts each with 8A

Load limit curve with direct current



- 1) Inductive load, L/R 40 ms
- 2) Resistive load

Excitation voltage range



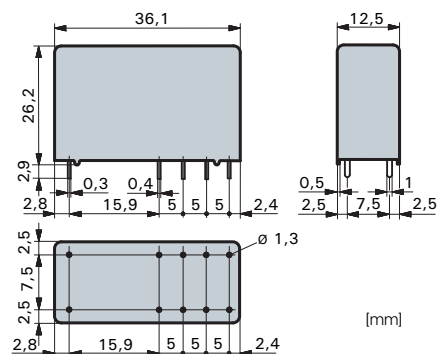
- 1) Max. excitation voltage with contact load ≤ 2A
- 2) Min. excitation voltage (guaranteed values) without previous operation

No heat accumulation due to intrinsic heating of other components.
Continuous duty 100%.



Relay data

- PCB relay with forcibly guided contacts
- Protective separation between coil and contacts (leakage and creepage distances > 14mm); protective separation between left and right contact side (leakage and creeping distances > 5.5mm)
- EN 50205, type A
- Contact mounting:
SIM312 3NO/1NC
SIM222 2NO/2NC
- Small external dimensions
- Mean coil power 1W
- Holding power 0.29W



Contact material	AgSnO ₂ +0,2μm Au
Type of contact	Crest contact
Rated switching capacity	250VAC 8A AC1 2'000VA
Electr. life AC1 (360 cycles/h)	approx.100'000
Inrush current max.	20A for 20ms
Switching voltage range	5 to 250 VDC/VAC
Switching current range*	10mA to 8A
Switching capacity range*	0,06VA(W) to 2'000VA
Contact resistance (as delivered)	<100mΩ/28V/100mA

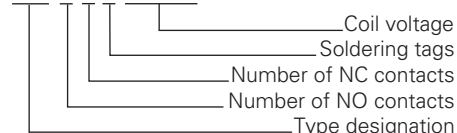
* Guide values

**Standard coils for direct current
(other voltages on request)**

Nominal voltage VDC	Min. pick-up voltage at 20°C	Drop-out voltage at 20 °C	Nominal current in mA	Resistance in Ohm at 20 °C	Tolerance in %
5	3,75	≥ 0,5	181,8	275	± 10
6	4,5	≥ 0,6	166,0	36	± 10
12	9,0	≥ 1,2	85,7	140	± 10
21	15,75	≥ 2,1	46,6	450	± 10
24	18,0	≥ 2,4	40,0	600	± 10
48	36,0	≥ 4,8	20,8	2'300	± 10
60	45,0	≥ 6,0	16,6	3'600	± 13
110	82,5	≥ 11,0	9,6	12'000	± 15

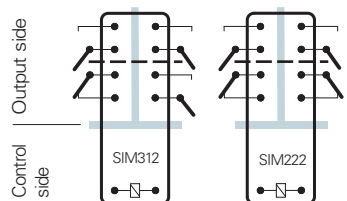
Ordering example

SIM 3 1 2 24VDC



General data

Circuit diagram (view on relay upper side)



 Basic insulation
 Double or reinforced insulation

Mechanical life	> 10 x 10 ⁶ operations
Switching frequency, mechanical	15Hz
Response time	typically 8ms
Drop-out time**	typically 4ms
Bounce time of NO contact	typically 6ms
Bounce time of NC contact	typically 12ms
Shock resistance 16ms	NO contact > 10g
Vibration resistance	
10-200Hz	NO contact > 10g
Test voltage coil/contacts	5'000Veff 1min
Test voltage	
left to right contact sides	4'000Veff 1min
Test voltage	
contacts as one after the other	2'500Veff 1min
Test voltage contact open	1'500Veff 1min
Insulation resistance	10 ¹¹ Ω
Creepage resistance	CTI 250
Weight	approx. 25g
Mounting position	any
Ambient temperature	-40°C to +70°C
Type of protection	RT II
Solder bath temperature	270 °C/5s
Thermal resistance	50K/W
Temperature limit for coil	120°C
Pollution degree	2
Overvoltage category	III
Resistance to short circuiting	1'000A SCPD 10A gG (pre-fuse)

** without spark suppression

Insulation terms

Coil/contacts:
Double or reinforced insulation > 14mm
Left to right contact side:
Double or reinforced insulation > 5.5mm
Contacts in one row: Basic insulation

Tests, regulations

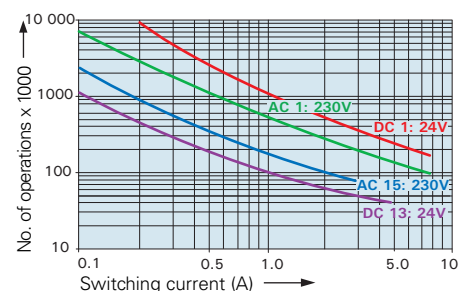
Approvals	SEV, UL, cUL, TÜV
UL File E18895	Sec. 3
Insulation class IEC 60664-1	250VAC
Protection class II	VDE 0106
Fire protection requirements	UL 94 / V0

Options, accessories

PCB socket, DIN rail socket	see page 30
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Diagrams

Contact lifetime for NO contact



Max. switching characteristics
(determined acc. to DIN EN 60947-5-1 table C2):

AC 15: 230V/3A

DC 13: 24V/4A

DC 13: 24V/6A/0.1Hz

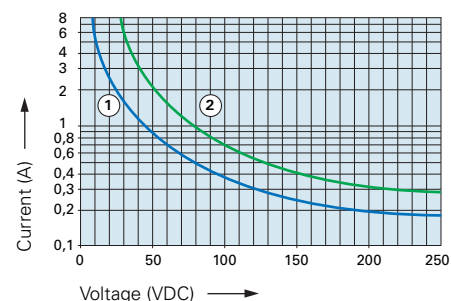
UL 508: C150/R300

Maximal contact load at AC 1 with 230V:

2 contacts each with 8A

3 contacts each with 6A

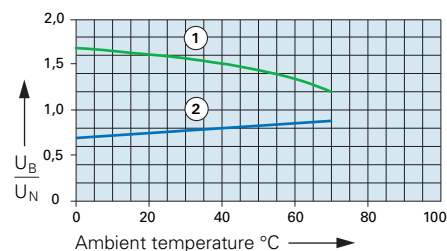
Load limit curve with direct current



1) Inductive load, L/R 40 ms

- 1) Inductive load
- 2) Resistive load

Excitation voltage range



1) Max. excitation voltage with contact load $\leq 2A$

2) Min. excitation voltage (guaranteed values) without previous operation

No heat accumulation due to intrinsic heating of other components.
Continuous duty 100%.