

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



F0177-B

Applications

Domestic appliances, heating control, lighting control

Approvals

VDE REG.-Nr. 6106, **UL** 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% max 20 ms (incandescent lamps)	30 A 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

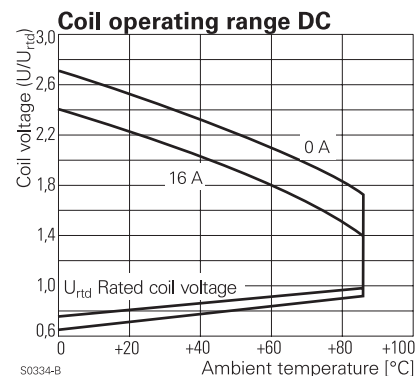
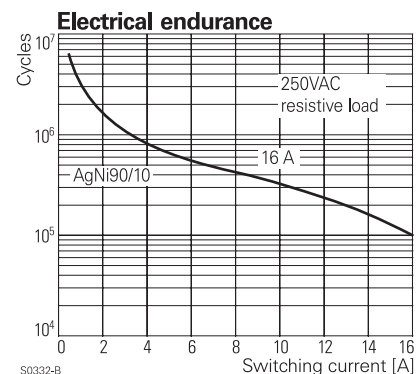
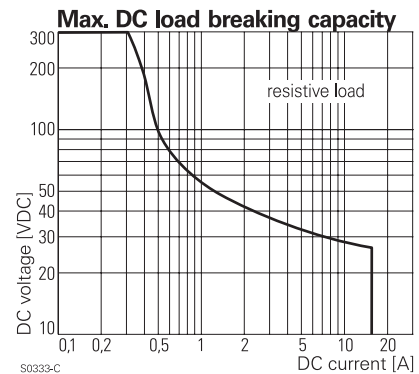
Coil data, DC-coil

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



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 ± 10%	403
A06	6	4.2	4.2	90 ± 10%	400
A12	12	8.4	8.4	360 ± 10%	400
A24	24	16.8	16.8	1440 ± 10%	400

bistable, 2 coils

F05	5	3.5	3.5	42 ± 10%	595
F06	6	4.2	4.2	55 ± 10%	655
F12	12	8.4	8.4	240 ± 10%	600
F24	24	16.8	16.8	886 ± 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	≥ 10 / 10 mm		
Material group of insulation parts	≥ 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
Overtoltage category	III		

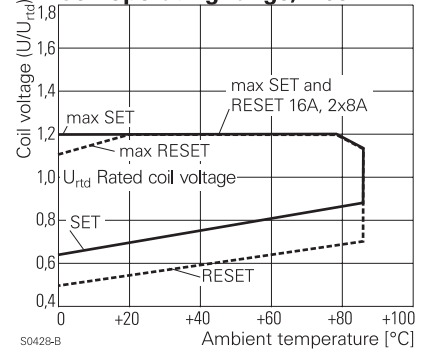
Other data

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		

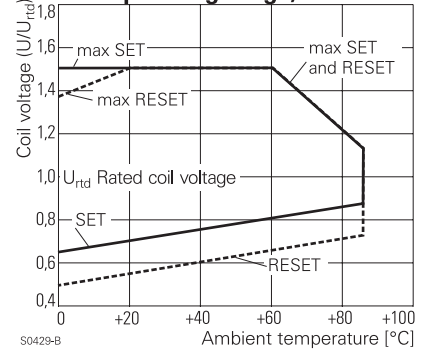
Accessories

For details see datasheet Accessories Power Relay RT

Coil operating range, 1 coil



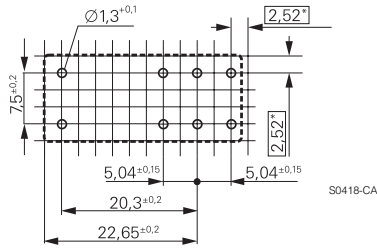
Coil operating range, 2 coils



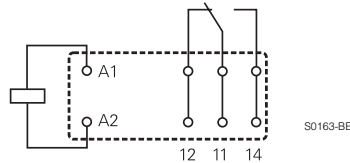
PCB layout / terminal assignment

Bottom view on solder pins

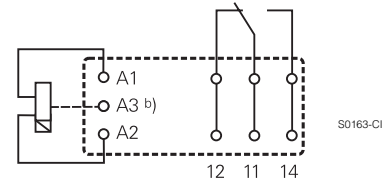
16 A, 1 CO contact, pinning 5 mm



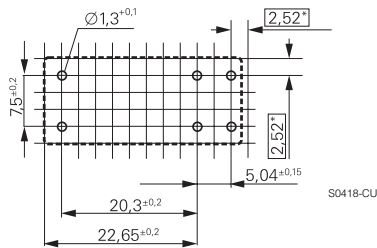
monostable version



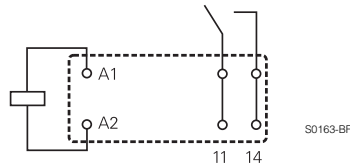
bistable version a)



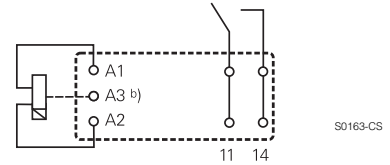
16 A, 1 NO contact, pinning 5 mm



monostable version



bistable version a)

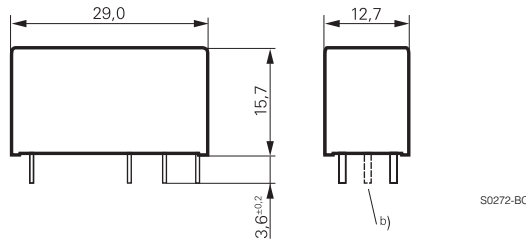


*) With the recommended PCB hole sizes a grid pattern from 2.5 mm to 2.54 mm can be used.

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