

Power PCB Relay RT1 Inrush

- 1 pole 16 A, 1 CO or 1 NO contact
- For inrush peak currents up to 80 A
- Sensitive coil 400 mW
- 5 kV / 10 mm coil-contact
- Reinforced insulation
- Ambient temperature 85°C
- RoHS compliant (Directive 2002/95/EC)
as per product date code 0413

Applications

Domestic appliances, heating control, lighting control



F0177-B

Approvals

VDE REG.-Nr. 6106, **CE** us E214025
Technical data of approved types on request

Contact data

Contact configuration	1 CO or 1 NO
Contact set	single contact
Type of interruption	micro disconnection
Rated current	16 A
Rated voltage / max.switching voltage AC	240/400 VAC
Limiting continuous current	UL: 20 A
Maximum breaking capacity AC	4000 VA
Limiting making capacity, max 4 s, duty factor 10%	30 A
max 20 ms (incandescent lamps)	80 A
Contact material	AgNi 90/10, AgSnO ₂
Mechanical endurance	> 30 x 10 ⁶ cycles
Rated frequency of operation with / without load	6 / 1200 min ⁻¹

Contact ratings

Type	Load	Cycles
RT31K	1000 W incandescent lamp, 250 VAC, NO contact	9x10 ⁴
RT31L	1000 W incandescent lamp, 250 VAC, NO contact	8x10 ⁴
RT31K	16 A, 240 VAC, NO contact, 85°C, VDE/UL508	3x10 ⁴
RT31L	16 A, 240 VAC, NO contact, 85°C, VDE/UL508	5x10 ⁴
RT31L	21/3.5 A, 230 VAC, compressor, cosφ=0.5, NO contact	2,3x10 ⁵

Coil data, DC-coil

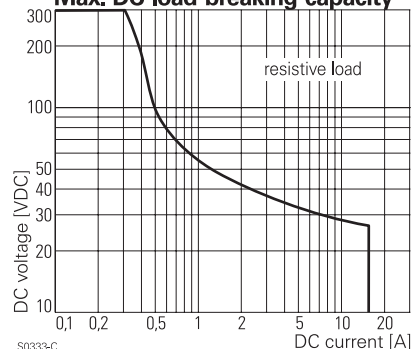
Rated coil voltage range DC coil	5...110 VDC
Coil power DC coil	typ 400 mW
Operative range	2
Coil insulation system according UL1446	class F

Coil versions, DC-coil

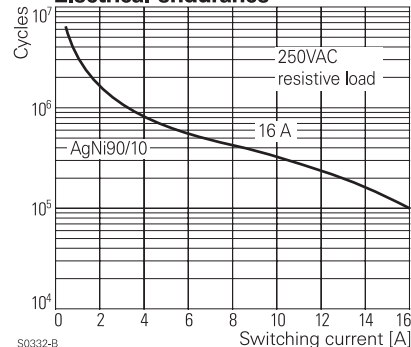
Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ω	Rated coil power mW
012	12	8.4	1.2	360±10%	400
024	24	16.8	2.4	1440±10%	400
048	48	33.6	4.8	5520±10%	417
060	60	42.0	6.0	8570±12%	420

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

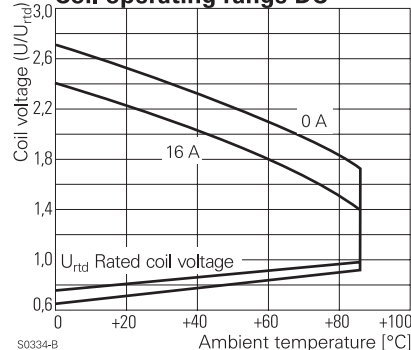
Max. DC load breaking capacity



Electrical endurance



Coil operating range DC



Power PCB Relay RT1 Inrush (Continued)

Coil data, bistable coils

	1 coil	2 coils
Coil power	typ 400 mW	typ 600 mW
Operative range	2	
Limiting voltage, % of rated coil voltage	120%	150%
Minimum energization duration	30 ms	
Maximum energization duration	1 min at < 10% DF	
Coil insulation system according UL1446	class F	

Coil versions, bistable coil

Coil code	Rated voltage VDC	Operate voltage VDC	Reset voltage VDC	Coil resistance Ω	Rated coil power mW
bistable, 1 coil					
A05	5	3.5	3.5	$62 \pm 10\%$	403
A06	6	4.2	4.2	$90 \pm 10\%$	400
A12	12	8.4	8.4	$360 \pm 10\%$	400
A24	24	16.8	16.8	$1440 \pm 10\%$	400
bistable, 2 coils					
F05	5	3.5	3.5	$42 \pm 10\%$	595
F06	6	4.2	4.2	$55 \pm 10\%$	655
F12	12	8.4	8.4	$240 \pm 10\%$	600
F24	24	16.8	16.8	$886 \pm 10\%$	650

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Coils - operation

Version	1 coil		2 coils		
Coil terminals	A1	A2	A1	A3	A2
Pull-in	+	-		+	-
Reset	-	+	-	+	

Contact position not defined at delivery

Insulation

Dielectric strength coil-contact circuit	5000 V _{rms}	
open contact circuit	1000 V _{rms}	
Clearance / creepage coil-contact circuit	$\geq 10 / 10$ mm	
Material group of insulation parts	$\geq$ IIIa	
Tracking index of relay base	PTI 250 V	
Insulation to IEC 60664-1		
Type of insulation coil-contact circuit	reinforced	
open contact circuit	functional	
Rated insulation voltage	250 V	
Pollution degree	3	2
Rated voltage system	240 V	400 V
Overvoltage category	III	

Other data

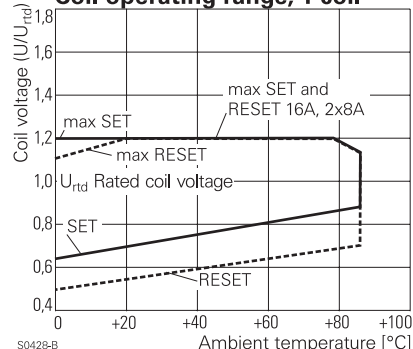
RoHS - Directive 2002/95/EC	compliant as per product date code 0413	
Flammability class according to UL94	V-0	
Ambient temperature range DC coil	-40...+85°C	
bistable 1 coil	-10...+85°C	
bistable 2 coils	-40...+85°C	
Operate- / release time DC coil	typ 8 / 3 ms	
Operate- / reset time bistable	typ 5 / 4 ms	
Bounce time NO / NC contact	typ 2 / 3 ms	
Vibration resistance DC coil (function) NO / NC contact	20 / 5 g, 30 ... 500 Hz	
Shock resistance (destruction)	100 g	
Category of protection	RTII - flux proof	
Mounting	pcb or on socket	
Mounting distance	0 mm	
Resistance to soldering heat flux-proof version	270 °C / 10 s	
Relay weight	14 g	
Packaging unit DC coil, bistable 1 coil	20 / 500 pcs	
bistable 2 coils	100 pcs	

Accessories

For details see datasheet

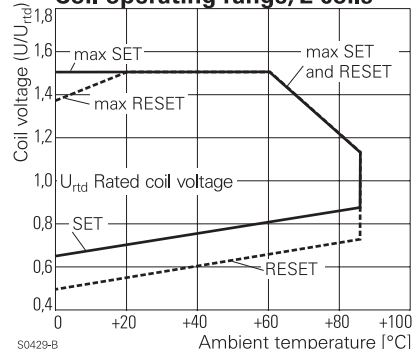
Accessories Power Relay RT

Coil operating range, 1 coil



S0428-B

Coil operating range, 2 coils



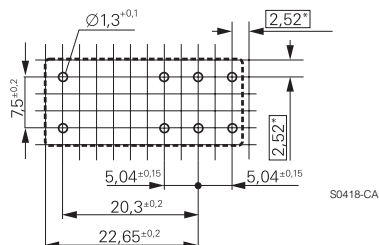
S0429-B

Power PCB Relay RT1 Inrush (Continued)

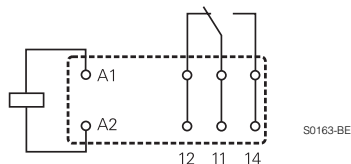
PCB layout / terminal assignment

Bottom view on solder pins

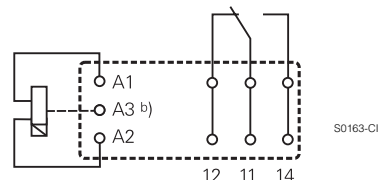
16 A, 1 CO contact, pinning 5 mm



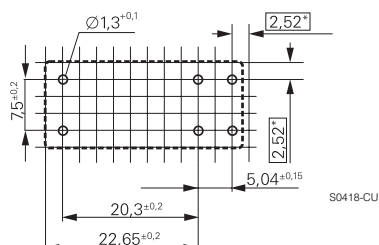
monostable version



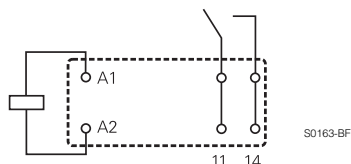
bistable version a)



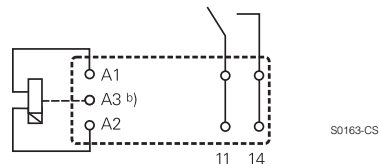
16 A, 1 NO contact, pinning 5 mm



monostable version



bistable version a)

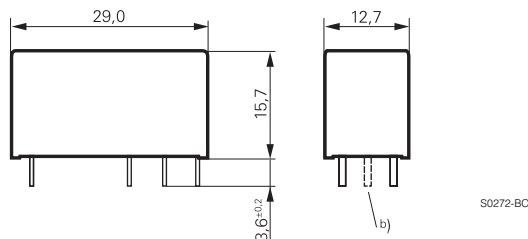


*) With the recommended PCB hole sizes a grid pattern from 2.5 mm to 2.54 mm can be used.

a) Indicated contact position during or after coil energization with reset voltage.

b) for 2 coil version only

Dimensions



Product key

Type

Version

3 16 A, pinning 5 mm, flux proof

Contact configuration

1 1 CO contact

3 1 NO contact

Contact material

K AgNi 90/10

L AgSnO₂

Coil

Coil code: please refer to coil versions table, preferred types in bold print

R	T	3				
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Product key	Version	Contacts	Contact material	Coil	Part number
RT33K012	16 A	1 NO contact	AgNi 90/10	12 VDC	2-1393240-3
RT33K024	pinning 5 mm			24 VDC	2-1393240-4
RT33K048				48 VDC	2-1393240-5
RT33L012			AgSnO ₂	12 VDC	3-1393240-3
RT33L024				24 VDC	3-1393240-5
RT33L048				48 VDC	3-1393240-6