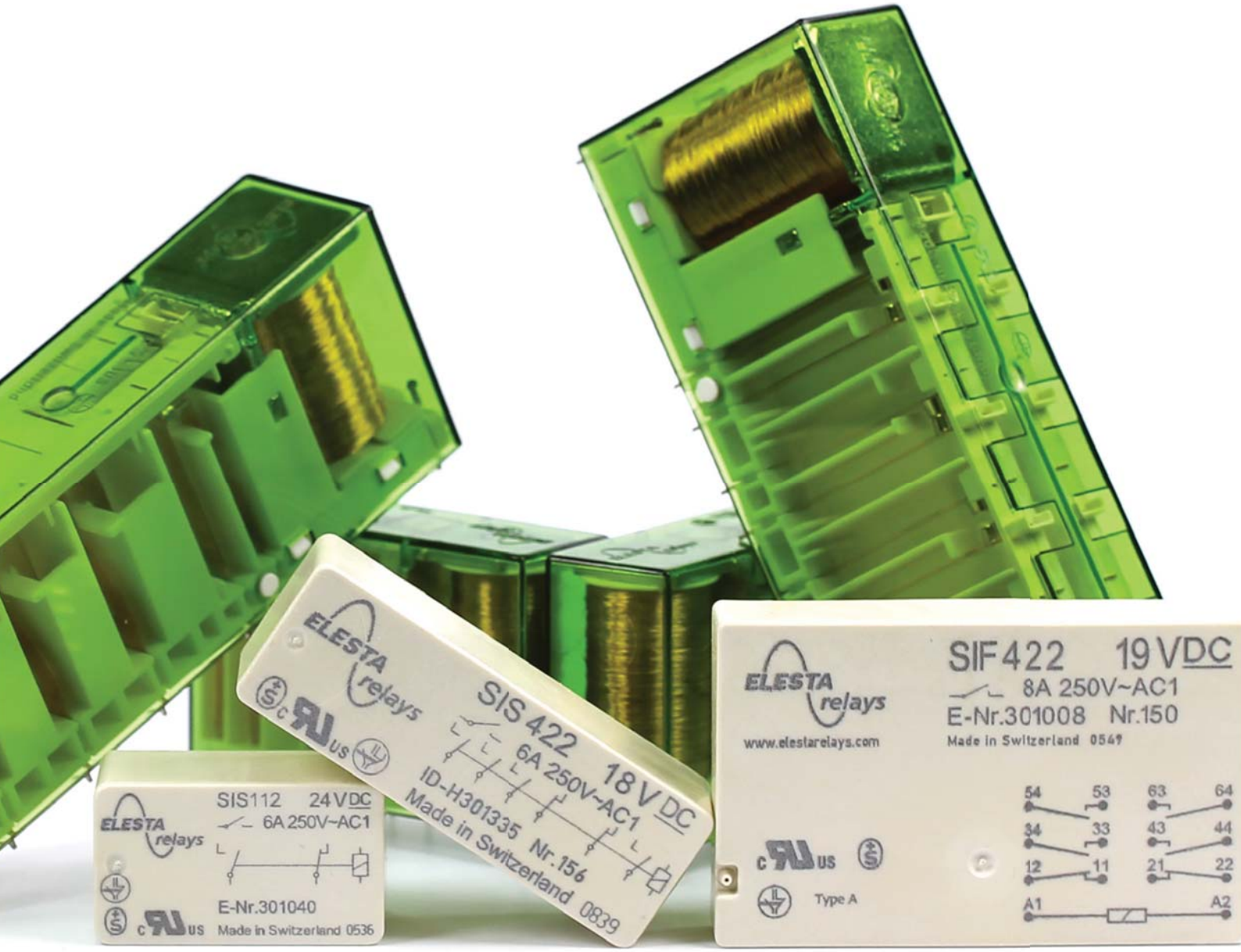
ELESTA relays

Product Catalogue

Relays with forcibly guided contacts



Product Catalogue - Relays with forcibly guided contacts
Edition 06/2013

Publisher:
ELESTA relays GmbH, Bad Ragaz, Switzerland

The company ELESTA relays GmbH was founded in 1997 as a producer of relays with forcibly guided contacts, but our roots date back to the middle of the last century. Since then, relays have been designed and manufactured in Bad Ragaz in the Swiss canton of St. Gallen.

The distinctive feature of these electromechanic relays is the special contact set compliant with EN 50205. All contacts are interlinked in such a way that NC contact and NO contact must never be closed simultaneously, even in case of a fault.

Relays with forcibly guided contacts are primarily used in control units for functional safety applications, and therefore wherever life and health of people need to be protected. Through the use of relays with forcibly guided contacts load and monitoring circuits can easily be linked together in safety controls. High diagnostic coverage and reliability are characteristics that predestine these relays for use in machine and plant construction as well as in process technology, medical equipment, elevator controls or railway technology, to name just a few applications.

17 relay series with 2 to 10 contacts form the basis for a large number of variants, covering switching currents from 3mA to 16 A as well as excitation voltages of 3 VDC up to 220 VDC. Owing to the use of advanced materials and newly developed contact systems our relays guarantee superior system availability. Energy-efficient relay drivers and carefully selected materials support the eco-friendly control design.

Customer benefit means that our relays are tailored to the requirements of our customers. The possibilities range from simple coil adjustments to encoded sets of contacts with special relay drivers. This includes variants that are geared towards compliance with certain standard specifications such as EN 50155 (railway applications). These individual solutions are developed in close dialogue with the customer. In doing so, customers can, of course, depend on our reliable and qualified consulting.

Innovation is our impetus. A wealth of experience and continuous training, close cooperation with research institutions and suppliers, as well as active participation in technical and standardization bodies enables us to implement new technologies and market requirements in forward-looking products early on.

The entire company of Elesta relays GmbH follows the LEAN principle. Clear structures are evident not only in our „Green Factory“ (which does not require any fossil fuels) but also in our operations (for which we often set higher standards than is required by EN ISO 9001:2008). High product quality, supply readiness and service quality are the three pillars on which the company rests. At the same time they are the guiding principles our employees identify with.

The deployment of relays with forcibly guided contacts requires trust; a responsibility that we readily accept.

Harald Förster
Geschäftsführer / CEO
ELESTA relays GmbH

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Product Overview

Relays with forcibly guided contacts

Relays	SIS 2	SIS 3	SIS 3 sen	SIS 4	SIS 6	SIF 3	SIF 4	SIF 6	SIR 282	SIR 282 sen	SGR 282 Z	SGR 282 Z sen
Features	Small dimensions High shock resistance Large excitation voltage Low coil power loss High switching reliability	Very small dimensions High shock resistance Large excitation voltage Very high switching reliability	Very small dimensions High shock resistance Large excitation voltage Low coil power loss High switching reliability	High shock resistance Large excitation voltage Low coil power loss Very high switching reliability	Very small dimensions High shock resistance Large excitation voltage Very high switching reliability	*Available by end of 2013*	Extremely flat design Large switching current range Possible component installation under the relay	Extremely flat design Large switching current range Possible component installation under the relay	Classic 2 CO relay Extrusion-coated coil design suitable for use in ATEX areas	Classic 2 CO relay Low coil power loss Extrusion-coated coil design suitable for use in ATEX areas	Classic 2 CO relay Extrusion-coated coil design suitable for use in ATEX areas	Classic 2 CO relay Low coil power loss Extrusion-coated coil design suitable for use in ATEX areas
Number of Contacts	2	3	3	4	6	3	4	6	2CO	2CO	2CO	2CO
Contact Material	AgCuNi	AgCuNi	AgCuNi	AgCuNi	AgCuNi	AgCuNi	AgCuNi	AgCuNi	$AgSnO_2$	$AgSnO_2$	AgCuNi[2]	AgCuNi[2]
Type of Contact	Notched crown	Notched crown	Notched crown	Notched crown	Notched crown	Notched crown	Notched crown	Notched crown	Single contact	Single contact	Single contact	Single contact
Coil Voltage	5VDC - 60VDC	5VDC - 110VDC	5VDC - 60VDC	5VDC - 110VDC	5VDC - 110VDC	5VDC - 110VDC	5VDC - 110VDC	5VDC - 110VDC	5VDC - 110VDC	5VDC - 110VDC	5VDC - 110VDC	5VDC - 110VDC
Coil Capacity[1]	270mW	600mW	400mW	500mW	660mW	600mW	700mW	660mW	1000mW	700mW	1000mW	700mW
Switching Current Range	3mA - 6A	3mA - 6A	3mA - 6A	3mA - 6A	3mA - 6A	3mA - 8A	3mA - 8A	3mA - 8A	10mA - 8A	10mA - 8A	10mA - 6A	10mA - 6A
Test Voltage Open Contact	1‘500Veff	1‘500Veff	1‘500Veff	1‘500Veff	1‘500Veff	1‘500Veff	1‘500Veff	1‘500Veff	1‘500Veff	1‘500Veff	1‘500Veff	1‘500Veff
Test Voltage between Contacts	5‘000Veff	4‘000Veff	4‘000Veff	4‘000Veff	4‘000Veff	4‘000Veff	4‘000Veff	4‘000Veff	4‘000Veff	4‘000Veff	4‘000Veff	4‘000Veff
Test Voltage Coil/ Contact	2‘500Veff	2‘500Veff	2‘500Veff	4‘000Veff (SIS222) 2‘500Veff (SIS312)	2‘500Veff	4‘000Veff	4‘000Veff	4‘000Veff	5‘000Veff	5‘000Veff	5‘000Veff	5‘000Veff
Protection	RT III	RT III	RT III	RT III	RT III	RT II	RT II	RT II	RT II	RT II	RT II	RT II
Dimensions (external) in mm	L 29.2 W 16.6 H 16.5	L 29.2 W 16.6 H 16.5	L 29.2 W 16.6 H 16.5	L 48 W 16.6 H 16.5	L 48 W 16.6 H 16.5	L 33.7 W 29.4 H 10.9	L 41 W 29.4 H 10.9	L 53.6 W 33.5 H 10.9	L 30.2 W 12.7 H 25.6	L 30.2 W 12.7 H 25.6	L 30.2 W 12.7 H 25.6	L 30.2 W 12.7 H 25.6
Approvals	SEV, UL, cUL, TÜV	SEV, UL, cUL, TÜV	SEV, UL, cUL, TÜV	SEV, UL, cUL, TÜV	SEV, UL, cUL, TÜV	UL, cUL, TÜV	SEV, UL, cUL, TÜV	SEV, UL, cUL, TÜV	SEV, UL, cUL, TÜV	SEV, UL, cUL, TÜV	SEV, UL, cUL, TÜV	SEV, UL, cUL, TÜV
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[1]Reference temperature 20°C
[2]With 4-6µm Au optional
[3]Between left and right contact side
[4]Between control contacts
[5]Between control and output contacts
[6]Between output contacts

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Product Overview

Relays with forcibly guided contacts

SGR 282 ZK	SIM 2	SIM 3	SIM 4	SLR 4	SIR 4	SIR 4 sen	SIR 4 P	SIR 6	SIR 6 sen	SIR 8	SIR 10	SIP 6
Extrusion-coated coil design suitable for use in ATEX areas Very high switching reliability	Extrusion-coated coil design suitable for use in ATEX areas High switching reliability Extremely high leakage and creepage distances	Extrusion-coated coil design suitable for use in ATEX areas High switching reliability Extremely high leakage and creepage distances	Extrusion-coated coil design suitable for use in ATEX areas High switching reliability Extremely high leakage and creepage distances	Powerful Small, horizontal design Large switching current range High switching reliability	Powerful Small design High switching reliability	Powerful Small design High switching reliability Low coil power loss Wide coil working range	Extremely powerful Small design For loads with a high surge current High switching reliability	Powerful Small design High switching reliability Contact assignment configurable	Powerful Small design High switching reliability Low coil power loss Wide coil working range Contact assignment configurable	Powerful High switching reliability Wide coil working range Contact assignment configurable	Powerful High switching reliability Wide coil working range Contact assignment configurable	Extremely powerful High switching reliability For the highest loads during 3-phase applications and DC loads
2CO	2	3	4	4	4	4	4	6	6	8	10	6
AgCuNi	$AgSnO_2$	$AgSnO_2$	$AgSnO_2$	$AgSnO_2$	$AgSnO_2$	$AgSnO_2$	$AgSnO_2$	$AgSnO_2$	$AgSnO_2$	$AgSnO_2$	$AgSnO_2$	$AgSnO_2$
Notched crown	Crest contact	Crest contact	Crest contact	Crest contact	Crest contact	Crest contact	Single contact	Crest contact	Crest contact	Crest contact	Crest contact	Single contact
5VDC - 110VDC	5VDC - 110VDC	5VDC - 110VDC	5VDC - 110VDC	5VDC - 110VDC	5VDC - 110VDC	5VDC - 60VDC	5VDC - 110VDC	5VDC - 110VDC	5VDC - 60VDC	5VDC - 220VDC	5VDC - 220VDC	5VDC - 220VDC
700mW	500mW	750mW	1000mW	600mW	600mW	360mW	750mW	750mW	500mW	1300mW	1300mW	1300mW
4mA - 8A	10mA - 8A	10mA - 8A	10mA - 8A	10mA - 10A	10mA - 10A	10mA - 10A	5mA - 12A	10mA - 10A	10mA - 10A	10mA - 10A	10mA - 10A	5mA - 16A
1‘500Veff	1‘500Veff	1‘500Veff	1‘500Veff	1‘500Veff	1‘500Veff	1‘500Veff	1‘500Veff	1‘500Veff	1‘500Veff	1‘500Veff	1‘500Veff	1‘500Veff
4‘000Veff	4‘000Veff	2‘500Veff 4‘000Veff[3]	2‘500Veff 4‘000Veff[3]	4‘000Veff[4] 4‘000Veff[5] 5‘000Veff[6]	2‘500Veff[4] 5‘000Veff[5] 4‘000Veff[6]	2‘500Veff[4] 5‘000Veff[5] 4‘000Veff[6]	2‘500Veff[4] 5‘000Veff[5] 4‘000Veff[6]	2‘500Veff[4] 5‘000Veff[5] 4‘000Veff[6]	2‘500Veff[4] 5‘000Veff[5] 4‘000Veff[6]	4‘000Veff	4‘000Veff	2‘500Veff[4] 5‘000Veff[5] 4‘000Veff[6]
5‘000Veff	5‘000Veff	5‘000Veff	5‘000Veff	2‘500Veff	2‘500Veff	2‘500Veff	2‘500Veff	2‘500Veff	2‘500Veff	5‘000Veff	2‘500Veff	2‘500Veff
RT II	RT II	RT II	RT II	RT II	RT II	RT II	RT II	RT II	RT II	RT II	RT II	RT II
L 30.2 W 12.7 H 25.6	L 27.4 W 12.5 H 26.2	L 36.1 W 12.5 H 26.2	L 36.1 W 12.5 H 26.2	L 53.3 W 33.4 H 16.5	L 46.4 W 16 H 30.7	L 46.4 W 16 H 30.7	L 46.4 W 16 H 30.7	L 58.9 W 16 H 30.7	L 58.9 W 16 H 30.7	L 85.5 W 20 H 32	L 85.5 W 20 H 32	L 84.6 W 20 H 32
UL, cUL, TÜV	SEV, UL, cUL, TÜV	SEV, UL, cUL, TÜV	SEV, UL, cUL, TÜV	SEV, UL, cUL, TÜV	SEV, UL, cUL, TÜV	SEV, UL, cUL, TÜV	SEV, UL, cUL, TÜV	SEV, UL, cUL, TÜV	SEV, UL, cUL, TÜV	SEV, UL, cUL, TÜV	SEV, UL, cUL, TÜV	SEV, UL, cUL, TÜV
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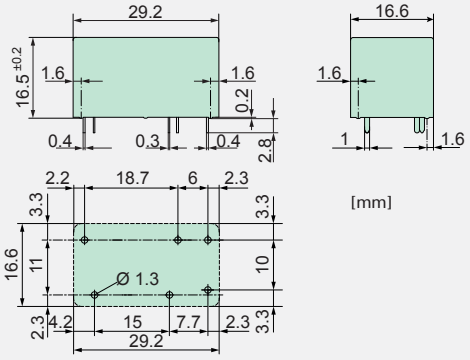
SIS 2 Series

Relay Key Data

- PCB Relay with forcibly guided contacts
- Protective separation between control and load curcuit (leakage and creepage distances >10mm)
- EN50205 type A
- Double and reinforced insulation between the contacts
- Contact mounting: SIS112 1NO / 1NC
- Small external dimensions
- Mean coil power 0.27 W
- Holding coil power 0.08 W
- For railway application (EN50155) on request

Dimensions



Contact Data

Contact material	AgCuNi+0.2-0.4µm Au
Type of contact	Single contact with notched crown
Rated switching capacity	250VAC 6A AC1 1'500VA
Electr. life AC 1(360 cycles/h)	>90'000
Inrush current max.	30A for 20ms
Switching voltage range	5 to 250 VDC/VAC
Switching current range*	3mA to 6A
Switching capacity range*	40mW to 1'500W(VA)
Contact resistance (as delivered)	≤100mΩ/6V/100mA

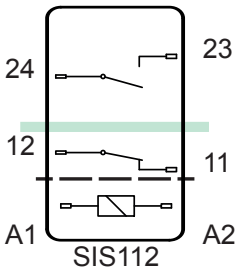
*Guided values

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
5	≤3.5	≥0.5	54.9	91 ± 10%
6	≤4.2	≥0.6	46.1	130 ± 10%
9	≤6.3	≥0.9	30.5	295 ± 10%
12	≤8.4	≥1.2	23.0	520 ± 10%
18	≤12.6	≥1.8	15.2	1'180 ± 10%
24	≤16.8	≥2.4	11.4	2'100 ± 10%
48	≤33.6	≥4.8	5.7	8'350 ± 13%
60	≤42.0	≥6.0	4.5	13'100 ± 15%

Circuit Diagram (view on relay upper side)



Insulation Data

- Basic insulation	at 250VAC
- Air and creepage distance	>4mm
- Test voltage	2'500V/50Hz/1min
- Double or reinforced insulation	
- Air and creepage distance	at 250VAC >10mm
- Test voltage	5'000V/50Hz/1min
Test voltage contact open	1'500V/50Hz/1min
Creepage resistance	CTI 175
Pollution degree	2
Overvoltage category	III
Insulation resistance at Up 500VDC	>100MΩ

Additional Data

Mechanical endurance	>10x10^6 operations
Switching frequency, mechanical	15Hz
Response time (all NO closed)	typically 10ms
Drop-out time** (all NC closed)	typically 3ms
Bounce time of NO contact	typically 2ms
Bounce time of NC contact	typically 15ms
Shock resistance 16ms	NO > 17g NC > 7g
Vibration resistance (10-200Hz)	NO > 7g NC > 2g
Resistance to short circuiting contacts	1'000A SCPD 6A gG/gL (pre-fuse)
Ambient temperature	-40°C to +70°C
Thermal Resistance	55K/W
Temperature limit for coil	120°C
Weight	ca. 18g
Mounting position	any
Type of protection	RT III
Solder bath temperature	270°C/5s

**without spark suppression

Tests, Regulations

Approvals

UL File E188953	Sec. 5
Insulation class IEC 60664-1	250VAC
Protection class II	VDE 0106
Fire protection requirements	UL 94 / V0

Options, Accessories

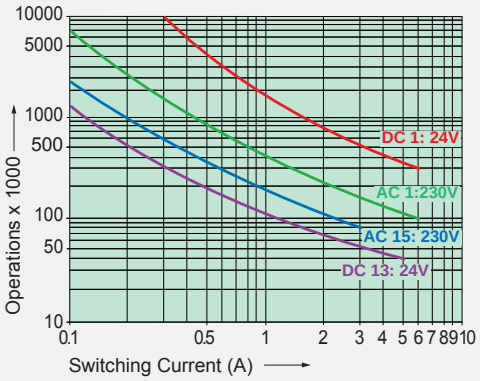
none available

Product Key

SIS 1 1 2 24VDC

- 24VDC — Coil voltage
- 2 — Soldering tags
- 1 — Number of NC contacts
- 1 — Number of NO contacts
- SIS — Type designation

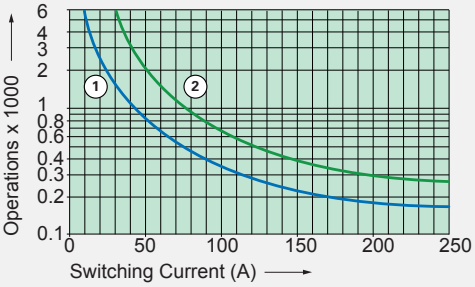
Contact Lifetime for NO Contacts



Maximal switching characteristics(EN60947-5-1)

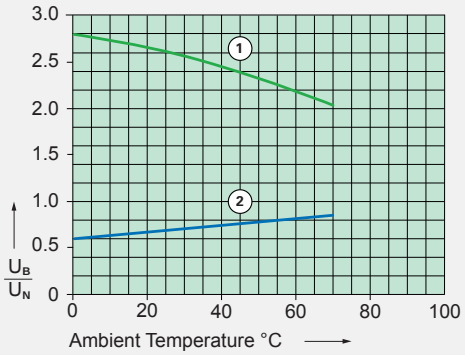
AC 1:	250V / 6A
AC 15:	230V / 3A
DC 1:	24V / 6A
DC 13:	24V / 5A / 0.1Hz
UL 508:	B300 / R300

Load Limit Curve with Direct Current



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

Excitation Voltage Range



1) Max. excitation voltage with contact load: ≤4A
2) Min. excitation voltage (guaranteed values) without previous operation

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

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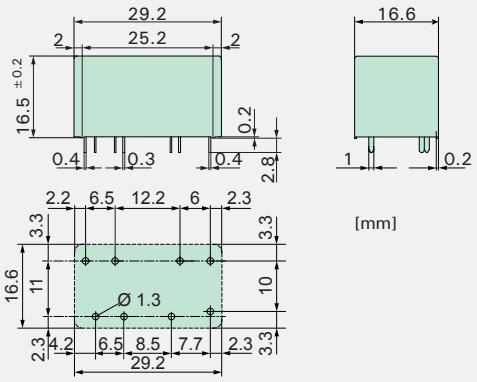
SIS 3 Series

Relay Key Data

- PCB Relay with forcibly guided contacts
- Protective separation between control and load curcuit (leakage and creepage distances >8mm)
- EN50205 type A
- Double and reinforced insulation between the contacts
- Contact mounting: SIS212 2NO / 1NC
- Small external dimensions
- Mean coil power 0.6 W
- Holding coil power 0.18 W
- For railway application (EN50155) on request

Dimensions



Contact Data

Contact material	AgCuNi+0.2-0.4µm Au
Type of contact	Single contact with notched crown
Rated switching capacity	250VAC 6A AC1 1'500VA
Electr. life AC 1(360 cycles/h)	>90'000
Inrush current max.	30A for 20ms
Switching voltage range	5 to 250 VDC/VAC
Switching current range*	3mA to 6A
Switching capacity range*	40mW to 1'500W(VA)
Contact resistance (as delivered)	≤100mΩ/6V/100mA

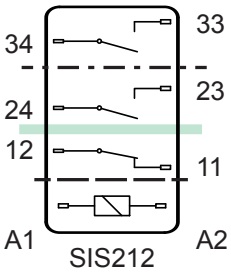
*Guided values

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
5	≤3.5	≥0.5	120.0	41.5 ± 10%
9	≤6.3	≥0.9	66.6	135 ± 10%
12	≤8.4	≥1.2	50.0	240 ± 10%
18	≤12.6	≥1.8	33.3	540 ± 10%
24	≤16.8	≥2.4	25.0	960 ± 10%
48	≤33.6	≥4.8	12.5	3'840 ± 10%
60	≤42.0	≥6.0	10.0	6'000 ± 13%
110	≤77.0	≥11.0	5.4	20'150 ± 15%

Circuit Diagram (view on relay upper side)



Insulation Data

- Basic insulation	at 250VAC
- Air and creepage distance	>4mm
- Test voltage	2'500V/50Hz/1min
- Double or reinforced insulation	
- Air and creepage distance	at 250VAC >5.5mm
- Test voltage	4'000V/50Hz/1min
- Double or reinforced insulation	
- Air and creepage distance	at 250VAC >8mm
- Test voltage	4'000V/50Hz/1min
Test voltage contact open	1'500V/50Hz/1min
Creepage resistance	CTI 175
Pollution degree	2
Overvoltage category	III
Insulation resistance at Up 500VDC	>100MΩ

Additional Data

Mechanical endurance	>10x10⁶ operations
Switching frequency, mechanical	15Hz
Response time (all NO closed)	typically 10ms
Drop-out time** (all NC closed)	typically 3ms
Bounce time of NO contact	typically 2ms
Bounce time of NC contact	typically 15ms
Shock resistance 16ms	NO > 17g NC > 10g
Vibration resistance (10-200Hz)	NO > 7g NC > 3g
Resistance to short circuiting contacts	1'000A SCPD 6A gG/gL (pre-fuse)
Ambient temperature	-40°C to +70°C
Thermal Resistance	55K/W
Temperature limit for coil	120°C
Weight	ca. 20g
Mounting position	any
Type of protection	RT III
Solder bath temperature	270°C/5s

**without spark suppression

Tests, Regulations

Approvals

UL File E188953	Sec. 5
Insulation class IEC 60664-1	250VAC
Protection class II	VDE 0106
Fire protection requirements	UL 94 / V0

Options, Accessories

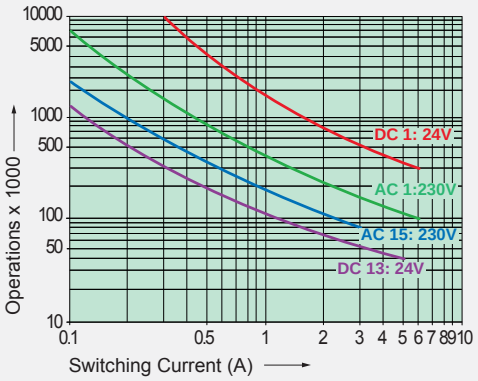
none available

Product Key

SIS 2 1 2 24VDC

- 24VDC: Coil voltage
- 2: Soldering tags
- 1: Number of NC contacts
- 2: Number of NO contacts
- SIS: Type designation

Contact Lifetime for NO contacts

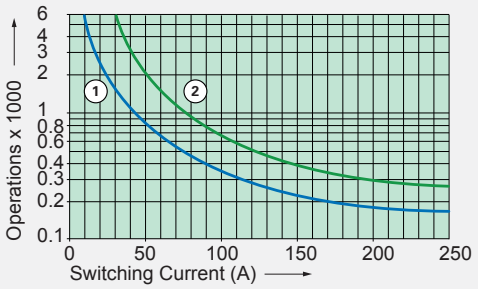


Maximal switching characteristics (DIN EN60947-5-1)

AC 1:	250V / 6A
AC 15:	230V / 3A
DC 1:	24V / 6A
DC 13:	24V / 5A / 0.1Hz
UL 508:	B300 / R300

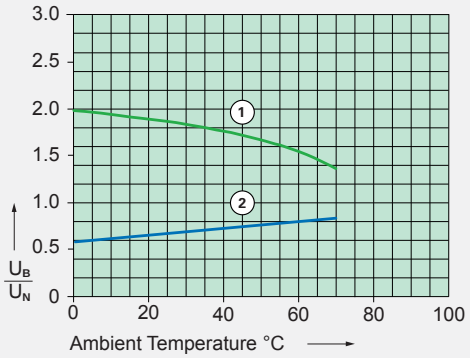
Maximal contact load at AC 1 with 230V:
2 contacts with 6A each

Load Limit Curve with Direct Current



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

Excitation Voltage Range



1) Max. excitation voltage with contact load: ≤4A
2) Min. excitation voltage (guaranteed values) without previous operation

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

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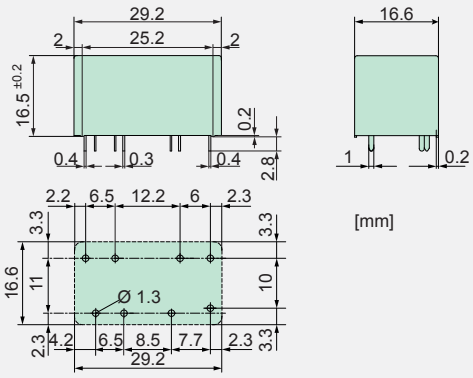
SIS 3 sensitive Series

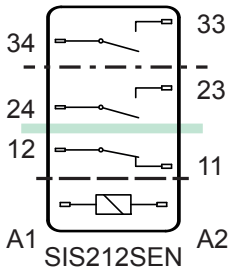
Relay Key Data

- PCB Relay with forcibly guided contacts
- Protective separation between control and load curcuit (leakage and creepage distances >8mm)
- EN50205 type A
- Double and reinforced insulation between the contacts
- Contact mounting: SIS212 2NO / 1NC
- Small external dimensions
- Mean coil power 0.4 W
- Holding coil power 0.14 W
- For railway application (EN50155) on request

Dimensions



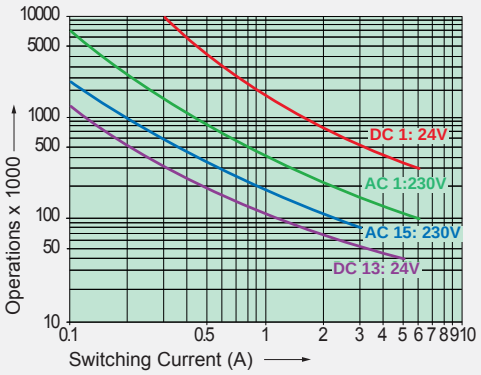
Circuit Diagram (view on relay upper side)



Insulation Data

- - -	- Basic insulation	at 250VAC
	- Air and creepage distance	>4mm
	- Test voltage	2‘500V/50Hz/1min
— · —	- Double or reinforced insulation	at 250VAC
	- Air and creepage distance	5.5mm
	- Test voltage	4‘000V/50Hz/1min
———	- Double or reinforced insulation	at 250VAC
	- Air and creepage distance	>8mm
	- Test voltage	4‘000V/50Hz/1min
Test voltage contact open		1‘500V/50Hz/1min
Creepage resistance		CTI 175
Pollution degree		2
Overvoltage category		III
Insulation resistance at Up 500VDC		>100MΩ

Contact Lifetime for NO Contacts

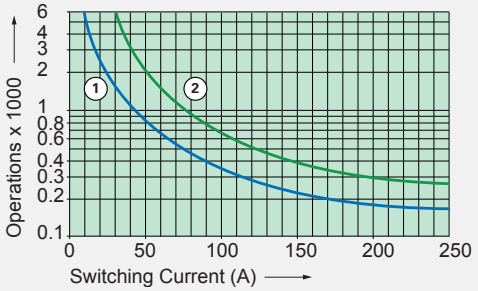


Maximal switching characteristics (DIN EN60947-5-1)

AC 1:	250V / 6A
AC 15:	230V / 3A
DC 1:	24V / 6A
DC 13:	24V / 5A / 0.1Hz
UL 508:	B300 / R300

Maximal contact load at AC 1 with 230V:
2 contacts with 6A each

Load Limit Curve with Direct Current



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

Contact Data

Contact material	AgCuNi+0.2-0.4µm Au
Type of contact	Single contact with notched crown
Rated switching capacity	250VAC 6A AC1 1‘500VA
Electr. life AC 1(360 cycles/h)	>90‘000
Inrush current max.	30A for 20ms
Switching voltage range	5 to 250 VDC/VAC
Switching current range*	3mA to 6A
Switching capacity range*	40mW to 1‘500W(VA)
Contact resistance (as delivered)	≤100mΩ/6V/100mA

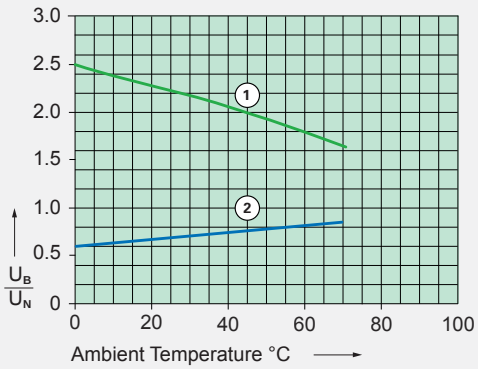
*Guided values

Additional Data

Mechanical endurance	>10x10⁶ operations
Switching frequency, mechanical	15Hz
Response time (all NO closed)	typically 10ms
Drop-out time** (all NC closed)	typically 3ms
Bounce time of NO contact	typically 2ms
Bounce time of NC contact	typically 15ms
Shock resistance 16ms	NO > 17g NC > 10g
Vibration resistance (10-200Hz)	NO > 7g NC > 3g
Resistance to short circuiting contacts	1‘000A SCPD 6A gG/gL (pre-fuse)
Ambient temperature	-40°C to +70°C
Thermal Resistance	55K/W
Temperature limit for coil	120°C
Weight	ca. 20g
Mounting position	any
Type of protection	RT III
Solder bath temperature	270°C/5s

**without spark suppression

Excitation Voltage Range



1) Max. excitation voltage with contact load: ≤4A
2) Min. excitation voltage (guaranteed values) without previous operation

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

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
5	≤3.75	≥0.5	80.0	62.5 ± 10%
6	≤4.5	≥0.6	66.6	90 ± 10%
9	≤6.75	≥0.9	44.5	202 ± 10%
12	≤9.0	≥1.2	33.3	360 ± 10%
18	≤13.5	≥1.8	22.2	810 ± 10%
24	≤18.0	≥2.4	16.6	1‘440 ± 10%
48	≤36.0	≥4.8	8.3	5‘750 ± 13%
60	≤45.0	≥6.0	6.6	9‘000 ± 15%

Tests, Regulations

Approvals

UL File E188953	Sec. 5
Insulation class IEC 60664-1	250VAC
Protection class II	VDE 0106
Fire protection requirements	UL 94 / V0

Options, Accessories

none available

Product Key

SIS 2 1 2 24VDC SEN

- SEN — sensitive coil
- 24VDC — Coil voltage
- 2 — Soldering tags
- 1 — Number of NC contacts
- 2 — Number of NO contacts
- SIS — Type designation

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Fon: +41 (0)81 303 54 00
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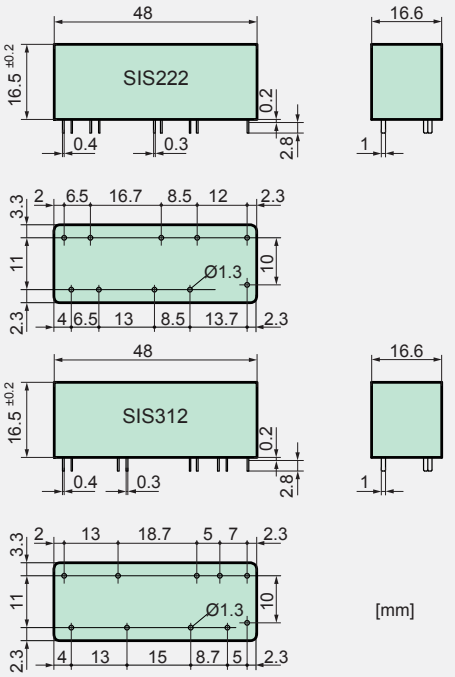
SIS 4 Series

Relay Key Data

- PCB Relay with forcibly guided contacts
- Protective separation between control and load curcuit (leakage and creepage distances >8mm)
- EN50205 type A
- Double and reinforced insulation between the contacts
- Contact Mounting: SIS312 3NO / 1NC
  SIS222 2NO / 2NC
- Small external dimensions
- Mean coil power 0.5 W
- Holding coil power 0.15 W
- For railway application (EN50155) on request

Dimensions



Contact Data

Contact material	AgCuNi+0.2-0.4µm Au
Type of contact	Single contact with notched crown
Rated switching capacity	250VAC 6A AC1 1'500VA
Electr. life AC 1(360 cycles/h)	>90'000
Inrush current max.	30A for 20ms
Switching voltage range	5 to 250 VDC/VAC
Switching current range*	3mA to 6A
Switching capacity range*	40mW to 1'500W(VA)
Contact resistance (as delivered)	≤100mΩ/6V/100mA

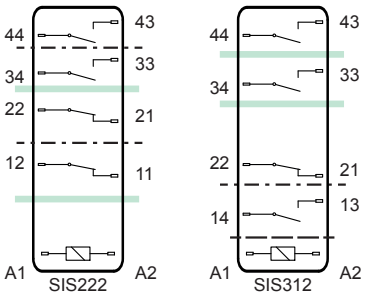
*Guided values

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
5	3.5	≥0.5	100	50 ± 10%
9	6.3	≥0.9	56.2	160 ± 10%
12	8.4	≥1.2	42.1	285 ± 10%
18	12.6	≥1.8	28.1	640 ± 10%
24	16.8	≥2.4	20.8	1'150 ± 10%
48	33.6	≥4.8	10.4	4'600 ± 10%
60	42.0	≥6.0	8.3	7'200 ± 13%
110	77.0	≥11.0	4.5	24'200 ± 15%

Circuit Diagram (view on relay upper side)



Insulation Data

- Basic insulation	at 250VAC
- Air and creepage distance	>4mm
- Test voltage	2'500V/50Hz/1min
- Double or reinforced insulation	
- Air and creepage distance	at 250VAC >5.5mm
- Test voltage	4'000V/50Hz/1min
- Double or reinforced insulation	
- Air and creepage distance	at 250VAC >8mm
- Test voltage	4'000V/50Hz/1min
Test voltage contact open	1'500V/50Hz/1min
Creepage resistance	CTI 175
Pollution degree	2
Overvoltage category	III
Insulation resistance at Up 500VDC	>100MΩ

Additional Data

Mechanical endurance	>10x10⁶ operations
Switching frequency, mechanical	15Hz
Response time (all NO closed)	typically 15ms
Drop-out time** (all NC closed)	typically 5ms
Bounce time of NO contact	typically 2ms
Bounce time of NC contact	typically 15ms
Shock resistance 16ms	NO > 10g NC > 10g
Vibration resistance (10-200Hz)	NO > 10g NC > 4g
Resistance to short circuiting contacts	1'000A SCPD 6A gG/gL (pre-fuse)
Ambient temperature	-40°C to +70°C
Thermal Resistance	45K/W
Temperature limit for coil	120°C
Weight	ca. 30g
Mounting position	any
Type of protection	RT III
Solder bath temperature	270°C/5s

**without spark suppression

Tests, Regulations

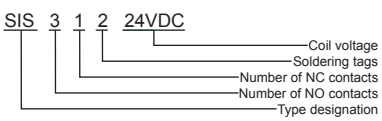
Approvals

UL File E188953	Sec. 5
Insulation class IEC 60664-1	250VAC
Protection class II	VDE 0106
Fire protection requirements	UL 94 / V0

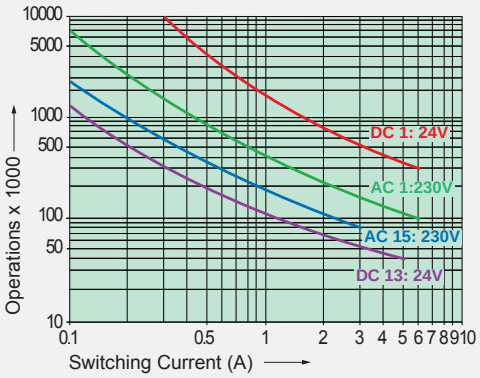
Options, Accessories

none available

Product Key



Contact Lifetime for NO Contacts

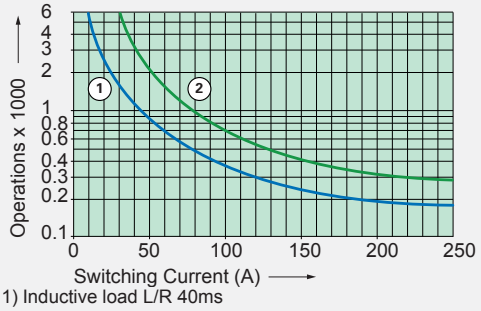


Maximal switching characteristics (DIN EN60947-5-1)

AC 1:	250V / 6A
AC 15:	230V / 3A
DC 1:	24V / 6A
DC 13:	24V / 5A / 0.1Hz
UL 508:	B300 / R300

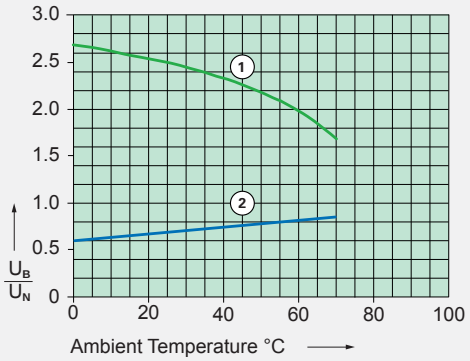
Maximal contact load at AC 1 with 230V:
2 contacts with 6A each
3 contacts with 4A each

Load Limit Curve with Direct Current



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

Excitation Voltage Range



1) Max. excitation voltage with contact load: ≤4A
2) Min. excitation voltage (guaranteed values) without previous operation

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

ELESTA relays GmbH, Heuteilstrasse 18, CH - 7310 Bad Ragaz, Switzerland
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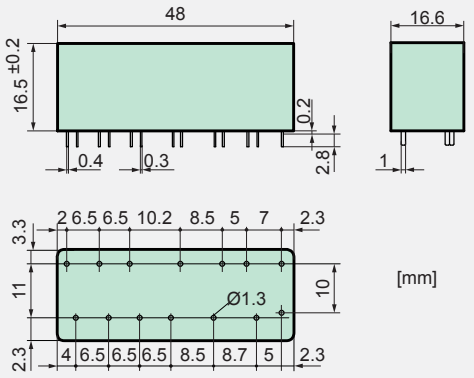
SIS 6 Series

Relay Key Data

- PCB Relay with forcibly guided contacts
- Protective separation between control and load curcuit (leakage and creepage distances >8mm)
- EN50205 type A
- Double and reinforced insulation between the contacts
- Contact mounting: SIS422 4NO / 2NC
- Small external dimensions
- Mean coil power 0.66 W
- Holding coil power 0.20 W
- For railway application (EN50155) on request

Dimensions



Contact Data

Contact material	AgCuNi+0.2µm Au
Type of contact	Single contact with notched crown
Rated switching capacity	250VAC 6A AC1 1'500VA
Electr. life AC 1(360 cycles/h)	>90'000
Inrush current max.	30A for 20ms
Switching voltage range	5 to 250 VDC/VAC
Switching current range*	3mA to 6A
Switching capacity range*	40mW to 1'500W(VA)
Contact resistance (as delivered)	≤100mΩ/6V/100mA

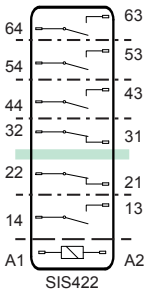
*Guided values

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
5	3.5	≥0.5	133	37.5 ± 10%
9	6.3	≥0.9	73.7	122 ± 10%
12	8.4	≥1.2	55.8	215 ± 10%
18	12.6	≥1.8	37.1	485 ± 10%
24	16.8	≥2.4	29.7	860 ± 10%
48	33.6	≥4.8	13.9	3'450 ± 10%
60	42.0	≥6.0	11.1	5'400 ± 13%
110	77.0	≥11.0	6.0	18'300 ± 15%

Circuit Diagram (view on relay upper side)



Insulation Data

- Basic insulation	at 250VAC
- Air and creepage distance	>4mm
- Test voltage	2'500V/50Hz/1min
- Double or reinforced insulation	
- Air and creepage distance	at 250VAC >5.5mm
- Test voltage	4'000V/50Hz/1min
- Double or reinforced insulation	
- Air and creepage distance	at 250VAC >8mm
- Test voltage	4'000V/50Hz/1min
Test voltage contact open	1'500V/50Hz/1min
Creepage resistance	CTI 175
Pollution degree	2
Overvoltage category	III
Insulation resistance at Up 500VDC	>100MΩ

Additional Data

Mechanical endurance	>10x10^6 operations
Switching frequency, mechanical	15Hz
Response time (all NO closed)	typically 15ms
Drop-out time** (all NC closed)	typically 5ms
Bounce time of NO contact	typically 2ms
Bounce time of NC contact	typically 15ms
Shock resistance 16ms	NO > 10g NC > 9g
Vibration resistance (10-200Hz)	NO > 10g NC > 3g
Resistance to short circuiting contacts	1'000A SCPD 6A gG/gL (pre-fuse)
Ambient temperature	-40°C to +70°C
Thermal Resistance	45K/W
Temperature limit for coil	120°C
Weight	ca. 35g
Mounting position	any
Type of protection	RT III
Solder bath temperature	270°C/5s

**without spark suppression

Tests, Regulations

Approvals

UL File E188953	Sec. 5
Insulation class IEC 60664-1	250VAC
Protection class II	VDE 0106
Fire protection requirements	UL 94 / V0

Options, Accessories

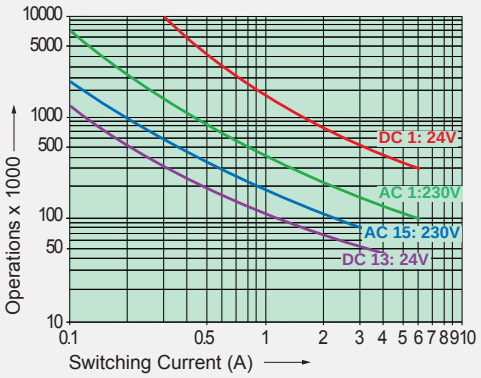
none available

Product Key

SIS 4 2 2 24VDC

- 24VDC: Coil voltage
- 2: Soldering tags
- 2: Number of NC contacts
- 4: Number of NO contacts
- SIS: Type designation

Contact Lifetime for NO Contacts

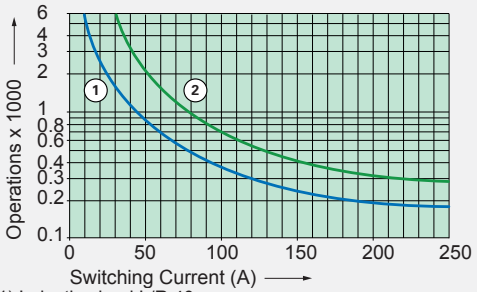


Maximal switching characteristics (DIN EN60947-5-1)

AC 1:	250V / 6A
AC 15:	230V / 3A
DC 1:	24V / 6A
DC 13:	24V / 5A / 0.1Hz
UL 508:	B300 / R300

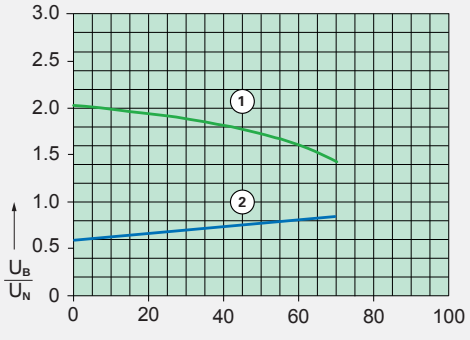
Maximal contact load at AC 1 with 230V:
2 contacts with 6A each
3 contacts with 4A each
4 contacts with 3A each

Load Limit Curve with Direct Current



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

Excitation Voltage Range



1) Max. excitation voltage with contact load: ≤4A
2) Min. excitation voltage (guaranteed values) without previous operation

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

ELESTA relays GmbH, Heuteilstrasse 18, CH - 7310 Bad Ragaz, Switzerland
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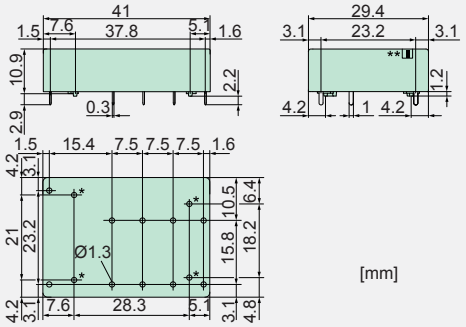
SIF 4 Series

Relay Key Data

- PCB Relay with forcibly guided contacts
- Protective separation between coil and contacts (>5.5mm) and contacts side by side (>5.5mm)
- EN50205 type A
- Double and reinforced insulation
- SMD arrangement below relay possible
- Contact Mounting: SIF312 3NO / 1NC
- Compact height: only 10.9mm
- Mean coil power 0.70 W
- Holding coil power 0.21 W
- For railway application (EN50155) on request

Dimensions



[mm]

* Do not drill when SMD arrangement

** Open breathing hole

Contact Data

Contact material	AgCuNi+0.2µm Au
Type of contact	Single contact with notched crown
Rated switching capacity	250VAC 8A AC1 2'000VA
Electr. life AC 1(360 cycles/h)	approx.100'000
Inrush current max.	30A for 20ms
Switching voltage range	5 to 250 VDC/VAC
Switching current range*	3mA to 8A
Switching capacity range*	40mW to 2'000W(VA)
Contact resitance (as delivered)	≤100mΩ/6V/100mA

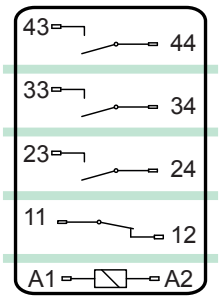
*Guided values

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
5	≤3.5	≥0.5	140.0	37.5 ± 10%
12	≤8.4	≥1.2	58.5	205 ± 10%
18	≤12.6	≥1.8	39.1	460 ± 10%
20	≤14.0	≥2.0	35.0	570 ± 10%
24	≤16.8	≥2.4	29.2	820 ± 10%
48	≤33.6	≥4.8	14.6	3'280 ± 10%
60	≤42.0	≥6.0	11.7	5'100 ± 13%
110	≤77.0	≥11.0	6.3	17'250 ± 15%

Circuit Diagram (view on relay upper side)



SIF312

Insulation Data

- Double or reinforced insulation	at 250VAC
- Air and creepage distance	>5.5mm
- Test voltage	4'000V/50Hz/1min
Test voltage contact open	1'500V/50Hz/1min
Creepage resistance	CTI 175
Pollution degree	2
Overvoltage category	III
Insulation resistance at Up 500VDC	>100MΩ

Additional Data

Mechanical endurance	>10x10^6 operations
Switching frequency, mechanical	15Hz
Response time (all NO closed)	typically 12ms
Drop-out time** (all NC closed)	typically 5ms
Bounce time of NO contact	typically 1.5ms
Bounce time of NC contact	typically 15ms
Shock resistance 16ms	NO > 15g NC > 6g
Vibration resistance (10-200Hz)	NO > 10g NC > 2g
Resistance to short circuiting NO	1'000A SCPD 10A gG/gL (pre-fuse)
Resistance to short circuiting NC	1'000A SCPD 6A gG/gL (pre-fuse)
Ambient temperature	-40°C to +70°C
Thermal resistance	60K/W
Temperature limit for coil	120°C
Weight	ca. 20g
Mounting position	any
Type of protection	RT II
Solder bath temperature	270°C/5s

**without spark suppression

Tests, Regulations

Approvals

UL File E188953	Sec. 6
Insulation class IEC 60664-1	250VAC
Protection class II	VDE 0106
Fire protection requirements	UL 94 / V0

Options, Accessories

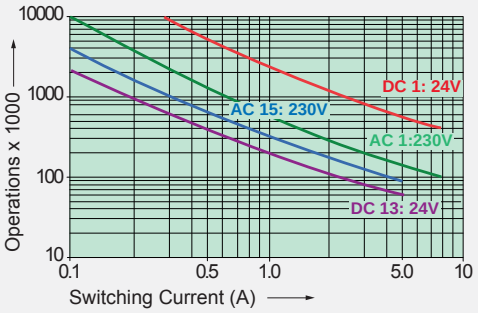
none available

Product Key

SIF 3 1 2 24VDC

- 24VDC: Coil voltage
- 2: Soldering tags
- 1: Number of NC contacts
- 3: Number of NO contacts
- SIF: Type designation

Contact Lifetime for NO Contacts

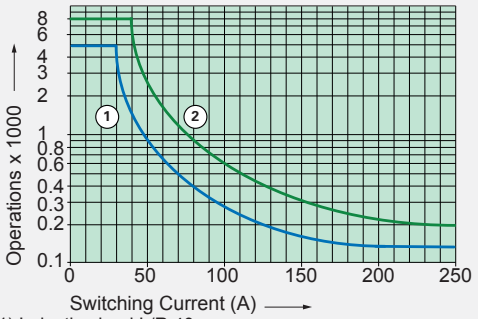


Maximal switching characteristics (DIN EN 60947-5-1)

AC 1:	250V / 8A
AC 15:	230V / 5A
DC 1:	24V / 8A
DC 13:	24V / 5A / 0.1Hz
UL 508:	B300 / R300

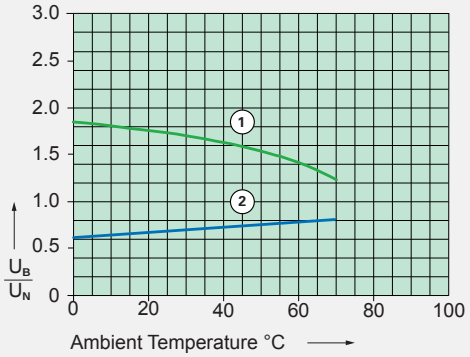
Maximal contact load at AC 1 with 230V:
2 contacts with 8A each
3 contacts with 6A each

Load Limit Curve with Direct Current



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

Excitation Voltage Range



1) Max. excitation voltage with contact load: ≤5A
2) Min. excitation voltage (guaranteed values) without previous operation

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

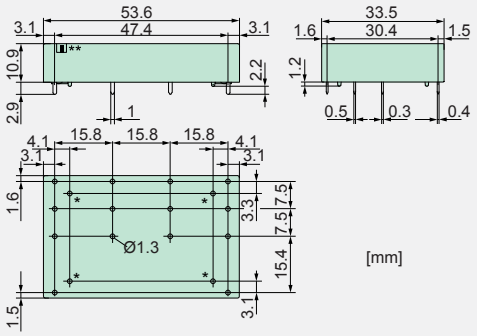
ELESTA relays GmbH, Heuteilstrasse 18, Fon: +41 (0)81 303 54 00
CH - 7310 Bad Ragaz, Switzerland Fax: +41 (0)81 303 54 01

SIF 6 Series

Relay Key Data

- PCB Relay with forcibly guided contacts
- Protective separation between coil and contacts (>5.5mm) and contacts side by side (>5.5mm)
- EN50205 type A
- Double and reinforced insulation
- SMD arrangement below relay possible
- Contact mounting: SIF422 4NO / 2NC
- Compact height: only 10.9mm
- Mean coil power 0.66 W
- Holding coil power 0.20 W
- For railway application (EN50155) on request

Dimensions



[mm]

* Do not drill when SMD arrangement

** Open breathing hole

Contact Data

Contact material	AgCuNi+0.2µm Au
Type of contact	Single contact with notched crown
Rated switching capacity	250VAC 8A AC1 2'000VA
Electr. life AC 1(360 cycles/h)	approx.100'000
Inrush current max.	30A for 20ms
Switching voltage range	5 to 250 VDC/VAC
Switching current range*	3mA to 8A
Switching capacity range*	40mW to 2'000W(VA)
Contact resistance (as delivered)	≤100mΩ/6V/100mA

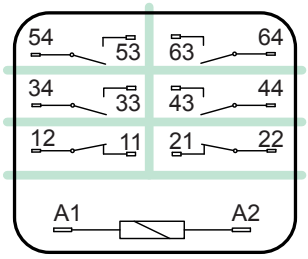
*Guided values

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
5	≤3.5	≥0.5	133.3	37.5 ± 10%
12	≤8.4	≥1.2	55.8	215 ± 10%
18	≤12.6	≥1.8	38.9	462 ± 10%
20	≤14.0	≥2.0	33.3	600 ± 10%
24	≤16.8	≥2.4	27.5	870 ± 10%
48	≤33.6	≥4.8	13.8	3'460 ± 10%
60	≤42.0	≥6.0	11.1	5'400 ± 13%
110	≤77.0	≥11.0	6.0	18'300 ± 15%

Circuit Diagram (view on relay upper side)



SIF422

Insulation Data

- Double or reinforced insulation	at 250VAC
- Air and creepage distance	>5.5mm
- Test voltage	4'000V/50Hz/1min
Test voltage contact oopen	1'500V/50Hz/1min
Creepage resistance	CTI 175
Pollution degree	2
Overvoltage category	III
Insulation resistance at Up 500VDC	>100MΩ

Additional Data

Mechanical endurance	>10x10⁶ operations
Switching frequency, mechanical	15Hz
Response time (all NO closed)	typically 20ms
Drop-out time** (all NC closed)	typically 8ms
Bounce time of NO contact	typically 1.5ms
Bounce time of NC contact	typically 15ms
Shock resistance 16ms	NO > 10g NC > 6g
Vibration resistance (10-200Hz)	NO > 10g NC > 2g
Resistance to short circuiting NO	1'000A SCPD 10A gG/gL (pre-fuse)
Resistance to short circuiting NC	1'000A SCPD 6A gG/gL (pre-fuse)
Ambient temperature	-40°C to +70°C
Thermal Resistance	47K/W
Temperature limit for coil	120°C
Weight	ca. 35g
Mounting position	any
Type of protection	RT II
Solder bath temperature	270°C/5s

**without spark suppression

Tests, Regulations

Approvals

UL File E188953	Sec. 6
Insulation class IEC 60664-1	250VAC
Protection class II	VDE 0106
Fire protection requirements	UL 94 / V0

Options, Accessories

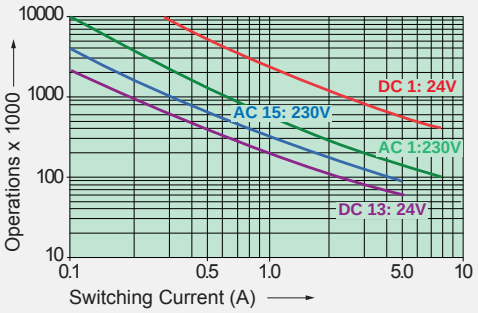
none available

Product Key

SIF 4 2 2 24VDC

- 24VDC — Coil voltage
- 2 — Soldering tags
- 2 — Number of NC contacts
- 4 — Number of NO contacts
- SIF — Type designation

Contact Lifetime for NO Contacts

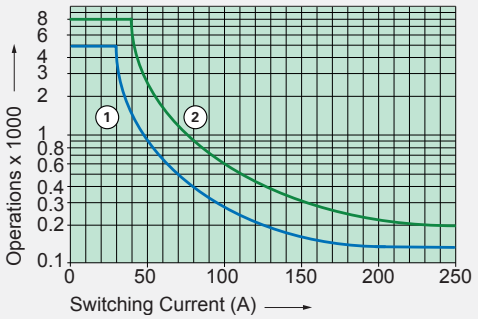


Maximal switching characteristics (DIN EN 60947-5-1)

AC 1:	250V / 8A
AC 15:	230V / 5A
DC 1:	24V / 8A
DC 13:	24V / 5A / 0.1Hz
UL 508:	B300 / R300

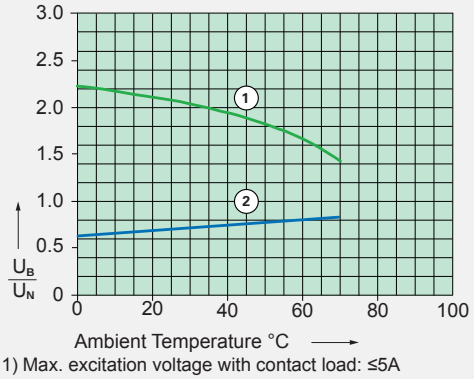
Maximal contact load at AC 1 with 230V:
2 contacts with 8A each
3 contacts with 6A each
4 contacts with 4.5A each

Load Limit Curve with Direct Current



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

Excitation Voltage Range



1) Max. excitation voltage with contact load: ≤5A
2) Min. excitation voltage (guaranteed values) without previous operation

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

ELESTA relays GmbH, Heuteilstrasse 18, CH - 7310 Bad Ragaz, Switzerland
Fon: +41 (0)81 303 54 00
Fax: +41 (0)81 303 54 01

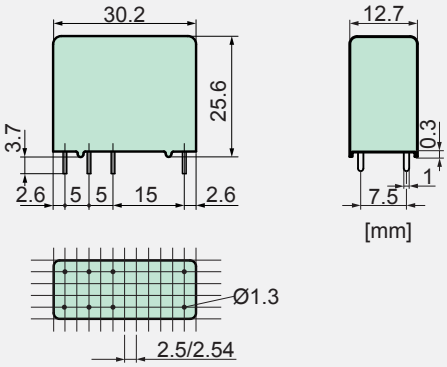
SIR 282 Series

will be replaced by SGR282ZK

Relay Key Data

- PCB Relay with forcibly guided contacts
- Protective separation between coil and contacts (leakage and creepage distances >14mm); protective separation diagonally between left and right contact side (leakage and creepage distances >5.5mm)
- EN50205 type B
- 2 CO contacts
- Mean coil power 1W
- Holding Power 0.31W

Dimensions



Contact Data

Contact material	$AgSnO_2$+0.2µm Au
Type of contact	Single contact
Rated switching capacity	250VAC 8A AC1 2'000VA
Electr. life AC 1(360 cycles/h)	approx.100'000
Inrush current max.	15A for 20ms
Switching voltage range	5 to 250 VDC/VAC
Switching current range*	10mA to 8A
Switching capacity range*	120mW to 2'000W(VA)
Contact resistance (as delivered)	≤100mΩ/28V/100mA

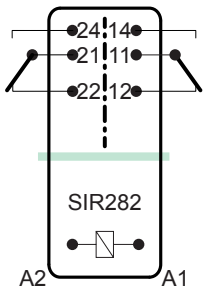
*Guided values

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
5	3.75	≥0.5	181.0	27.5 ± 10%
6	4.5	≥0.6	166.0	36 ± 10%
12	9.0	≥1.2	85.7	140 ± 10%
18	13.5	≥1.8	66.6	270 ± 10%
24	18.0	≥2.4	33.3	720 ± 10%
48	36.0	≥4.8	20.8	2'300 ± 10%
60	45	≥6.0	13.6	4'400 ± 13%
110	82.5	≥11.0	11.0	10'000 ± 15%

Circuit Diagram (view on relay upper side)



Insulation Data

- Double or reinforced insulation	at 250VAC
- Air and creepage distance	>5.5mm
- Test voltage	4'000V/50Hz/1min
- Double or reinforced insulation	at 250VAC
- Air and creepage distance	>14mm
- Test voltage	5'000V/50Hz/1min
Test voltage contact open	1'500V/50Hz/1min
Creepage resistance	CTI 550
Pollution degree	2
Overvoltage category	III
Insulation resistance at Up 500VDC	>100MΩ

Additional Data

Mechanical endurance	>$10x10^6$ operations
Switching frequency, mechanical	15Hz
Response time (all NO closed)	typically 12ms
Drop-out time** (all NC closed)	typically 5ms
Bounce time of NO contact	typically 4ms
Bounce time of NC contact	typically 8ms
Shock resistance 16ms	NO > 10g NC > 2.5g
Vibration resistance (10-55Hz)	NO > 10g NC > 1g
Resistance to short circuiting contacts	1'000A SCPD 10A gG/gL (pre-fuse)
Ambient temperature	-40°C to +70°C
Thermal resistance	50K/W
Temperature limit for coil	120°C
Weight	ca. 20g
Mounting position	any
Type of protection	RT II
Solder bath temperature	270°C/5s

**without spark suppression

Tests, Regulations

Approvals

UL File E188953	Sec. 1
Insulation class IEC 60664-1	250VAC
Protection class II	VDE 0106
Fire protection requirements	UL 94 / V1

Options, Accessories

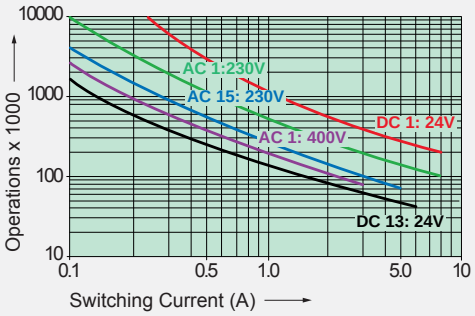
PCB socket, DIN rail socket	see page 28
Sealed RT III	on request
Dust resistant with O-Ring	

Product Key

SIR282 24VDC 08

- 08: O-ring dust-resistant
- 24VDC: Coil voltage
- SIR282: Type designation

Contact Lifetime for NO Contacts

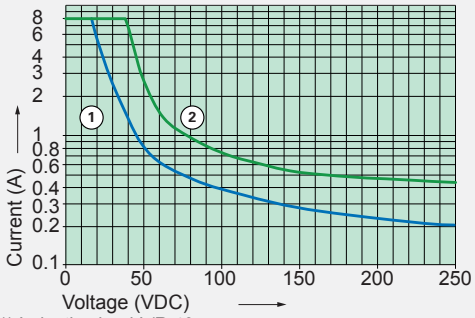


Maximal switching characteristics (DIN EN60947-5-1, Tab. C2)

AC 15:	230V / 5A
DC 13:	24V / 6A
UL 508:	C300

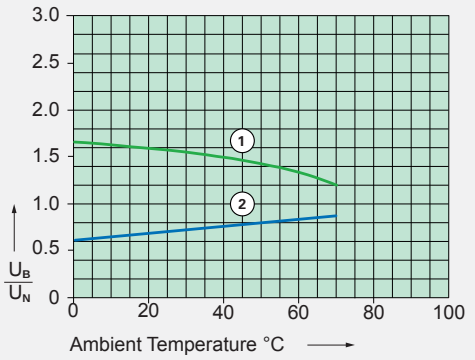
Maximal contact load at AC 1 with 230V:
2 contacts with 8A each

Load Limit Curve with Direct Current



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

Excitation Voltage Range



1) Max. excitation voltage with contact load: ≤5A
2) Min. excitation voltage (guaranteed values) without previous operation

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

ELESTA relays GmbH, Heuteilstrasse 18, Fon: +41 (0)81 303 54 00
CH - 7310 Bad Ragaz, Switzerland Fax: +41 (0)81 303 54 01

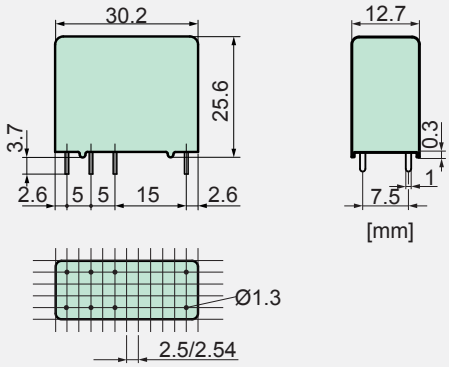
SIR 282 sensitive Series

will be replaced by SGR282ZK

Relay Key Data

- PCB Relay with forcibly guided contacts
- Protective separation between coil and contacts (leakage and creepage distances >14mm); protective separation diagonally between left and right contact side (leakage and creepage distances >5.5mm)
- EN50205 type B
- 2 CO contacts
- Mean coil power approx. 0.7W
- Holding coil power 0.21W
- For railway application (EN50155) on request

Dimensions



Contact Data

Contact material	$AgSnO_2$+0.2µm Au
Type of contact	Single contact
Rated switching capacity	250VAC 8A AC1 2'000VA
Electr. life AC 1(360 cycles/h)	approx.100'000
Inrush current max.	15A for 20ms
Switching voltage range	5 to 250 VDC/VAC
Switching current range*	10mA to 8A
Switching capacity range*	120mW to 2'000W(VA)
Contact resistance (as delivered)	≤100mΩ/28V/100mA

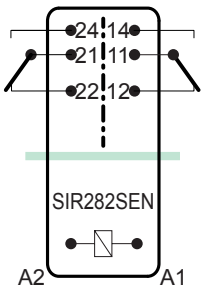
*Guided values

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
5	3.75	≥0.5	144.0	34.7 ± 10%
6	4.5	≥0.6	120.0	50 ± 10%
12	9.0	≥1.2	60.0	200 ± 10%
18	13.5	≥1.8	40.0	450 ± 10%
24	18.0	≥2.4	30.0	800 ± 10%
48	36.0	≥4.8	15.0	3'200 ± 10%
60	45	≥6.0	12.0	5'000 ± 13%
110	82.5	≥11.0	6.5	16'800 ± 15%

Circuit Diagram (view on relay upper side)



Insulation Data

- Double or reinforced insulation	at 250VAC
- Air and creepage distance	>5.5mm
- Test voltage	4'000V/50Hz/1min
- Double or reinforced insulation	at 250VAC
- Air and creepage distance	>14mm
- Test voltage	5'000V/50Hz/1min
Test voltage contact open	1'500V/50Hz/1min
Creepage resistance	CTI 250
Pollution degree	2
Overvoltage category	III
Insulation resistance at Up 500VDC	>100MΩ

Additional Data

Mechanical endurance	>10x10^6 operations
Switching frequency, mechanical	15Hz
Response time (all NO closed)	typically 12ms
Drop-out time** (all NC closed)	typically 5ms
Bounce time of NO contact	typically 4ms
Bounce time of NC contact	typically 8ms
Shock resistance 16ms	NO > 10g NC > 2.5g
Vibration resistance (10-55Hz)	NO > 10g NC > 1g
Resistance to short circuiting contacts	1'000A SCPD 10A gG/gL (pre-fuse)
Ambient temperature	-40°C to +70°C
Thermal Resistance	50K/W
Temperature limit for coil	120°C
Weight	ca. 20g
Mounting position	any
Type of protection	RT II
Solder bath temperature	270°C/5s

**without spark suppression

Tests, Regulations

Approvals

UL File E188953	Sec. 1
Insulation class IEC 60664-1	250VAC
Protection class II	VDE 0106
Fire protection requirements	UL 94 / V1

Options, Accessories

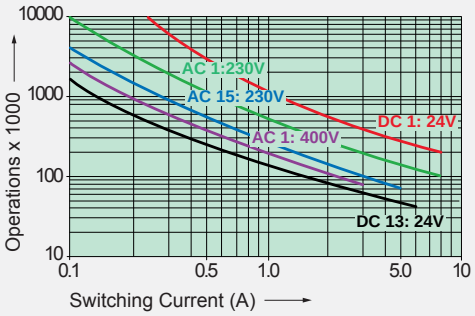
PCB socket, DIN rail socket	see page 28
Sealed RT III	on request
Dust resistant with O-Ring	

Product Key

SIR282 24VDC SEN 08

- SIR282: Type designation
- 24VDC: Coil voltage
- SEN: sensitive coil
- 08: O-ring dust-resistant

Contact Lifetime for NO Contacts

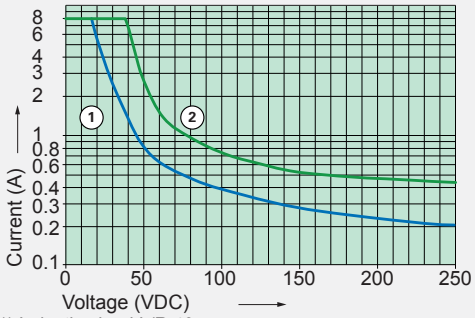


Maximal switching characteristics (DIN EN60947-5-1, Tab. C2)

AC 15:	230V / 5A
DC 13:	24V / 6A
UL 508:	C300

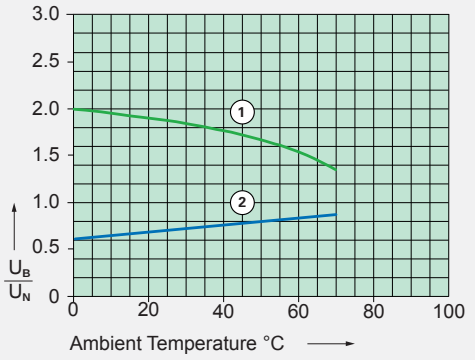
Maximal contact load at AC 1 with 230V:
2 contacts with 8A each

Load Limit Curve with Direct Current



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

Excitation Voltage Range



1) Max. excitation voltage with contact load: ≤5A
2) Min. excitation voltage (guaranteed values) without previous operation

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

ELESTA relays GmbH, Heuteilstrasse 18, CH - 7310 Bad Ragaz, Switzerland
Fon: +41 (0)81 303 54 00
Fax: +41 (0)81 303 54 01

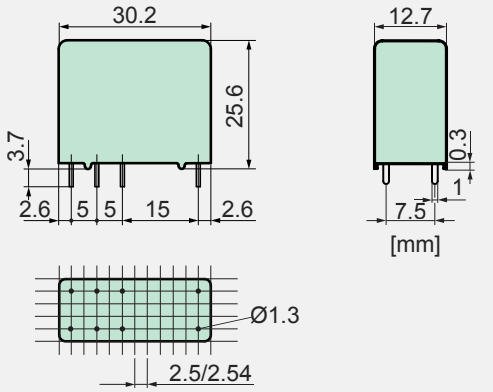
SGR 282 Z Series

will be replaced by SGR282ZK

Relay Key Data

- PCB Relay with forcibly guided contacts
- Protective separation between coil and contacts (leakage and creepage distances >14mm); protective separation diagonally between left and right contact side (leakage and creepage distances >5.5mm)
- EN50205 type B
- 2 CO contacts
- Mean coil power 1W
- Holding coil power 0.31W

Dimensions



Contact Data

Contact material	AgCuNi
Type of contact	Single contact
Rated switching capacity	250VAC 6A AC1 2'000VA
Electr. life AC 1(360 cycles/h)	approx.100'000
Inrush current max.	15A for 20ms
Switching voltage range	5 to 250 VDC/VAC
Switching current range*	20mA to 6A
Switching current range**	10mA to 6A
Switching capacity range*	120mW to 1'500W(VA)
Switching capacity range**	60mW to 1'500W(VA)
Contact resistance (as delivered)	≤100mΩ/28V/100mA

*Guided values

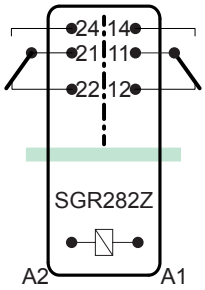
**Values for AgCuNi+4-6µm Au

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
5	3.75	≥0.5	181.8	27.5 ± 10%
6	4.5	≥0.6	166.6	36 ± 10%
12	9.0	≥1.2	85.7	140 ± 10%
18	13.5	≥1.8	66.6	270 ± 10%
24	18.0	≥2.4	33.3	720 ± 10%
48	36.0	≥4.8	20.8	2'300 ± 10%
60	45.0	≥6.0	13.6	4'400 ± 13%
110	82.5	≥11.0	11.0	10'000 ± 15%

Circuit Diagram (view on relay upper side)



Insulation Data

- Double or reinforced insulation	at 250VAC
- Air and creepage distance	>5.5mm
- Test voltage	4'000V/50Hz/1min
- Double or reinforced insulation	at 250VAC
- Air and creepage distance	>14mm
- Test voltage	5'000V/50Hz/1min
Test voltage contact open	1'500V/50Hz/1min
Creepage resistance	CTI 550
Pollution degree	2
Overvoltage category	III
Insulation resistance at Up 500VDC	>100MΩ

Additional Data

Mechanical endurance	>50x10⁶ operations
Switching frequency, mechanical	15Hz
Response time (all NO closed)	typically 12ms
Drop-out time** (all NC closed)	typically 5ms
Bounce time of NO contact	typically 4ms
Bounce time of NC contact	typically 8ms
Shock resistance 16ms	NO > 10g NC > 2.5g
Vibration resistance (10-55Hz)	NO > 10g NC > 1g
Resistance to short circuiting contacts	1'000A SCPD 6A gG/gL (pre-fuse)
Ambient temperature	-40°C to +70°C
Thermal resistance	50K/W
Temperature limit for coil	120°C
Weight	ca. 20g
Mounting position	any
Type of protection	RT II
Solder bath temperature	270°C/5s

**without spark suppression

Tests, Regulations

Approvals

UL File E188953	Sec. 1
Insulation class IEC 60664-1	250VAC
Protection class II	VDE 0106
Fire protection requirements	UL 94 / V1

Options, Accessories

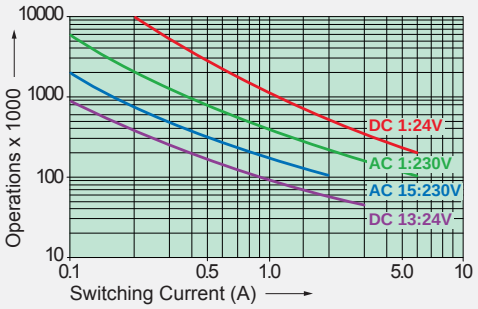
PCB socket, DIN rail socket	see page 28
Sealed RT III	on request
Dust resistant with O-Ring	
Contact material with 4-6µm Au	

Product Key

SGR282Z 24VDC AU6 08

- 08 – O-ring dust resistant
- AU6 – Gold plating 4-6µm
- 24VDC – Coil voltage
- SGR282Z – Type designation

Contact Lifetime for NO Contacts



Maximal switching characteristics (DIN EN60947-5-1, Tab. C2)

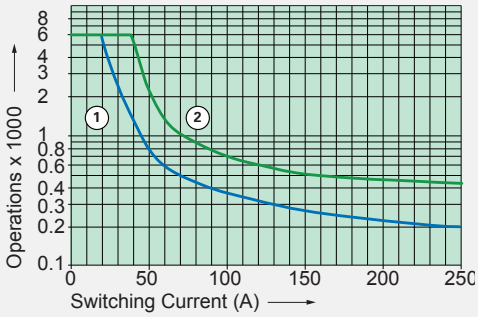
AC 15:	230V / 3A
DC 13:	24V / 4A
UL 508:	C300

Maximal contact load at AC 1 with 230V:
2 contacts with 6A each

Gold contacts with 4-6µm layer thickness

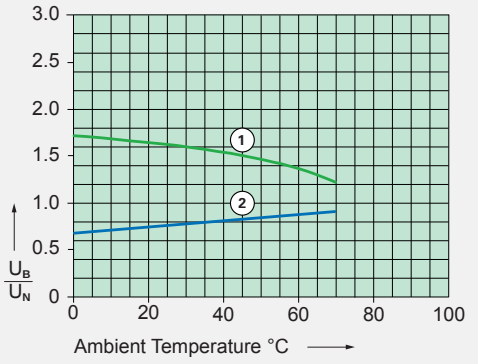
When switching high voltages and currents the layer of gold is already destroyed after a few switching operations. Once the gold layer is damaged due to the switching of high loads, this contact must not be used anymore for signal and control current circuits.
Then safe contact making is only possible at high loads with the formation of sparks.

Load Limit Curve with Direct Current



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

Excitation Voltage Range



1) Max. excitation voltage with contact load: ≤4A
2) Min. excitation voltage (guaranteed values) without previous operation

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

ELESTA relays GmbH, Heuteilstrasse 18, CH - 7310 Bad Ragaz, Switzerland
Fon: +41 (0)81 303 54 00
Fax: +41 (0)81 303 54 01

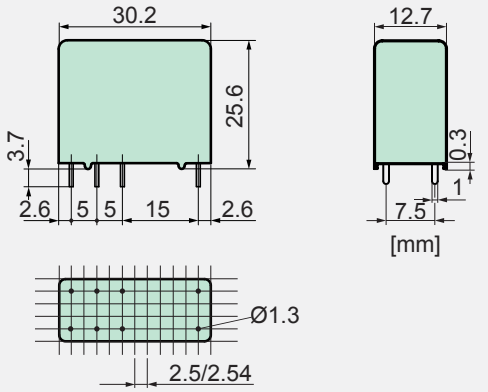
SGR 282 Z sensitive Series

will be replaced by SGR282ZK

Relay Key Data

- PCB Relay with forcibly guided contacts
- Protective separation between coil and contacts (leakage and creepage distances >14mm); protective separation diagonally between left and right contact side (leakage and creepage distances >5.5mm)
- EN50205 type B
- 2 CO contacts
- Mean coil power 0.7W
- Holding coil power 0.21W

Dimensions



Contact Data

Contact material	AgCuNi
Type of contact	Single contact
Rated switching capacity	250VAC 6A AC1 1'500VA
Electr. life AC 1(360 cycles/h)	approx.100'000
Inrush current max.	15A for 20ms
Switching voltage range	5 to 250 VDC/VAC
Switching current range*	20mA to 6A
Switching current range**	10mA to 6A
Switching capacity range*	120mW to 1'500W(VA)
Switching capacity range**	60mW to 1'500W(VA)
Contact resistance (as delivered)	≤100mΩ/28V/100mA

*Guided values

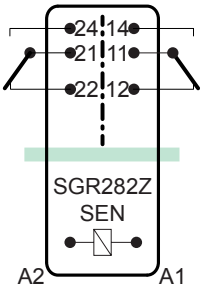
**Values for AgCuNi+4-6µm Au

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
5	3.75	≥0.5	144.0	34.7 ± 10%
6	4.5	≥0.6	120.0	50 ± 10%
12	9.0	≥1.2	60.0	200 ± 10%
18	13.5	≥1.8	40.0	450 ± 10%
24	18.0	≥2.4	30.0	800 ± 10%
48	36.0	≥4.8	15.0	3'200 ± 10%
60	45.0	≥6.0	12.0	5'000 ± 13%
110	82.5	≥11.0	6.5	16'800 ± 15%

Circuit Diagram (view on relay upper side)



Insulation Data

- Double or reinforced insulation	at 250VAC
- Air and creepage distance	>5.5mm
- Test voltage	4'000V/50Hz/1min
- Double or reinforced insulation	at 250VAC
- Air and creepage distance	>14mm
- Test voltage	5'000V/50Hz/1min
Test voltage contact open	1'500V/50Hz/1min
Creepage resistance	CTI 550
Pollution degree	2
Overvoltage category	III
Insulation resistance at Up 500VDC	>100MΩ

Additional Data

Mechanical endurance	>10x10⁶ operations
Switching frequency, mechanical	15Hz
Response time (all NO closed)	typically 12ms
Drop-out time** (all NC closed)	typically 5ms
Bounce time of NO contact	typically 4ms
Bounce time of NC contact	typically 8ms
Shock resistance 16ms	NO > 10g NC > 2.5g
Vibration resistance (10-55Hz)	NO > 10g NC > 1g
Resistance to short circuiting contacts	1'000A SCPD 6A gG/gL (pre-fuse)
Ambient temperature	-40°C to +70°C
Thermal resistance	50K/W
Temperature limit for coil	120°C
Weight	ca. 20g
Mounting position	any
Type of protection	RT II
Solder bath temperature	270°C/5s

**without spark suppression

Tests, Regulations

Approvals

UL File E188953	Sec. 1
Insulation class IEC 60664-1	250VAC
Protection class II	VDE 0106
Fire protection requirements	UL 94 / V1

Options, Accessories

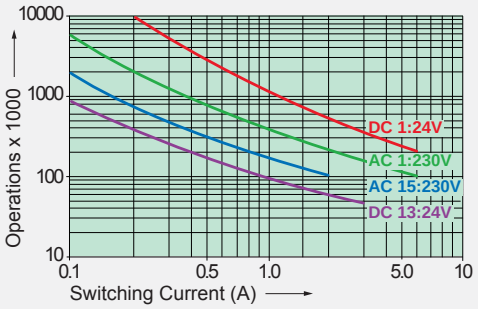
PCB socket, DIN rail socket	see page 28
Sealed RT III	on request
Dust resistant with O-Ring	
Contact material with 4-6µm Au	

Product Key

SGR282Z 24VDC SEN AU6 08

- 08 – O-ring dust resistant
- AU6 – Gold plating 4-6µm
- SEN – sensitive Spule
- 24VDC – Coil voltage
- SGR282Z – Type designation

Contact Lifetime



Maximal switching characteristics (DIN EN60947-5-1, Tab. C2)

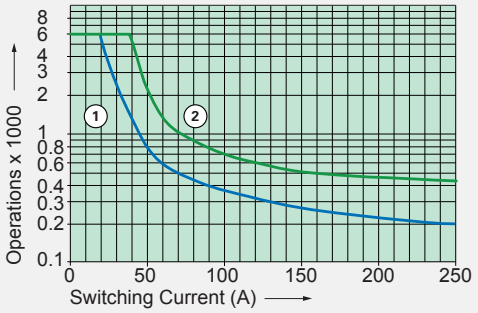
AC 15:	230V / 3A
DC 13:	24V / 4A
UL 508:	C300

Maximal contact load at AC 1 with 230V:
2 contacts with 6A each

Gold contacts with 4-6µm layer thickness

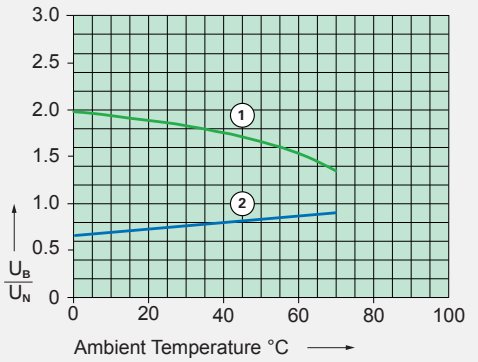
When switching high voltages and currents the layer of gold is already destroyed after a few switching operations. Once the gold layer is damaged due to the switching of high loads, this contact must not be used anymore for signal and control current circuits.
Then safe contact making is only possible at high loads with the formation of sparks.

Load Limit Curve with Direct Current



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

Excitation Voltage Range



1) Max. excitation voltage with contact load: ≤4A
2) Min. excitation voltage (guaranteed values) without previous operation

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

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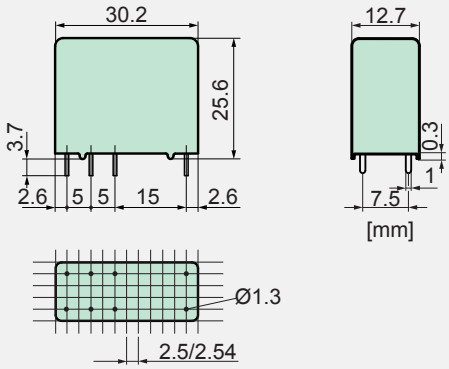
SGR 282 ZK Series

Relay Key Data

- PCB Relay with forcibly guided contacts
- Protective separation between coil and contacts (leakage and creepage distances >14mm); protective separation diagonally between left and right contact side (leakage and creepage distances >5.5mm)
- EN50205 type B
- 2 CO contacts with notched crown
- Mean coil power 0.7W
- Holding Power 0.21W

Dimensions



Contact Data

Contact material	AgCuNi+0.2µm AU
Type of contact	notched crown
Rated switching capacity	250VAC 8A AC1 2'000VA
Electr. life AC 1(360 cycles/h)	approx.100'000
Inrush current max.	15A for 20ms
Switching voltage range	5 to 250 VDC/VAC
Switching current range*	4mA to 8A
Switching capacity range*	50mW to 2'000W(VA)
Contact resistance (as delivered)	≤100mΩ/28V/100mA

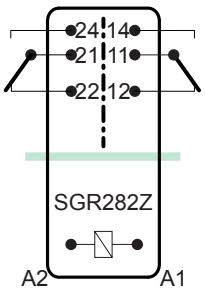
*Guided values

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
5	3.75	≥0.5	140.0	35.7 ± 10%
6	4.5	≥0.6	116.0	51.4 ± 10%
12	9.0	≥1.2	58.5	205 ± 10%
18	13.5	≥1.8	38.9	462 ± 10%
24	18.0	≥2.4	29.1	822 ± 10%
48	36.0	≥4.8	14.5	3'290 ± 10%
60	45.0	≥6.0	11.6	5'140 ± 13%
110	82.5	≥11.0	6.3	17'280 ± 15%

Circuit Diagram (view on relay upper side)



Insulation Data

- Double or reinforced insulation	at 250VAC
- Air and creepage distance	>5.5mm
- Test voltage	4'000V/50Hz/1min
- Double or reinforced insulation	at 250VAC
- Air and creepage distance	>14mm
- Test voltage	5'000V/50Hz/1min
Test voltage contact open	1'500V/50Hz/1min
Creepage resistance	CTI 550
Pollution degree	2
Overvoltage category	III
Insulation resistance at Up 500VDC	>100MΩ

Additional Data

Mechanical endurance	>10x10⁶ operations
Switching frequency, mechanical	15Hz
Response time (all NO closed)	typically 12ms
Drop-out time** (all NC closed)	typically 5ms
Bounce time of NO contact	typically 4ms
Bounce time of NC contact	typically 8ms
Shock resistance 16ms	NO > 10g NC > 2.5g
Vibration resistance (10-55Hz)	NO > 10g NC > 1.5g
Resistance to short circuiting	
NO	1'000A SCPD 10A gG/gL (pre-fuse)
NC	1'000A SCPD 6A gG/gL (pre-fuse)
Ambient temperature	-40°C to +70°C
Thermal resistance	50K/W
Temperature limit for coil	120°C
Weight	ca. 20g
Mounting position	any
Type of protection	RT II
Solder bath temperature	270°C/5s

**without spark suppression

Tests, Regulations

Approvals

UL File E188953	Sec. 1
Insulation class IEC 60664-1	250VAC
Protection class II	VDE 0106
Fire protection requirements	UL 94 / V1

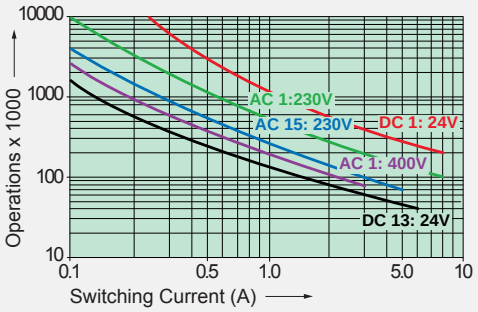
Options, Accessories

PCB socket, DIN rail socket	see page 28
Various modules	on request

Product Key

SGR282ZK 24VDC
- 24VDC: Coil voltage
- SGR282ZK: Type designation

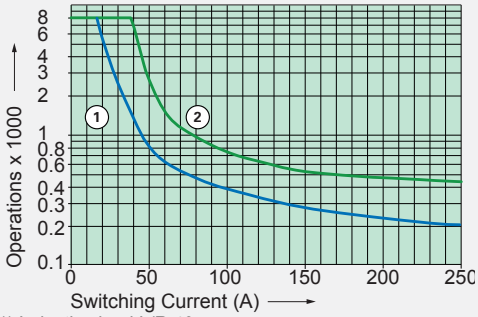
Contact Lifetime for NO Contacts



Maximal switching characteristics (DIN EN60947-5-1, Tab. C2)
AC 15: 230V / 3A
DC 13: 24V / 4A
UL 508: C300

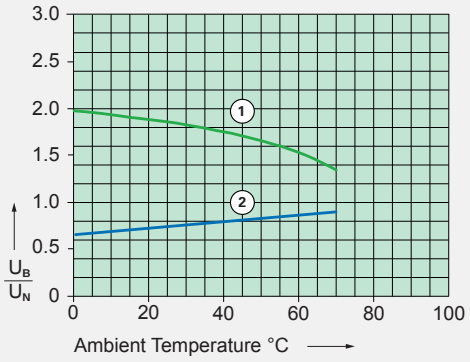
Maximal contact load at AC 1 with 230V:
2 contacts with 8A each

Load Limit Curve with Direct Current



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

Excitation Voltage Range



1) Max. excitation voltage with contact load: <4A
2) Min. excitation voltage (guaranteed values) without previous operation

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

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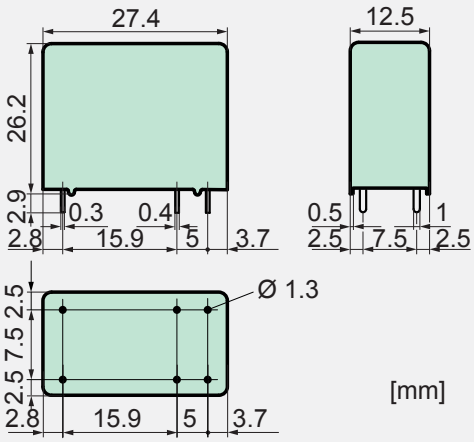
SIM 2 Series

Relay Key Data

- PCB Relay with forcibly guided Contacts
- Protective separation between coil and contacts (leakage and creepage distances >14mm); protective separation diagonally between left and right contact side (leakage and creepage distances >5.5mm)
- EN50205 type A
- Contact mounting: SIM112 1NO / 1NC
- Small external dimensions
- Mean coil power 0.5W
- Holding coil power 0.15W

Dimensions



Contact Data

Contact material	$AgSnO_2$+0.2µm
Type of contact	Crest contact
Rated switching capacity	250VAC 8A AC1 2'000VA
Electr. life AC 1(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*	60mW to 2'000W(VA)
Contact resistance (as delivered)	≤100mΩ/28V/100mA

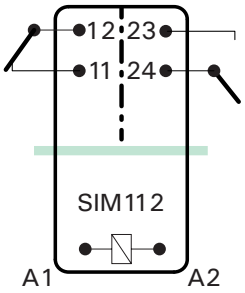
*Guided values

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
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%

Circuit Diagram (view on relay upper side)



Insulation Data

- Double or reinforced insulation	at 250VAC
- Air and creepage distance	>5.5mm
- Test voltage	4'000V/50Hz/1min
- Double or reinforced insulation	at 250VAC
- Air and creepage distance	>14mm
- Test voltage	5'000V/50Hz/1min
Test voltage contact open	1'500V/50Hz/1min
Creepage resistance	CTI 250
Pollution degree	2
Overvoltage category	III
Insulation resistance at Up 500VDC	>100MΩ

Additional Data

Mechanical endurance	>10x10⁶ operations
Switching frequency, mechanical	15Hz
Response time (all NO closed)	typically 10ms
Drop-out time** (all NC closed)	typically 3ms
Bounce time of NO contact	typically 6ms
Bounce time of NC contact	typically 12ms
Shock resistance 16ms	NO > 10g NC > 2.5g
Vibration resistance (10-200Hz)	NO > 10g NC > 1g
Resistance to short circuiting contacts	1'000A SCPD 10A gG/gL (pre-fuse)
Ambient temperature	-40°C to +70°C
Thermal resistance	55K/W
Temperature limit for coil	120°C
Weight	ca. 20g
Mounting position	any
Type of protection	RT II
Solder bath temperature	270°C/5s

**without spark suppression

Tests, Regulations

Approvals

UL File E188953	Sec. 3
Insulation class IEC 60664-1	250VAC
Protection class II	VDE 0106
Fire protection requirements	UL 94 / V1

Options, Accessories

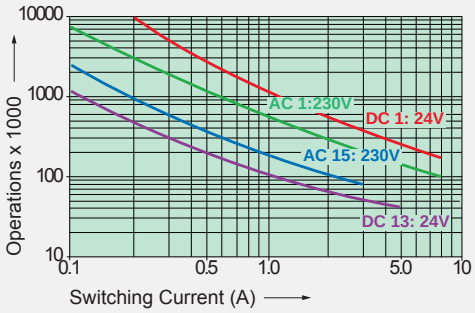
none available

Product Key

SIM 1 1 2 24VDC

- 24VDC: Coil voltage
- 2: Soldering tags
- 1: Number of NC contacts
- 1: Number of NO contacts
- SIM: Type designation

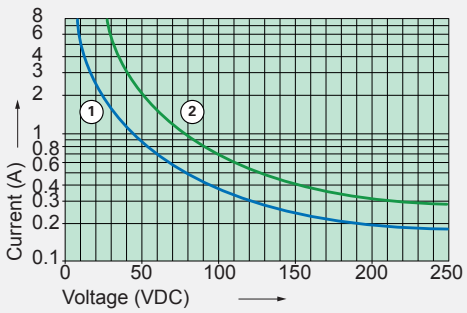
Contact Lifetime



Maximal switching characteristics (DIN EN60947-5-1, Tab. C2)

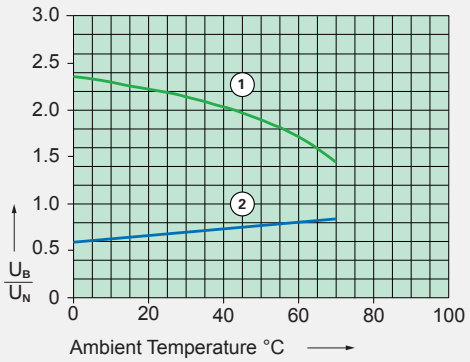
AC 1:	250V / 8A
AC 15:	230V / 3A
DC 1:	24 / 8A
DC 13:	24V / 6A / 0.1Hz
UL 508:	C150 / R300

Load Limit Curve with Direct Current



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

Excitation Voltage Range



1) Max. excitation voltage with contact load: ≤6A
2) Min. excitation voltage (guaranteed values) without previous operation

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

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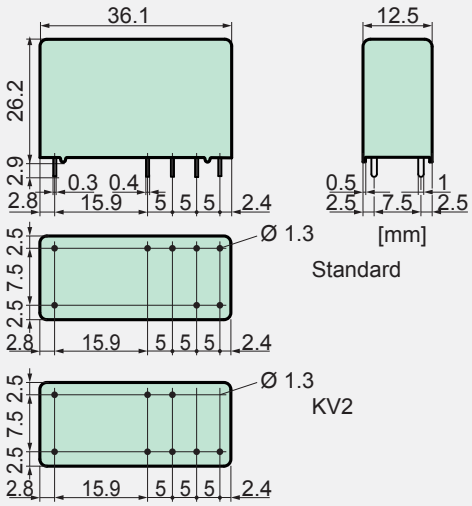
SIM 3 Series

Relay Key Data

- PCB Relay with forcibly guided contacts
- Protective separation between coil and contacts (leakage and creepage distances >14mm); protective separation diagonally between left and right contact side (leakage and creepage distances >5.5mm)
- EN50205 type A
- Contact mounting: SIM212 2NO / 1NC
- Small external dimensions
- Mean coil power 0.75W
- Holding coil power 0.21W
- For railway application (EN 50155) on request

Dimensions



Contact Data

Contact material	$AgSnO_2$+0.2µm Au
Type of contact	Crest contact
Rated switching capacity	250VAC 8A AC1 2'000VA
Electr. life AC 1(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*	60mW to 2'000W(VA)
Contact resistance (as delivered)	≤100mΩ/6V/100mA

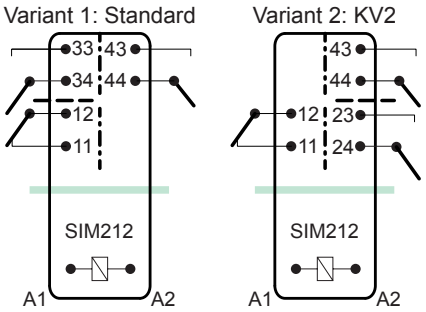
*Guided values

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
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%

Circuit Diagram (view on relay upper side)



Insulation Data

- Basic insulation	at 250VAC
- Air and creepage distance	>4mm
- Test voltage	2'500V/50Hz/1min
- Double or reinforced insulation	at 250VAC
- Air and creepage distance	>5.5mm
- Test voltage	4'000V/50Hz/1min
- Double or reinforced insulation	at 250VAC
- Air and creepage distance	>14mm
- Test voltage	5'000V/50Hz/1min
Test voltage contact oopen	1'500V/50Hz/1min
Creepage resistance	CTI 250
Pollution degree	2
Overvoltage category	III
Insulation resistance at Up 500VDC	>100MΩ

Additional Data

Mechanical endurance	>10x10^6 operations
Switching frequency, mechanical	15Hz
Response time (all NO closed)	typically 10ms
Drop-out time** (all NC closed)	typically 4ms
Bounce time of NO contact	typically 6ms
Bounce time of NC contact	typically 12ms
Shock resistance 16ms	NO > 10g NC > 2.5g
Vibration resistance (10-200Hz)	NO > 10g NC > 1g
Resistance to short circuiting contacts	1'000A SCPD 10A gG/gL (pre-fuse)
Ambient temperature	-40°C to +70°C
Thermal Resistance	50K/W
Temperature limit for coil	120°C
Weight	ca. 25g
Mounting position	any
Type of protection	RT II
Solder bath temperature	270°C/5s

**without spark suppression

Tests, Regulations

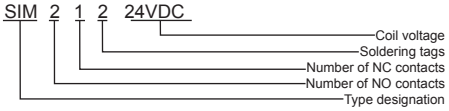
Approvals

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

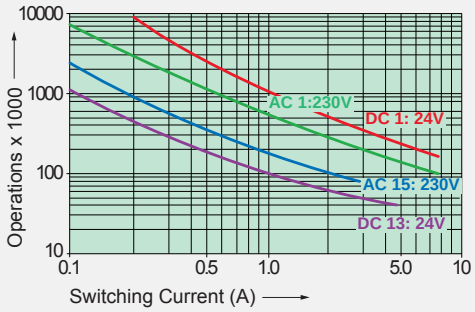
Options, Accessories

PCB socket, DIN rail socket	see page 29

Product Key



Contact Lifetime

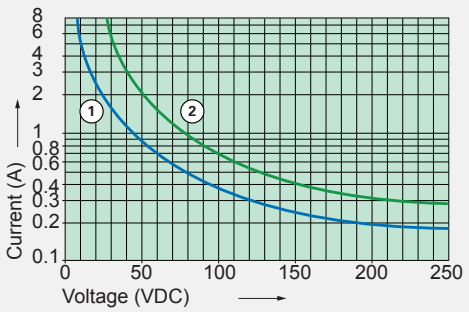


Maximal switching characteristics (DIN EN60947-5-1, Tab. C2)

AC 1:	250V / 8A
AC 15:	230V / 3A
DC 1:	24V / 8A
DC 13:	24V / 6A / 0.1Hz
UL 508:	C150 / R300

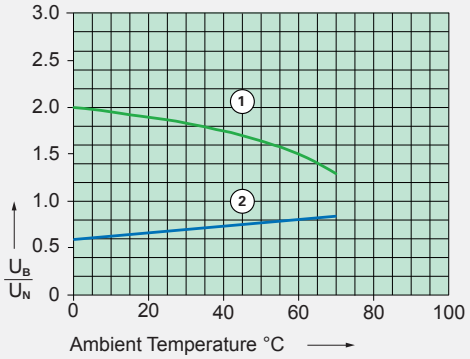
Maximal contact load at AC 1 with 230V:
2 contacts with 8A each

Load Limit Curve with Direct Current



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

Excitation Voltage Range



1) Max. excitation voltage with contact load: ≤6A
2) Min. excitation voltage (guaranteed values) without previous operation

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

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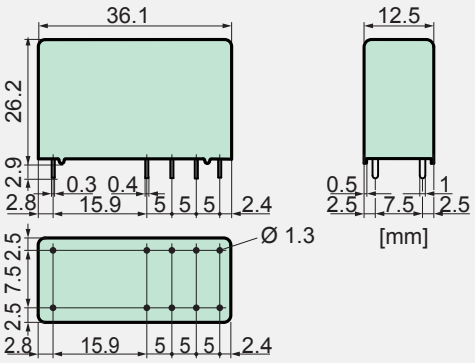
SIM 4 Series

Relay Key Data

- PCB Relay with forcibly guided contacts
- Protective separation between coil and contacts (leakage and creepage distances >14mm); protective separation diagonally between left and right contact side (leakage and creepage distances >5.5mm)
- EN50205 type A
- Contact mounting: SIM312 3NO / 1NC
  SIM222 2NO / 2NC
- Small external dimensions
- Mean coil power 1W
- Holding coil power 0.29W

Dimensions



Contact Data

Contact material	$AgSnO_2$+0.2µm Au
Type of contact	Crest contact
Rated switching capacity	250VAC 8A AC1 2'000VA
Electr. life AC 1(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*	60mW to 2'000W(VA)
Contact resistance (as delivered)	≤100mΩ/6V/100mA

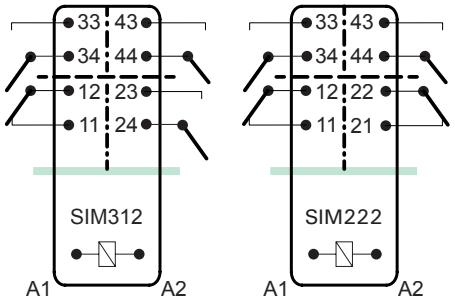
*Guided values

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
5	3.75	≥0.5	181.8	27.5 ± 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%

Circuit Diagram (view on relay upper side)



Insulation Data

- Basic insulation	at 250VAC
- Air and creepage distance	>4mm
- Test voltage	2'500V/50Hz/1min
- Double or reinforced insulation	at 250VAC
- Air and creepage distance	>5.5mm
- Test voltage	4'000V/50Hz/1min
- Double or reinforced insulation	at 250VAC
- Air and creepage distance	>14mm
- Test voltage	5'000V/50Hz/1min
Test voltage contact oopen	1'500V/50Hz/1min
Creepage resitance	CTI 250
Pollution degree	2
Overvoltage category	III
Insulation resistance at Up 500VDC	>100MΩ

Additional Data

Mechanical endurance	>10x10^6 operations
Switching frequency, mechanical	15Hz
Response time (all NO closed)	typically 8ms
Drop-out time** (all NC closed)	typically 4ms
Bounce time of NO contact	typically 6ms
Bounce time of NC contact	typically 12ms
Shock resistance 16ms	NO > 10g NC > 2.5g
Vibration resistance (10-200Hz)	NO > 10g NC > 1g
Resistance to short circuiting contacts	1'000A SCPD 10A gG/gL (pre-fuse)
Ambient temperature	-40°C to +70°C
Thermal Resistance	50K/W
Temperature limit for coil	120°C
Weight	ca. 25g
Mounting position	any
Type of protection	RT II
Solder bath temperature	270°C/5s

**without spark suppression

Tests, Regulations

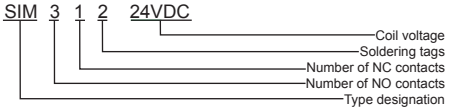
Approvals

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

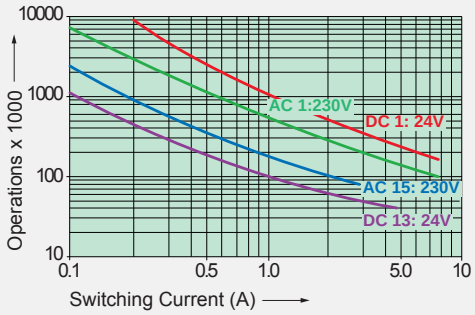
Options, Accessories

PCB socket, DIN rail socket	see page 29

Product Key



Contact Lifetime

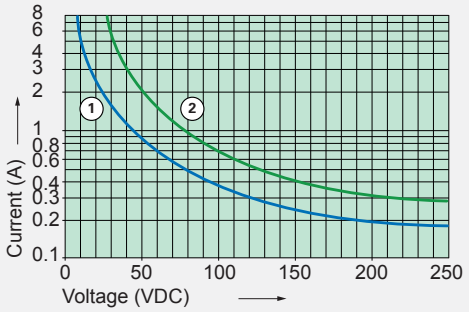


Maximal switching characteristics (DIN EN60947-5-1, Tab. C2)

AC 1:	250V / 8A
AC 15:	230V / 3A
DC 1:	24V / 8A
DC 13:	24V / 6A / 0.1Hz
UL 508:	C150 / R300

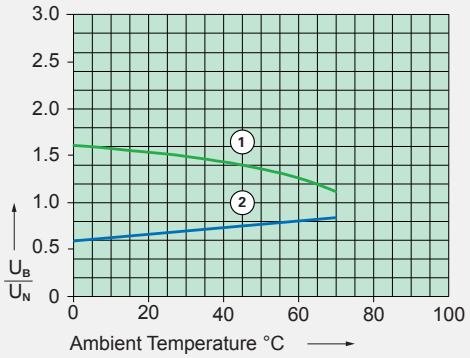
Maximal contact load at AC 1 with 230V:
2 contacts with 8A each
3 contacts with 6A each

Load Limit Curve with Direct Current



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

Excitation Voltage Range



1) Max. excitation voltage with contact load: ≤6A
2) Min. excitation voltage (guaranteed values) without previous operation

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

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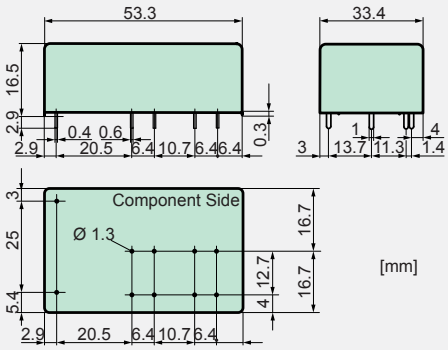
SLR 4 Series

Relay Key Data

- PCB Relay with forcibly guided contacts
- Protective separation between coil/control contacts (>8mm) as well as protective separation between the output contacts themselves (>10mm)
- EN50205 type A
- Contact mounting: SLR312 3NO / 1NC
  SLR222 2NO / 2NC
- Small external dimensions
- Mean coil power 0.6W
- Holding coil power 0.18W
- Coils for railway applications (EN 50155) on request

Dimensions



Contact Data

Contact material	$AgSnO_2$+0.2µm Au
Type of contact	Crest contact
Rated switching capacity	250VAC 10A AC1 2'500VA
Electr. life AC 1(360 cycles/h)	approx.100'000
Inrush current max.	25A for 20ms
Switching voltage range	5 to 250 VDC/VAC
Switching current range*	10mA to 10A
Switching capacity range*	60mW to 2'500W(VA)
Contact resistance (as delivered)	≤100mΩ/6V/100mA

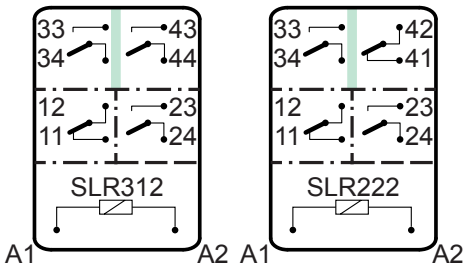
*Guided values

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
5	3.5	≥0.5	121.0	41 ± 10%
6	4.2	≥0.6	100.0	60 ± 10%
12	8.4	≥1.2	50.0	240 ± 10%
18	12.6	≥1.8	33.3	540 ± 10%
24	16.8	≥2.4	25.2	950 ± 10%
48	33.6	≥4.8	12.6	3'800 ± 10%
60	42.0	≥6.0	10.0	6'000 ± 13%
110	77.0	≥11.0	5.5	20'000 ± 15%

Circuit Diagram (view on relay upper side)



Insulation Data

- Basic insulation	at 250VAC
- Air and creepage distance	>4mm
- Test voltage	2'500V/50Hz/1min
- Double or reinforced insulation	at 250VAC
- Air and creepage distance	>8mm
- Test voltage	4'000V/50Hz/1min
- Double or reinforced insulation	at 250VAC
- Air and creepage distance	>10mm
- Test voltage	5'000V/50Hz/1min
Test voltage contact open	1'500V/50Hz/1min
Creepage resistance	CTI 250
Pollution degree	2
Overvoltage category	III
Insulation resistance at Up 500VDC	>100MΩ

Additional Data

Mechanical endurance	>10x10⁶ operations
Switching frequency, mechanical	15Hz
Response time (all NO closed)	typically 15ms
Drop-out time** (all NC closed)	typically 4ms
Bounce time of NO contact	typically 6ms
Bounce time of NC contact	typically 12ms
Shock resistance 16ms	NO > 10g NC > 6g
Vibration resistance (10-200Hz)	NO > 5g NC > 1.5g
Resistance to short circuiting contacts	1'000A SCPD 10A gG/gL (pre-fuse)
Ambient temperature	-40°C to +70°C
Thermal Resistance	55K/W
Temperature limit for coil	120°C
Weight	ca. 30g
Mounting position	any
Type of protection	RT II
Solder bath temperature	270°C/5s

**without spark suppression

Tests, Regulations

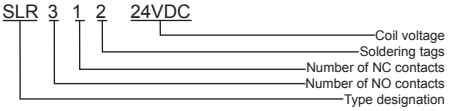
Approvals

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

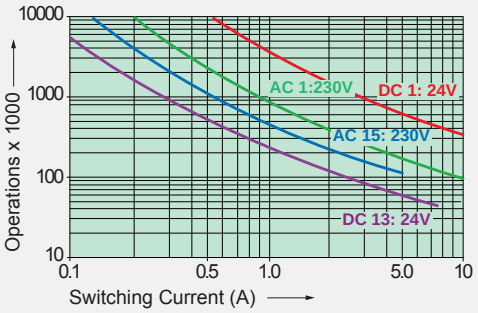
Options, Accessories

none available

Product Key



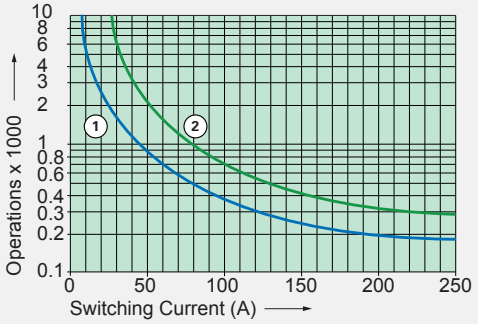
Contact Lifetime



Maximal switching characteristics (DIN EN60947-5-1, Tab. C2)
AC 15: 230V / 5A
DC 13: 24V / 7.5A / 0.1Hz
UL 508: C600 / R300

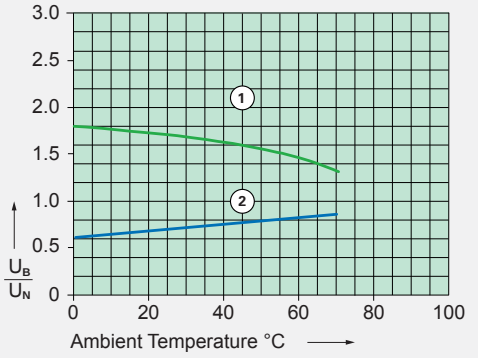
Maximal contact load at AC 1 with 230V:
2 contacts with 10A each
3 contacts with 8.4A each

Load Limit Curve with Direct Current



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

Excitation Voltage Range



1) Max. excitation voltage with contact load: ≤6A
2) Min. excitation voltage (guaranteed values) without previous operation

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

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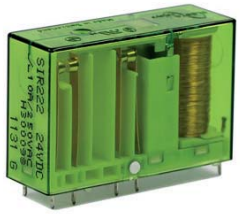
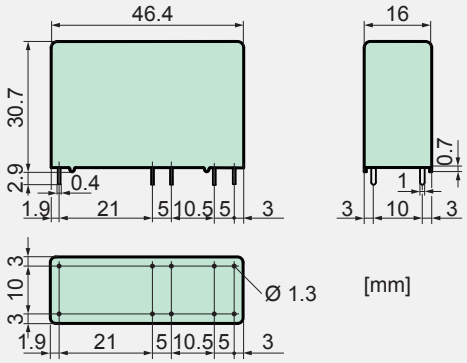
SIR 4 Series



Relay Key Data

- PCB Relay with forcibly guided contacts
- Protective separation between coil/control contacts (>10mm) as well as protective separation between the output contacts themselves (>8mm)
- EN50205 type A
- Contact mounting: SIR312 3NO / 1NC
  SIR222 2NO / 2NC
- Small external dimensions
- Mean coil power 0.6W
- Holding coil power 0.18W
- Coils for railway applications (EN 50155) on request

Dimensions



Contact Data

Contact material	$AgSnO_2$+0.2µm Au
Type of contact	Crest contact
Rated switching capacity	250VAC 10A AC1 2'500VA
Electr. life AC 1(360 cycles/h)	approx.100'000
Inrush current max.	25A for 20ms
Switching voltage range	5 to 250 VDC/VAC
Switching current range*	10mA to 10A
Switching capacity range*	60mW to 2'500W(VA)
Contact resistance (as delivered)	≤100mΩ/6V/100mA

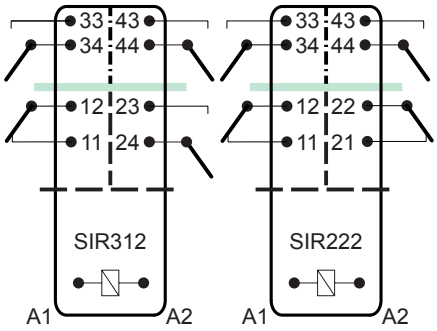
*Guided values

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
5	3.5	≥0.5	121.0	41 ± 10%
6	4.2	≥0.6	100.0	60 ± 10%
12	8.4	≥1.2	50.0	240 ± 10%
18	12.6	≥1.8	33.3	540 ± 10%
24	16.8	≥2.4	25.2	950 ± 10%
48	33.6	≥4.8	12.6	3'800 ± 10%
60	42.0	≥6.0	10.0	6'000 ± 13%
110	77.0	≥11.0	5.5	20'000 ± 15%

Circuit Diagram (view on relay upper side)



Insulation Data

- Basic insulation	at 250VAC
- Air and creepage distance	>4mm
- Test voltage	2'500V/50Hz/1min
- Double or reinforced insulation	at 250VAC
- Air and creepage distance	>8mm
- Test voltage	4'000V/50Hz/1min
- Double or reinforced insulation	at 250VAC
- Air and creepage distance	>10mm
- Test voltage	5'000V/50Hz/1min
Test voltage contact oopen	1'500V/50Hz/1min
Creepage resistance	CTI 250
Pollution degree	2
Overvoltage category	III
Insulation resistance at Up 500VDC	>100MΩ

Additional Data

Mechanical endurance	>10x10⁶ operations
Switching frequency, mechanical	15Hz
Response time (all NO closed)	typically 15ms
Drop-out time** (all NC closed)	typically 4ms
Bounce time of NO contact	typically 6ms
Bounce time of NC contact	typically 12ms
Shock resistance 16ms	NO > 10g
	NC > 6g
Vibration resistance	NO > 5g
(10-200Hz)	NC > 1.5g
Resistance to short circuiting contacts	1'000A SCPD 10A gG/gL (pre-fuse)
Ambient temperature	-40°C to +70°C
Thermal resistance	55K/W
Temperature limit for coil	120°C
Weight	ca. 30g
Mounting position	any
Type of protection	RT II
Solder bath temperature	270°C/5s

**without spark suppression

Tests, Regulations

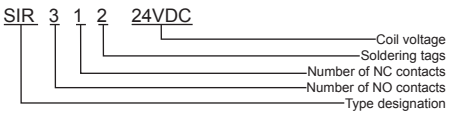
Approvals

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

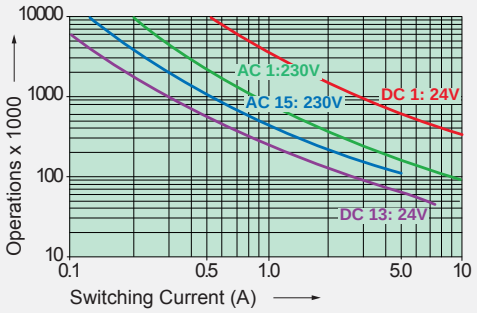
Options, Accessories

PCB socket	see page 30

Product Key



Contact Lifetime

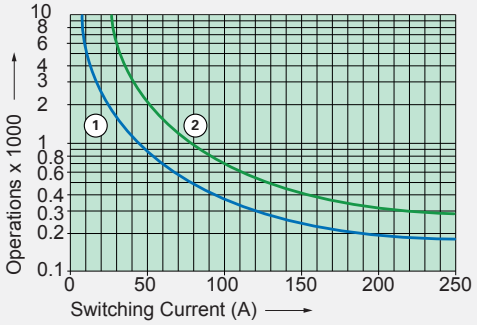


Maximal switching characteristics (DIN EN60947-5-1, Tab. C2)

AC 15:	230V / 5A
DC 13:	24V / 7.5A / 0.1Hz
UL 508:	C600 / R300

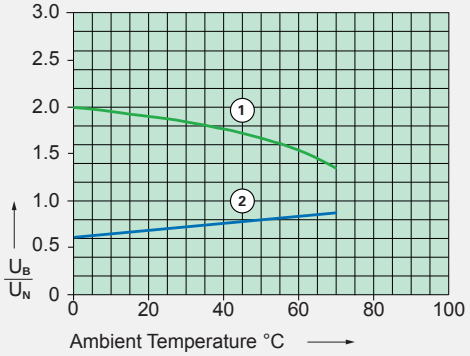
Maximal contact load at AC 1 with 230V:
2 contacts with 10A each
3 contacts with 8.4A each

Load Limit Curve with Direct Current



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

Excitation Voltage Range



1) Max. excitation voltage with contact load: ≤6A
2) Min. excitation voltage (guaranteed values) without previous operation

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

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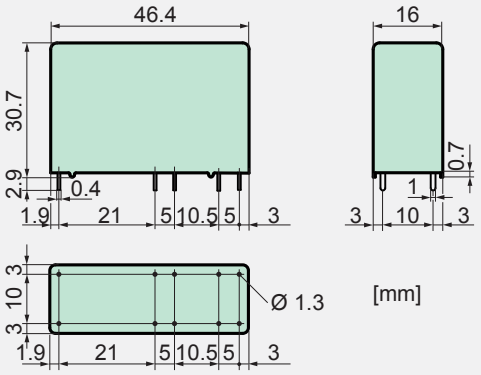
SIR 4 sensitive Series

Relay Key Data

- PCB Relay with forcibly guided contacts
- Protective separation between coil/control contacts (>10mm) as well as protective seperation between the output contacts themselves (>8mm)
- EN50205 type A
- Contact mounting: SIR312 3NO / 1NC
  SIR222 2NO / 2NC
- Small external dimensions
- Mean coil power 0.36 W
- Holding coil power 0.12 W
- For railway application (EN50155) on request

Dimensions



Contact Data

Contact material	$AgSnO_2$+0.2µm Au
Type of contact	Crest Contact
Rated switching capacity	250VAC 10A AC1 2'500VA
Electr. life AC 1(360 cycles/h)	approx.100'000
Inrush current max.	25A for 20ms
Switching voltage range	5 to 250 VDC/VAC
Switching current range*	10mA to 10A
Switching capacity range*	60mW to 2'500W(VA)
Contact resistance (as delivered)	≤100mΩ/6V/100mA

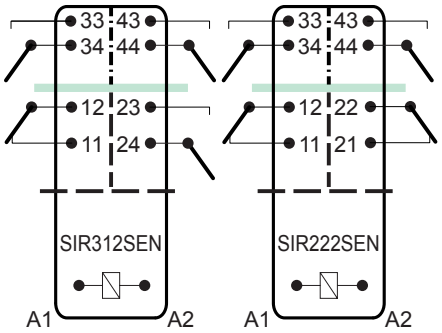
*Guided values

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
5	3.75	≥0.5	72.0	69.4 ± 10%
6	4.5	≥0.6	60.0	100 ± 10%
9	6.75	≥0.9	40.0	225 ± 10%
12	9.0	≥1.2	30.0	400 ± 10%
18	13.5	≥1.8	20.0	900 ± 10%
24	18.0	≥2.4	15.0	1'600 ± 10%
48	36.0	≥3.6	7.5	6'400 ± 13%
60	45.0	≥4.5	6.0	10'000 ± 15%

Circuit Diagram (view on relay upper side)



Insulation Data

- Basic insulation	at 250VAC
- Air and creepage distance	>4mm
- Test voltage	2'500V/50Hz/1min
- Double or reinforced insulation	
- Air and creepage distance	at 250VAC >8mm
- Test voltage	4'000V/50Hz/1min
- Double or reinforced insulation	
- Air and creepage distance	at 250VAC >10mm
- Test voltage	5'000V/50Hz/1min
Test voltage contact oopen	1'500V/50Hz/1min
Creepage resitance	CTI 250
Pollution degree	2
Overvoltage category	III
Insulation resistance at Up 500VDC	>100MΩ

Additional Data

Mechanical endurance	>10x10^6 operations
Switching frequency, mechanical	15Hz
Response time (all NO closed)	typically 18ms
Drop-out time** (all NC closed)	typically 5ms
Bounce time of NO contact	typically 6ms
Bounce time of NC contact	typically 12ms
Shock resitance 16ms	NO > 10g
	NC > 6g
Vibration resistance	NO > 5g
(10-200Hz)	NC > 1.5g
Resistance to short circuiting contacts	1'000A SCPD 10A gG/gL (pre-fuse)
Ambient temperature	-40°C to +70°C
Thermal Resistance	55K/W
Temperature limit for coil	120°C
Weight	ca. 30g
Mounting position	any
Type of protection	RT II
Solder bath temperature	270°C/5s

**without spark suppression

Tests, Regulations

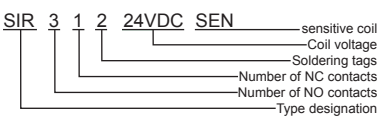
Approvals

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

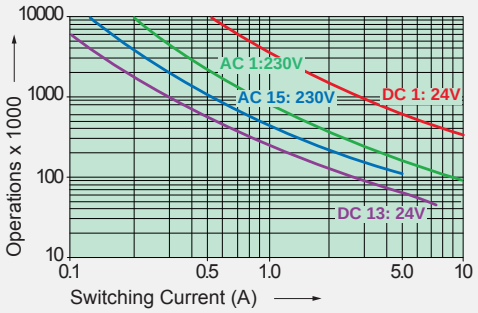
Options, Accessories

PCB socket	see page 30

Product Key



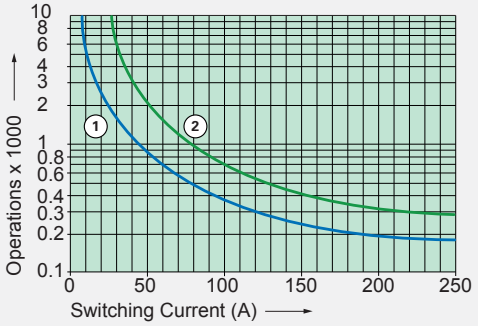
Contact Lifetime



Maximal switching characteristics
(DIN EN60947-5-1, Tab.C2)
AC 15: 230V / 5A
DC 13: 24V / 7.5A / 0.1Hz
UL 508: C600 / R300

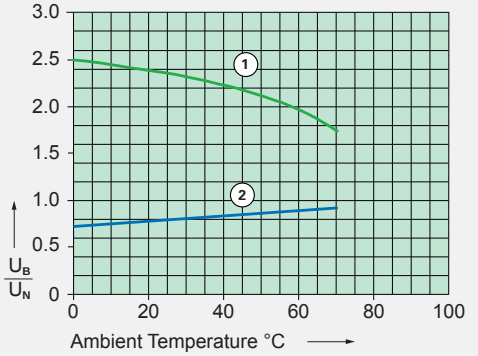
Maximal contact load AC 1 with 230V:
2 contacts with 10A each
3 contacts with 8.4A each

Load Limit Curve with Direct Current



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

Excitation Voltage Range



1) Max. excitation voltage with contact load: ≤6A (2 contacts)
2) Min. excitation voltage (guaranteed values) without previous operation

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

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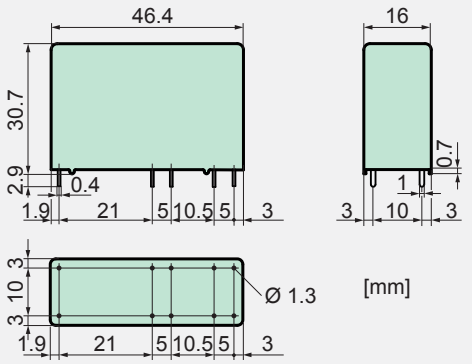
SIR 4 Power Series

Relay Key Data

- PCB Relay with forcibly guided contacts
- Protective separation between coil/control contacts and output contacts (>10mm) and output contacts side by side (>8mm)
- EN50205 type A
- Contact mounting:
  SIR312P Control contacts 1NO / 1NC
  Output contacts 2NO
  SIR222P Control contacts 2NC
  Output contacts 2NO
- Inrush current 60A / continuous current 12A
- Mean coil power 0.75 W
- Holding coil power 0.23 W
- For railway application (EN50155) on request

Dimensions



Control Contacts

Contact material	$AgSnO_2$+0.2µm Au
Rated switching capacity	250VAC 6A AC1 1'500VA
Electr. life AC 1(360 cycles/h)	approx.100'000
Inrush current max.	15A for 20ms
Switching voltage range	5 to 250 VDC/VAC
Switching current range*	5mA to 6A
Switching capacity range*	60mW to 1'500W(VA)
Contact resistance (as delivered)	≤100mΩ/6V/100mA

Output Contacts

Contact material	$AgSnO_2$
Rated switching capacity	250VAC (440VAC) 12A AC1 3'000VA
Electr. life AC 1(360 cycles/h)	approx.250'000
Inrush current max.	60A for 20ms
Switching voltage range	5 to 250 VDC (480 VAC)
Switching current range*	10mA to 12A
Switching capacity range*	120mW to 3'000W(VA)
Contact resistance (as delivered)	≤100mΩ/6V/100mA

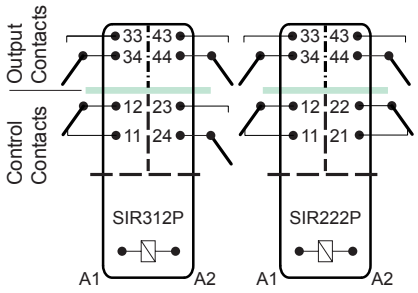
*Guided values

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
5	≤3.5	≥0.5	151.0	33 ± 10%
12	≤8.4	≥1.2	63.1	190 ± 10%
18	≤12.6	≥1.8	41.6	432 ± 10%
20	≤14.0	≥2.0	37.7	530 ± 10%
24	≤16.8	≥2.4	31.5	760 ± 10%
48	≤33.6	≥4.8	15.7	3'050 ± 10%
60	≤42.0	≥6.0	12.5	4'800 ± 13%
110	≤77.0	≥11.0	6.8	16'000 ± 15%

Circuit Diagram (view on relay upper side)



Insulation Data

- Basic insulation	at 250VAC
- Air and creepage distance	>4mm
- Test voltage	2'500V/50Hz/1min
- Double or reinforced insulation	at 250VAC
- Air and creepage distance	>8mm
- Test voltage	4'000V/50Hz/1min
- Double or reinforced insulation	at 250VAC
- Air and creepage distance	>10mm
- Test voltage	5'000V/50Hz/1min
Test voltage contact open	1'500V/50Hz/1min
Creepage resistance	CTI 250
Pollution degree	2
Overvoltage category	III
Insulation resistance at Up 500VDC	>100MΩ

Additional Data

Mechanical endurance	>10x10^6 operations
Switching frequency, mechanical	15Hz
Response time (all NO closed)	typically 15ms
Drop-out time** (all NC closed)	typically 4ms
Bounce time of NO contact	typically 6ms
Bounce time of NC contact	typically 12ms
Shock resistance 16ms	NO > 17g NC > 7g
Vibration resistance (10-200Hz)	NO > 10g NC > 4.5g
Resistance to short circuiting control contacts	1'000A SCPD 6A gG/gL (pre-fuse)
Resistance to short circuiting output contacts	1'000A SCPD 16A gG/gL (pre-fuse)
Ambient temperature	-40°C to +70°C
Thermal resistance	55K/W
Temperature limit for coil	120°C
Weight	ca. 32g
Mounting position	any
Type of protection	RT II
Solder bath temperature	270°C/5s

**without spark suppression

Tests, Regulations

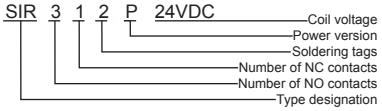
Approvals

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

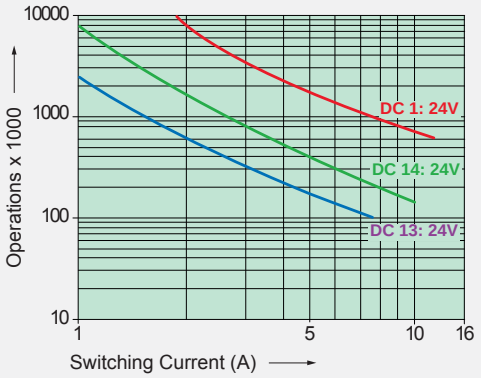
Options, Accessories

PCB socket	see page 30

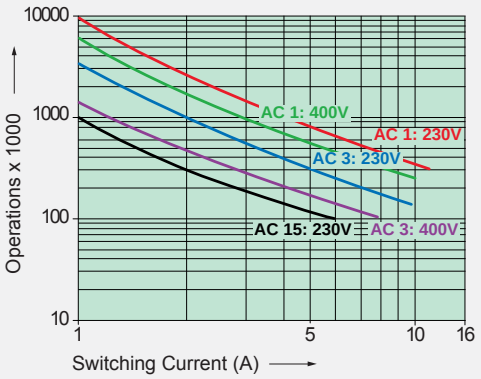
Product Key



Contact Lifetime (output contacts) DC

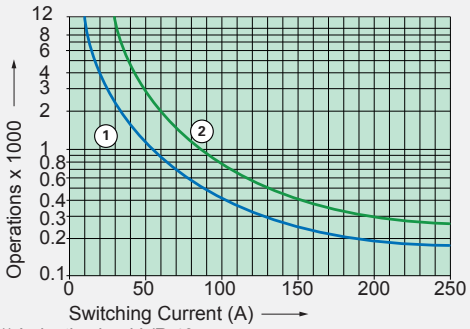


Contact Lifetime (output contacts) AC



Maximal contact load AC 1 with 230V:
2 contacts with 12A each

Load Limit Curve with Direct Current



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

Excitation Voltage Range

1) Max. excitation voltage with contact load:
≤2A control contacts, ≤10A output contacts
2) Min. excitation voltage (guaranteed values) without previous operation

ELESTA relays GmbH, Heuteilstrasse 18, CH - 7310 Bad Ragaz, Switzerland
Fon: +41 (0)81 303 54 00
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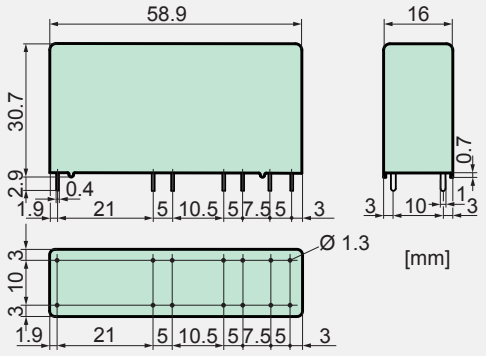
SIR 6 Series

Relay Key Data

- PCB Relay with forcibly guided contacts
- Protective separation between coil/control contacts and output contacts (>10mm) as well as protective separation between the output contacts themselves (>8mm)
- EN50205 type A
- Contact mounting: SIR332 3NO / 3NC
  SIR422 4NO / 2NC
  SIR512 5NO / 1NC
- Small external dimensions
- Mean coil power 0.75 W
- Holding coil power 0.22 W
- For railway application (EN50155) on request

Dimensions



Contacts Data

Contact material	$AgSnO_2$+0.2µm Au
Type of contact	Crest contact
Rated switching capacity	250VAC 10A AC1 2‘500VA
Electr. life AC 1(360 cycles/h)	approx.100‘000
Inrush current max.	25A for 20ms
Switching voltage range	5 to 250 VDC/VAC
Switching current range*	10mA to 10A
Switching capacity range*	60mW to 2‘500W(VA)
Contact resistance (as delivered)	≤100mΩ/6V/100mA

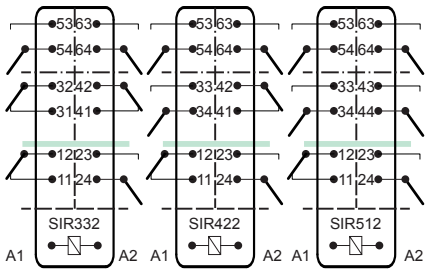
*Guided values

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
5	3.5	≥0.5	151.0	33 ± 10%
6	4.2	≥0.6	125.0	48 ± 10%
12	8.4	≥1.2	63.1	190 ± 10%
18	12.6	≥1.8	41.6	432 ± 10%
24	16.8	≥2.4	31.5	760 ± 10%
48	33.6	≥4.8	15.7	3‘050 ± 10%
60	42.0	≥6.0	12.5	4‘800 ± 13%
110	77.0	≥11.0	6.8	16‘000 ± 15%

Circuit Diagram (view on relay upper side)



Insulation Data

- Basic insulation	at 250VAC
- Air and creepage distance	>4mm
- Test voltage	2‘500V/50Hz/1min
- Double or reinforced insulation	at 250VAC
- Air and creepage distance	>8mm
- Test voltage	4‘000V/50Hz/1min
- Double or reinforced insulation	at 250VAC
- Air and creepage distance	>10mm
- Test voltage	5‘000V/50Hz/1min
Test voltage contact open	1‘500V/50Hz/1min
Creepage resistance	CTI 250
Pollution degree	2
Overvoltage category	III
Insulation resistance at Up 500VDC	>100MΩ

Additional Data

Mechanical endurance	>10x10⁶ operations
Switching frequency, mechanical	15Hz
Response time (all NO closed)	typically 15ms
Drop-out time** (all NC closed)	typically 4ms
Bounce time of NO contact	typically 6ms
Bounce time of NC contact	typically 12ms
Shock resistance 16ms	NO > 10g
	NC > 6g
Vibration resistance	NO > 5g
(10-200Hz)	NC > 2g
Resistance to short circuiting contacts	1‘000A SCPD 10A gG/gL (pre-fuse)
Ambient temperature	-40°C to +70°C
Thermal Resistance	55K/W
Temperature limit for coil	120°C
Weight	ca. 35g
Mounting position	any
Type of protection	RT II
Solder bath temperature	270°C/5s

**without spark suppression

Tests, Regulations

Approvals

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

Options, Accessories

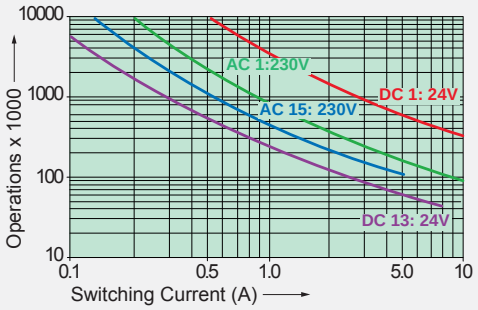
PCB socket	see page 30

Product Key

SIR 4 2 2 24VDC

- 24VDC — Coil voltage
- 2 — Soldering tags
- 2 — Number of NC contacts
- 4 — Number of NO contacts
- SIR — Type designation

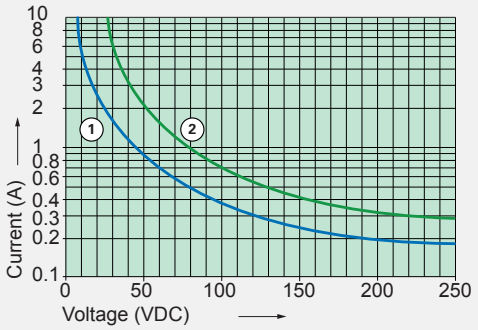
Contact Lifetime



Max. switching characteristics (DIN EN 60947-5-1, Tab. C2):
AC 15: 230V / 5A
DC 13: 24V / 7.5A / 0.1Hz
UL 508: C600 / R300

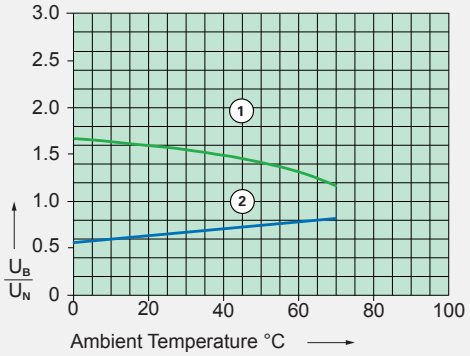
Maximal contact load at AC 1 with 230V:
2 contacts with 10A each
3 contacts with 8.4A each
4 contacts with 7.3A each
5 contacts with 6A each

Load Limit Curve with Direct Current



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

Excitation Voltage Range



1) Max. excitation voltage with contact load: ≤6A
2) Min. excitation voltage (guaranteed values) without previous operation

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

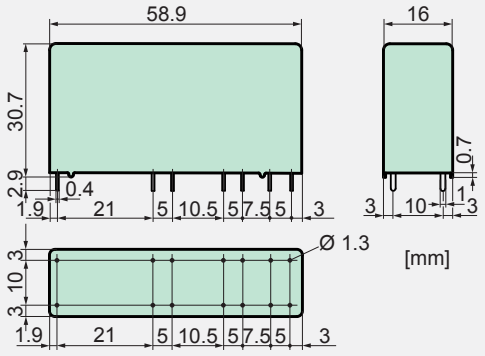
ELESTA relays GmbH, Heuteilstrasse 18, Fon: +41 (0)81 303 54 00
CH - 7310 Bad Ragaz, Switzerland Fax: +41 (0)81 303 54 01

SIR 6 sensitive Series

Relay Key Data

- PCB Relay with forcibly guided contacts
- Protective separation between coil/control contacts and output contacts (>10mm) as well as protective separation between the output contacts themselves (>8mm)
- EN50205 type A
- Contact mounting: SIR332 3NO / 3NC
  SIR422 4NO / 2NC
  SIR512 5NO / 1NC
- Small external dimensions
- Mean coil power 0.5 W
- Holding coil power 0.18 W
- For railway application (EN50155) on request

Dimensions



Contacts Data

Contact material	$AgSnO_2$+0.2µm Au
Type of contact	Crest contact
Rated switching capacity	250VAC 10A AC1 2‘500VA
Electr. life AC 1(360 cycles/h)	approx.100‘000
Inrush current max.	25A for 20ms
Switching voltage range	5 to 250 VDC/VAC
Switching current range*	10mA to 10A
Switching capacity range*	60mW to 2‘500W(VA)
Contact resistance (as delivered)	≤100mΩ/6V/100mA

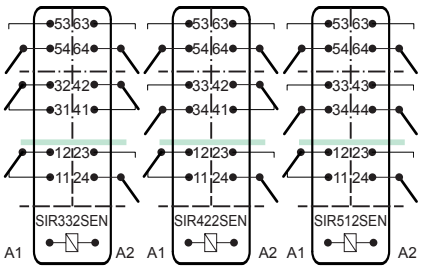
*Guided values

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
5	3.75	≥0.5	100.0	50 ± 10%
6	4.5	≥0.6	83.3	72 ± 10%
9	6.75	≥0.9	56.2	160 ± 10%
12	9.0	≥1.2	41.6	288 ± 10%
18	13.5	≥1.8	27.7	648 ± 10%
24	18.0	≥2.4	20.8	1‘150 ± 10%
48	36.0	≥3.6	10.4	4‘600 ± 13%
60	45.0	≥4.5	8.3	7‘200 ± 15%

Circuit Diagram (view on relay upper side)



Insulation Data

- Basic insulation	at 250VAC
- Air and creepage distance	>4mm
- Test voltage	2‘500V/50Hz/1min
- Double or reinforced insulation	at 250VAC
- Air and creepage distance	>8mm
- Test voltage	4‘000V/50Hz/1min
- Double or reinforced insulation	at 250VAC
- Air and creepage distance	>10mm
- Test voltage	5‘000V/50Hz/1min
Test voltage contact oopen	1‘500V/50Hz/1min
Creepage resitance	CTI 250
Pollution degree	2
Overvoltage category	III
Insulation resistance at Up 500VDC	>100MΩ

Additional Data

Mechanical endurance	>10x10⁶ operations
Switching frequency, mechanical	15Hz
Response time (all NO closed)	typically 18ms
Drop-out time** (all NC closed)	typically 5ms
Bounce time of NO contact	typically 6ms
Bounce time of NC contact	typically 12ms
Shock resitance 16ms	NO > 10g
	NC > 6g
Vibration resistance	NO > 5g
(10-200Hz)	NC > 2g
Resistance to short circuiting contacts	1‘000A SCPD 10A gG/gL (pre-fuse)
Ambient temperature	-40°C to +70°C
Thermal Resistance	55K/W
Temperature limit for coil	120°C
Weight	ca. 35g
Mounting position	any
Type of protection	RT II
Solder bath temperature	270°C/5s

**without spark suppression

Tests, Regulations

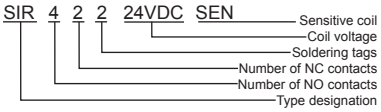
Approvals

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

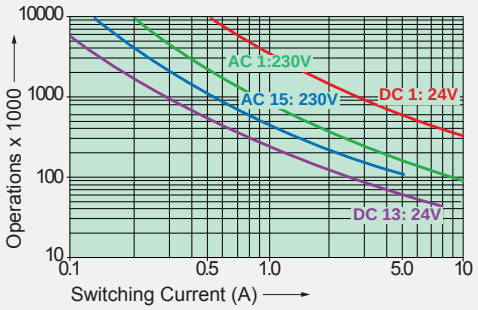
Options, Accessories

PCB socket	see page 30

Product Key



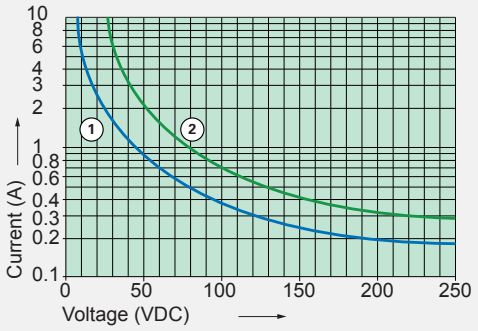
Contact Lifetime



Max. switching characteristics (DIN EN 60947-5-1, Tab. C2):
AC 15: 230V / 5A
DC 13: 24V / 7.5A / 0.1Hz
UL 508: C600 / R300

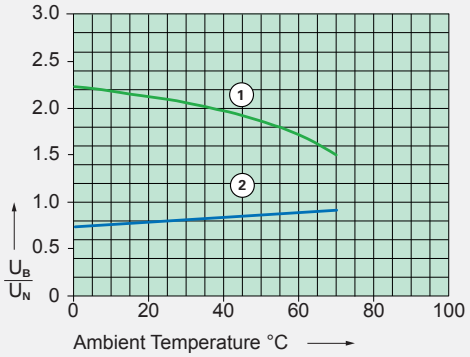
Maximal contact load at AC 1 with 230V:
2 contacts with 10A each
3 contacts with 8.4A each
4 contacts with 7.3A each
5 contacts with 6A each

Load Limit Curve with Direct Current



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

Excitation Voltage Range



1) Max. excitation voltage with contact load: ≤6A (2 contacts)
2) Min. excitation voltage (guaranteed values) without previous operation

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

ELESTA relays GmbH, Heuteilstrasse 18, CH - 7310 Bad Ragaz, Switzerland
Fon: +41 (0)81 303 54 00
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SIR 8 Series

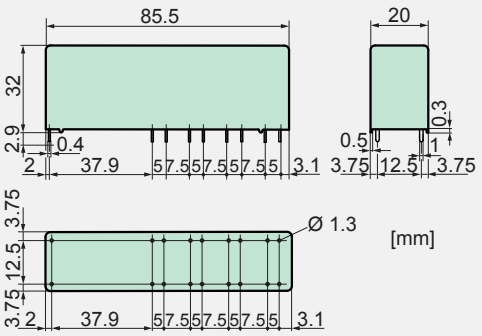
Relay Key Data

- PCB Relay with forcibly guided contacts
- Protective separation between coil and output contacts (>10mm) and contacts in one row (>8mm) as well as protective separation between left and right contact side (>10mm)
- EN50205 type A
- Contact mounting:

SIR262	2NO / 6NC	SIR352	3NO /5NC
SIR442	4NO / 4NC	SIR532	5NO /3NC
SIR622	6NO / 2NC	SIR712	7NO /1NC

- Small external dimensions
- Mean coil power 1.3 W
- Holding coil power 0.39 W
- For railway application (EN50155) on request

Dimensions



Contacts Data

Contact material	$AgSnO_2$+0.2µm Au
Type of contact	Crest contact
Rated switching capacity	250VAC 10A AC1 2'500VA
Electr. life AC 1(360 cycles/h)	approx.100'000
Inrush current max.	25A for 20ms
Switching voltage range	5 to 250 VDC/VAC
Switching current range*	10mA to 10A
Switching capacity range*	60mW to 2'500W(VA)
Contact resistance (as delivered)	≤100mΩ/6V/100mA

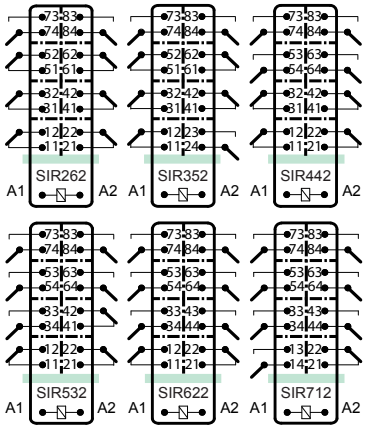
*Guided values

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
6	4.2	≥0.6	218.0	27.5 ± 10%
12	8.4	≥1.2	109.0	110 ± 10%
18	12.6	≥1.8	72.0	250 ± 10%
24	16.8	≥2.4	54.5	440 ± 10%
48	33.6	≥4.8	27.2	1'760 ± 10%
60	42.0	≥6.0	11.8	2'750 ± 10%
110	77.0	≥11.0	6.8	9'250 ± 13%
220	154.0	≥22.0	5.9	37'000 ± 15%

Circuit Diagram (view on relay upper side)



Insulation Data

- Double or reinforced insulation	at 250VAC
- Air and creepage distance	>8mm
- Test voltage	4'000V/50Hz/1min
- Double or reinforced insulation	at 250VAC
- Air and creepage distance	>10mm
- Test voltage	5'000V/50Hz/1min
Test voltage contact open	1'500V/50Hz/1min
Creepage resistance	CTI 250
Pollution degree	2
Overvoltage category	III
Insulation resistance at Up 500VDC	>100MΩ

Additional Data

Mechanical endurance	>10x10⁶ operations
Switching frequency, mechanical	15Hz
Response time (all NO closed)	typically 15ms
Drop-out time** (all NC closed)	typically 4ms
Bounce time of NO contact	typically 6ms
Bounce time of NC contact	typically 12ms
Shock resistance 16ms	NO > 10g NC > 6g
Vibration resistance (10-200Hz)	NO > 8g NC > 2.5g
Resistance to short circuiting contacts	1'000A SCPD 10A gG/gL (pre-fuse)
Ambient temperature	-40°C to +70°C
Thermal Resistance	40K/W
Temperature limit for coil	125°C
Weight	ca. 60g
Mounting position	any
Type of protection	RT II
Solder bath temperature	270°C/5s

**without spark suppression

Tests, Regulations

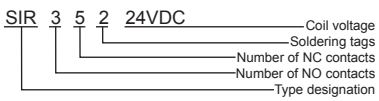
Approvals

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

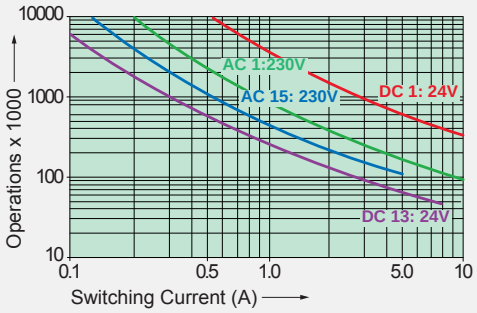
Options, Accessories

none available

Product Key



Contact Lifetime

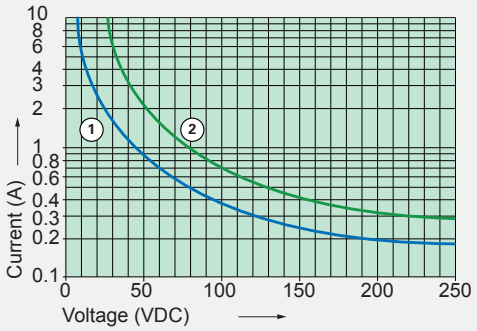


Max. switching characteristics (DIN EN 60947-5-1, Tab. C2):

AC 15:	230V / 5A
DC 13:	24V / 7.5A / 0.1Hz
UL 508:	C600 / R300

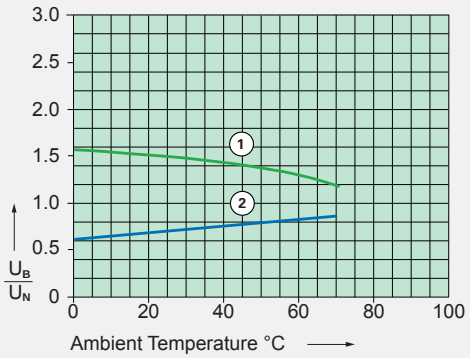
Maximal contact load at AC 1 with 230V:
2 contacts with 10A each
3 contacts with 8.4A each
4 contacts with 7.3A each
5 contacts with 6.5A each
6 contacts with 6A each

Load Limit Curve with Direct Current



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

Excitation Voltage Range



1) Max. excitation voltage with contact load: ≤6A
2) Min. excitation voltage (guaranteed values) without previous operation

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

ELESTA relays GmbH, Heuteilstrasse 18, CH - 7310 Bad Ragaz, Switzerland
Fon: +41 (0)81 303 54 00
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SIR 10 Series

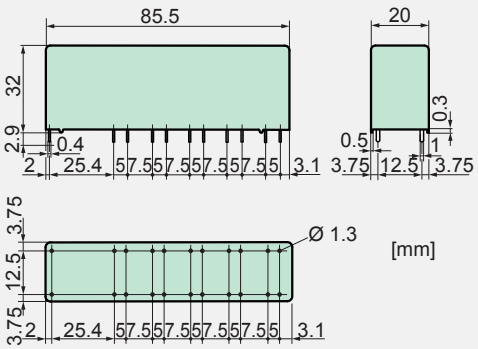
Relay Key Data

- PCB Relay with forcibly guided contacts
- Protective separation between coil/control contacts and output contacts (>8mm) and output contacts in one row (>8mm) as well as protective separation between left and right contact side (>10mm)
- EN50205 type A
- Contact mounting:

SIR372	3NO / 7NC	SIR732	7NO /3NC
SIR462	4NO / 6NC	SIR822	8NO /2NC
SIR552	5NO / 5NC	SIR912	9NO /1NC
SIR642	6NO / 4NC		

- Mean coil power 1.3 W
- Holding coil power 0.39 W
- For railway application (EN50155) on request

Dimensions



Contacts Data

Contact material	$AgSnO_2$+0.2µm Au
Type of contact	Crest contact
Rated switching capacity	250VAC 10A AC1 2'500VA
Electr. life AC 1(360 cycles/h)	approx.100'000
Inrush current max.	25A for 20ms
Switching voltage range	5 to 250 VDC/VAC
Switching current range*	10mA to 10A
Switching capacity range*	60mW to 2'500W(VA)
Contact resistance (as delivered)	≤100mΩ/6V/100mA

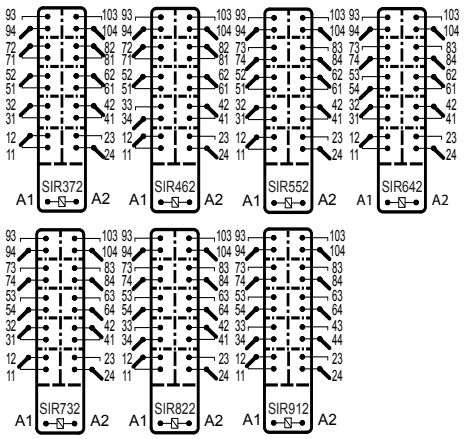
*Guided values

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
6	4.2	≥0.6	218.0	27.5 ± 10%
12	8.4	≥1.2	109.0	110 ± 10%
18	12.6	≥1.8	72.0	250 ± 10%
24	16.8	≥2.4	54.5	440 ± 10%
48	33.6	≥4.8	27.2	1'760 ± 10%
60	42.0	≥6.0	11.8	2'750 ± 10%
110	77.0	≥11.0	6.8	9'250 ± 13%
220	154.0	≥22.0	5.9	37'000 ± 15%

Circuit Diagram (view on relay upper side)



Insulation Data

- Basic insulation	at 250VAC
- Air and creepage distance	>4mm
- Test voltage	2'500V/50Hz/1min
- Double or reinforced insulation	at 250VAC
- Air and creepage distance	>8mm
- Test voltage	4'000V/50Hz/1min
Test voltage contact open	1'500V/50Hz/1min
Creepage resistance	CTI 250
Pollution degree	2
Overvoltage category	III
Insulation resistance at Up 500VDC	>100MΩ

Additional Data

Mechanical endurance	>10x10^6 operations
Switching frequency, mechanical	15Hz
Response time (all NO closed)	typically 18ms
Drop-out time** (all NC closed)	typically 5ms
Bounce time of NO contact	typically 8ms
Bounce time of NC contact	typically 12ms
Shock resistance 16ms	NO > 10g NC > 6g
Vibration resistance (10-200Hz)	NO > 8g NC > 2.5g
Resistance to short circuiting contacts	1'000A SCPD 10A gG/gL (pre-fuse)
Ambient temperature	-40°C to +70°C
Thermal Resistance	40K/W
Temperature limit for coil	125°C
Weight	ca. 60g
Mounting position	any
Type of protection	RT II
Solder bath temperature	270°C/5s

**without spark suppression

Tests, Regulations

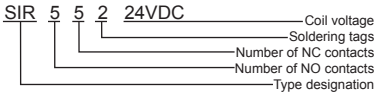
Approvals

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

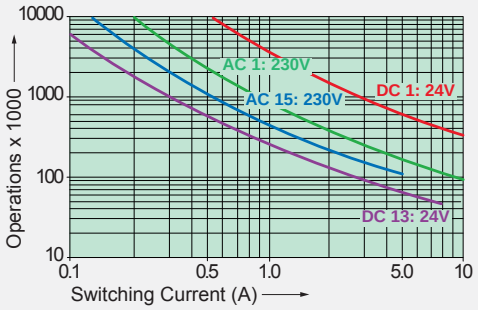
Options, Accessories

none available

Product Key



Contact Lifetime

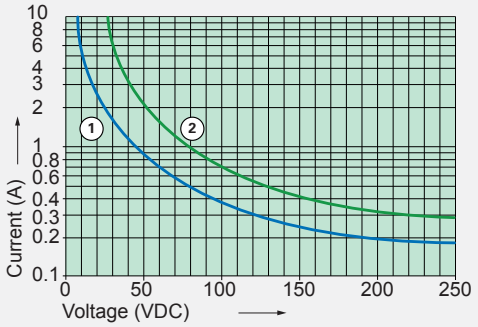


Max. switching characteristics (DIN EN 60947-5-1, Tab. C2):

AC 15:	230V / 5A
DC 13:	24V / 7.5A / 0.1Hz
UL 508:	C600 / R300

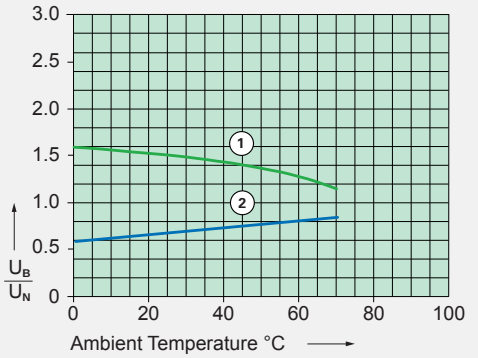
Maximal contact load at AC 1 with 230V:
2 contacts with 10A each
3 contacts with 8.4A each
4 contacts with 7.3A each
5 contacts with 6.5A each
6 contacts with 6A each
8 contacts with 5A each
9 contacts with 4.2A each

Load Limit Curve with Direct Current



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

Excitation Voltage Range



1) Max. excitation voltage with contact load: ≤6A
2) Min. excitation voltage (guaranteed values) without previous operation

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

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SIP 6 Series

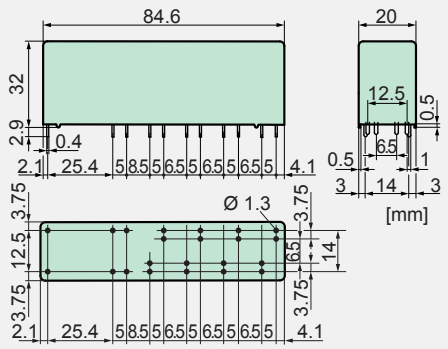
Relay Key Data

- PCB Relay with forcibly guided contacts
- Protective separation between coil/control contacts and output contacts (>8mm) and output contacts in one row (>10mm)
- EN50205 type A
- Contact mounting:

SIP512	Control contacts	1NO / 1NC
	Output contacts	4NO
SIP422	Control contacts	2NC
	Output contacts	4NO

- High switching power
- Mean coil power 1.3 W
- Holding coil power 0.39 W
- For railway application (EN50155) on request

Dimensions



Control Contact

Contact material	$AgSnO_2$+0.2µm Au
Rated switching capacity	250VAC 6A AC1 1'500VA
Electr. life AC 1(360 cycles/h)	approx.100'000
Inrush current max.	15A for 20ms
Switching voltage range	5 to 250 VDC/VAC
Switching current range*	5mA to 6A
Switching capacity range*	60mW to 1'500W(VA)
Contact resistance (as delivered)	≤100mΩ/6V/100mA

Output Contact

Contact material	$AgSnO_2$
Rated switching capacity	250VAC (440VAC) 16A AC1 4'000VA
Electr. life AC 1(360 cycles/h)	approx.250'000
Inrush current max.	60A for 20ms
Switching voltage range	5 to 250 VDC/VAC
Switching current range*	10mA to 16A
Switching capacity range*	120mW to 4'000W(VA)
Contact resistance (as delivered)	≤100mΩ/6V/100mA

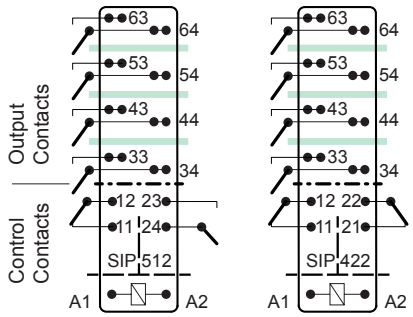
*Guided values

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
6	4.2	≥0.6	218.0	27.5 ± 10%
12	8.4	≥1.2	109.0	110 ± 10%
18	12.6	≥1.8	72.0	248 ± 10%
24	16.8	≥2.4	54.5	440 ± 10%
48	33.6	≥4.8	27.2	1'760 ± 10%
60	42.0	≥6.0	21.8	2'750 ± 10%
110	77.0	≥11.0	11.8	9'250 ± 13%
220	154.0	≥22.0	5.9	37'000 ± 15%

Circuit Diagram (view on relay upper side)



Insulation Data

- Basic insulation	at 250VAC
- Air and creepage distance	>4mm
- Test voltage	2'500V/50Hz/1min
- Double or reinforced insulation	at 250VAC
- Air and creepage distance	>8mm
- Test voltage	4'000V/50Hz/1min
- Double or reinforced insulation	at 250VAC
- Air and creepage distance	>10mm
- Test voltage	5'000V/50Hz/1min
Test voltage contact open	1'500V/50Hz/1min
Creepage resistance	CTI 250
Pollution degree	2
Overvoltage category	III
Insulation resistance at Up 500VDC	>100MΩ

Additional Data

Mechanical endurance	>10x10⁶ operations
Switching frequency, mechanical	15Hz
Response time (all NO closed)	typically 18ms
Drop-out time** (all NC closed)	typically 5ms
Bounce time of NO contact	typically 8ms
Bounce time of NC contact	typically 12ms
Shock resistance 16ms	NO > 10g NC > 8g
Vibration resistance (10-200Hz)	NO > 10g NC > 5g
Resistance to short circuiting control contacts	1'000A SCPD 6A gG/gL (pre-fuse)
Resistance to short circuiting output contacts	1'000A SCPD 16A gG/gL (pre-fuse)
Ambient temperature	-40°C to +70°C
Thermal resistance	40K/W
Temperature limit for coil	125°C
Weight	ca. 60g
Mounting position	any
Type of protection	RT II
Solder bath temperature	270°C/5s

**without spark suppression

Tests, Regulations

Approvals

UL File E188953	Sec. 4
Insulation class IEC 60664-1	250VAC
Protection class II	VDE 0106
Fire protection requirements	UL 94 / V0

Options, Accessories

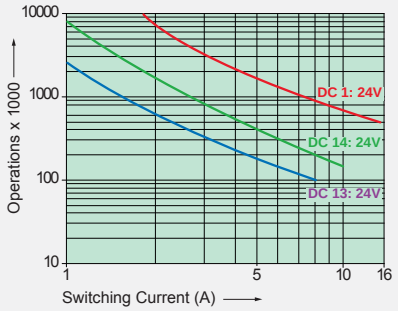
none available

Product Key

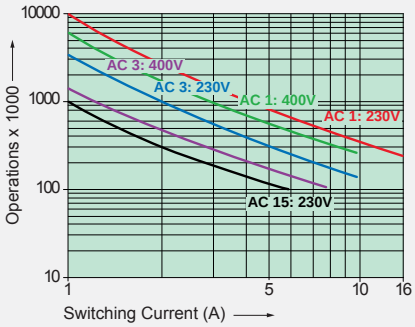
SIP 4 2 2 24VDC

- 24VDC — Coil voltage
- 2 — Soldering tags
- 2 — Number of NC contacts
- 4 — Number of NO contacts
- SIP — Type designation

Contact Lifetime (output contacts) DC

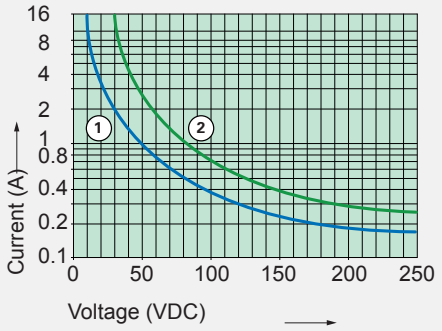


Contact Lifetime (output contacts) AC



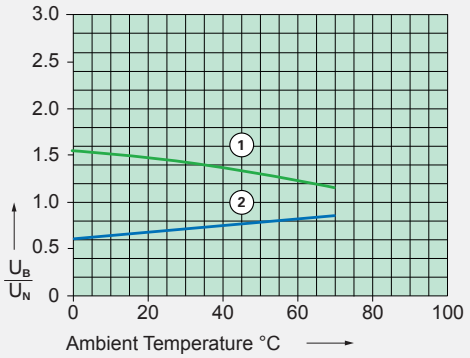
UL 508: A600 / R150
Maximal contact load at AC 1 with 230V:
2 contacts with 16A each
3 contacts with 12A each
4 contacts with 10A each

Load Limit Curve with Direct Current



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

Excitation Voltage Range



1) Max. excitation voltage with contact load: control contacts ≤4A, output contacts ≤12A
2) Min. excitation voltage (guaranteed values) without previous operation

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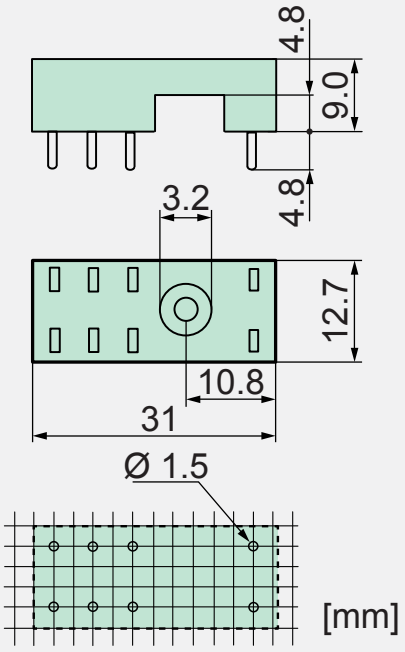
Relay Accessories for Series
SGR 282 Z, SIR 282, SGR 282 ZK

PCB socket SRP-SGR2

Socket data

- With plastic hold down clip
- Soldering tags for PCB
- 2.5mm pinning

Dimensions



Technical data

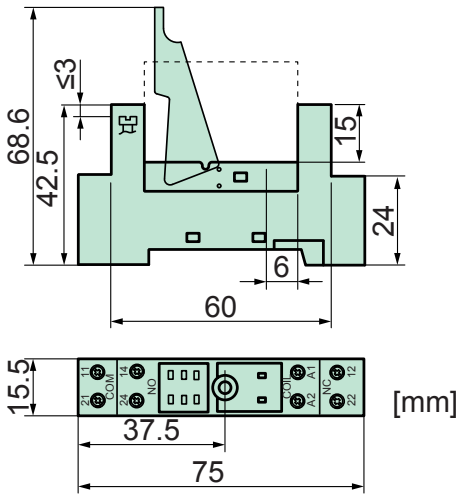
Rated current	2x8A
Rated voltage	300VAC
Test voltage coil/contacts	4'000Veff
Insulation class (IEC 60664-1)	250VAC
Creepage resistance	CTI 250
Weight	approx. 4g
Ambient temperature	-40°C to +70°C
Packing unit	100 pcs
Approvals	UL, cUL
UL File	E113714

DIN rail socket SRD-SGR2

Socket data

- With plastic grip and marking tag (1 pc)
- Screw terminals
- 2.5mm pinning
- Assembly on DIN rail 35mm or single-hole mounting with M3 screw

Dimensions



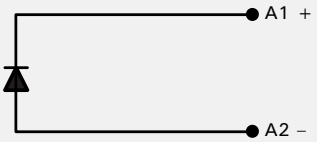
Technical data

Rated current	2x8A
Rated voltage	300VAC
Test voltage coil/contacts	2'500Veff
Insulation class (IEC 60664-1)	250VAC
Creepage resistance	CTI 250
Weight	approx. 40g
Ambient temperature	-25°C to +70°C
Cross sections for connection with	
wires	2x2.5mm²
end sleeves for strands	2x1.5mm²
Maximales Drehmoment	0.8Nm
Packing unit	20 pcs
Approvals	UL, cUL
UL File	E113714

Modules for SRD-SGR2

Module SRD-SGR2-M01

- For DIN rail socket SRD-SGR2
- Diode 6VDC to 230VDC
  (+ on terminal A1)

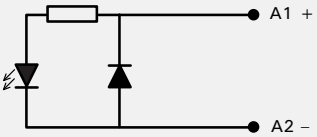


Module SRD-SGR2-M02

- For DIN rail socket SRD-SGR2
- Diode with red LED, 6VDC to 24VDC
  (+ on terminal A1)

Module SRD-SGR2-M03

- For DIN rail socket SRD-SGR2
- Diode with green LED, 6VDC to 24VDC
  (+ on terminal A1)

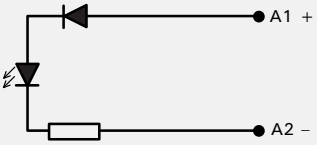


Modul SRD-SGR2-M04

- For DIN rail socket SRD-SGR2
- Red LED, 6VDC to 24VDC
  (+ on terminal A1)

Modul SRD-SGR2-M05

- For DIN rail socket SRD-SGR2
- Green LED, 6VDC to 24VDC
  (+ on terminal A1)



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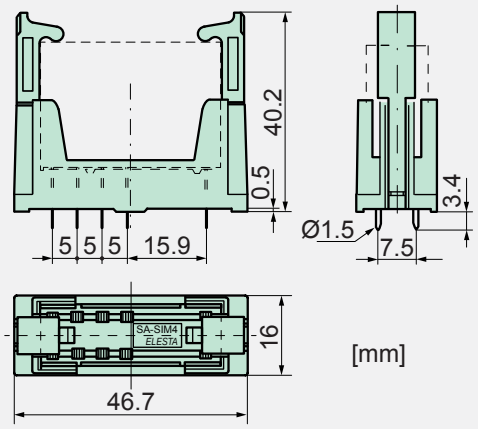
Relay Accessories for Series
SIM 3 and SIM 4

Print socket SRP-SIM4

Socket data

- With integrated retaining/ejector handels
- Soldering tags for PCB

Dimensions



Technical data

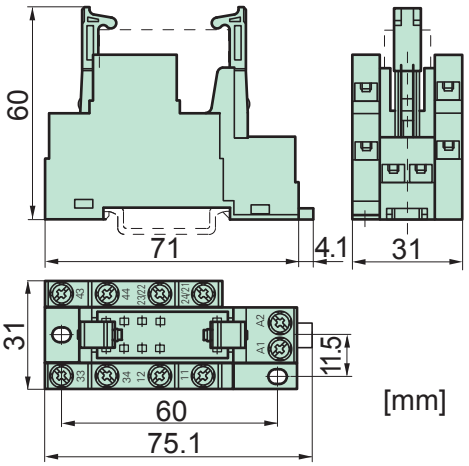
Rated current	8A
Rated voltage	250VAC
Test voltage coil/contacts	4'000Veff
Insulation class (IEC 60664-1)	250VAC
Creepage resistance	CTI 250
Weight	approx. 11g
Ambient temperature	-25°C to +70°C
Packing unit	10 pcs
Approvals	UL, cUL
UL File	E301947

DIN rail socket SRD-SIM4

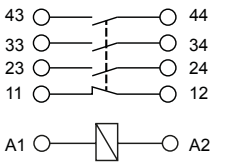
Socket data

- With integrated retaining/ejector handels
- Screw terminals
- Assembly on DIN rail 35mm or with 2xM3 screws

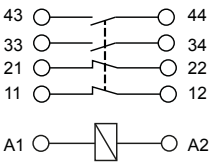
Dimensions



SRD-SIM4 (SIM312...)



SRD-SIM4 (SIM222...)



Technical data

Rated current	8A
Rated voltage	250VAC
Test voltage coil/contacts	2'500Veff
Insulation class (IEC 60664-1)	250VAC
Creepage resistance	CTI 250
Weight	approx. 65g
Ambient temperature	-25°C to +70°C
Cross sections for connection with	
wires	2x2.5mm²
end sleeves for strands	2x1.5mm²
Maximales Drehmoment	0.8Nm
Packing unit	10 pcs
Approvals	UL, cUL
UL File	E301947

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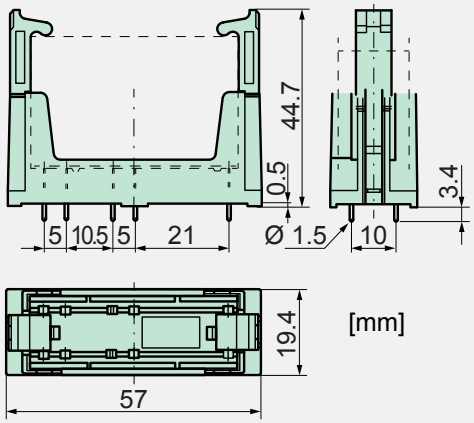
Relay Accessories for Series
SIR 4 and SIR 6

Print socket SRP-SIR4

Socket data

- PCB socket for SIR4 contacts
- With integrated retaining/ejector handels
- Soldering tags for PCB

Dimensions



Technical data

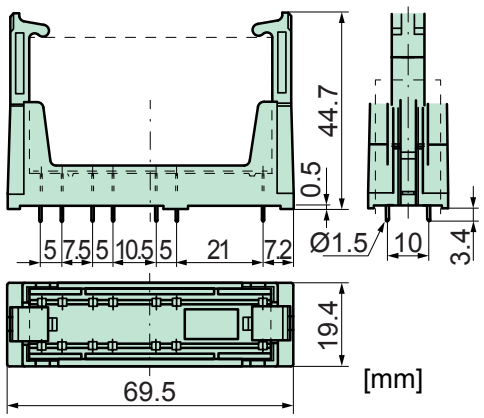
Rated current	8A
Rated voltage	250VAC
Test voltage coil/contacts	4'000Veff
Insulation class (IEC 60664-1)	250VAC
Creepage resistance	CTI 250
Weight	approx. 15g
Ambient temperature	-25°C to +70°C
Packing unit	10 pcs
Approvals	UL, cUL
UL File	E301947

Print socket SRP-SIR6

Socket data

- PCB socket for SIR6 contacts
- With integrated retaining/ejector handels
- Soldering tags for PCB

Dimensions



Technical data

Rated current	8A
Rated voltage	250VAC
Test voltage coil/contacts	4'000Veff
Insulation class (IEC 60664-1)	250VAC
Creepage resistance	CTI 250
Weight	approx. 17g
Ambient temperature	-25°C to +70°C
Packing unit	10 pcs
Approvals	UL, cUL
UL File	E301947

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Notes

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Notes

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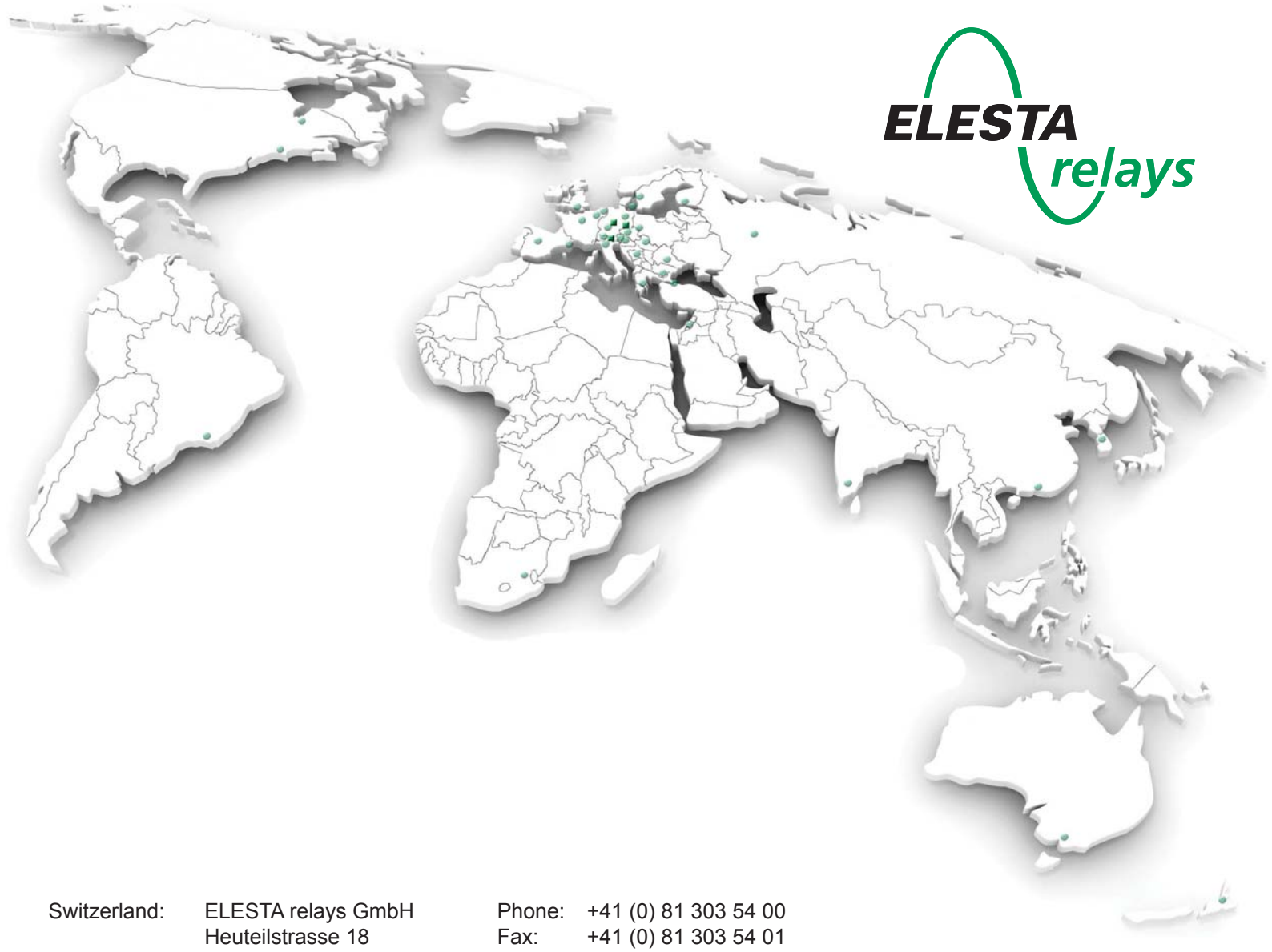

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