

Power PCB Relay RT1 Inrush

- 1 pole 16 A, 1 CO or 1 NO contact
- For inrush peak currents up to 80 A
- Mono- or bistable coil
- 5 kV / 10 mm coil-contact
- Reinforced insulation
- Ambient temperature 85°C

Applications

Domestic appliances, heating control, lighting control



F0177-C

Approvals

VDE REG.-Nr. 6106, cULus E214025, cSP[®] 14385
 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 voltage / max. switching voltage AC	250 / 400 VAC
Rated current	16 A
Limiting continuous current	16 A, UL: 20 A (K-version only)
Maximum breaking capacity AC	4000 VA
Limiting making capacity, max 4 s, duty factor 10%	30 A
max 20 ms (incandescent lamps), RT33L version	80 A
Contact material	AgNi 90/10, AgSnO ₂
Rated frequency of operation with / without load	6 / 1200 min ⁻¹
Operate- / release time DC coil	max 9 / 6 ms
Operate- / reset time bistable	max 10 / 10 ms
Bounce time NO / NC contact	max 3 / 6 ms

Contact ratings

Type	Contact Load	Ambient temp. [°C]	Cycles
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IEC 61810

RT33L NO	16 A, 250 VAC, cosφ=1	85°C	50x10 ³
RT33K NO	16 A, 250 VAC, cosφ=1	85°C	30x10 ³

UL 508

RT33K NO	20 A, 277 VAC, general purpose	40°C	10x10 ³
RT33L NO	16 A, 277 VAC, resistive	85°C	50x10 ³
RT33L NO	1000 W Tungsten, 120 VAC, 60 Hz	40°C	6x10 ³
RT33L NO	1000 W standard ballast, 120 VAC, 60 Hz	40°C	6x10 ³

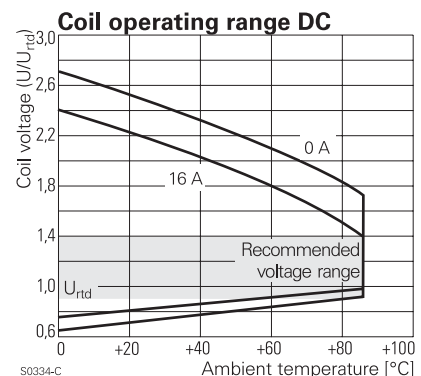
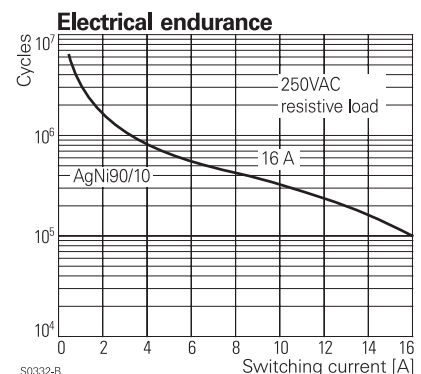
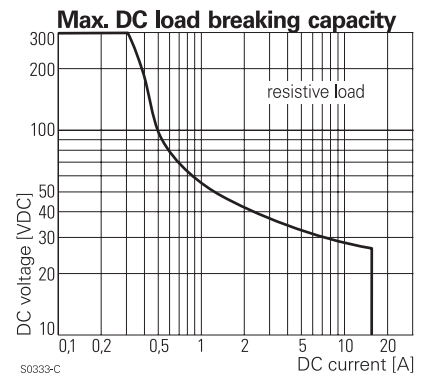
Coil data, DC-coil

Rated coil voltage range	5...110 VDC
Operative range to IEC 61810	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
005	5	3.5	0.5	62±10%	403
006	6	4.2	0.6	90±10%	400
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



Power PCB Relay RT1 Inrush (Continued)

Coil data, bistable coils	1 coil	2 coils
Rated coil voltage range	5...24 VDC	
Operative range to IEC 61810	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	2.8	62±10%	403
A06	6	4.2	3.3	90±10%	400
A12	12	8.4	6.6	360±10%	400
A24	24	16.8	13.2	1440±10%	400
bistable, 2 coils					
F05	5	3.5	2.8	42±10%	595
F06	6	4.2	3.3	55±10%	655
F12	12	8.4	6.6	240±10%	600
F24	24	16.8	13.2	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 61810-1		
Type of insulation coil-contact circuit	reinforced	
open contact circuit	micro disconnection	
Rated insulation voltage	250 V	
Pollution degree	3	2
Rated voltage system	240 V	230 / 400 V
Overvoltage category	III	

Other data

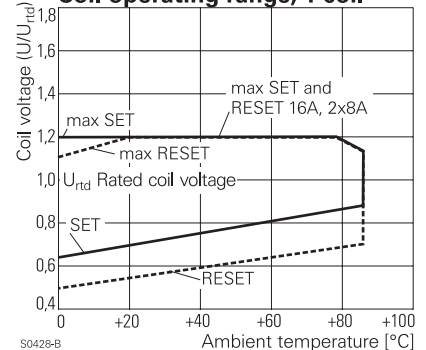
Mechanical endurance monostable	> 30 x 10 ⁶ cycles
bistable	> 5 x 10 ⁶ cycles
Material	RoHS - Directive 2002/95/EC compliant as per product date code 0413
Environment	
Ambient temperature range DC coil	-40...+85°C
bistable 1 coil	-10...+85°C
bistable 2 coils	-40...+85°C
Vibration resistance DC coil (function) NO / NC cont.20 / 5 g, 30 ... 500 Hz	
Shock resistance (destruction)	100 g
Category of protection	RTII - flux proof
Processing	
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

*) socket available for 1 coil version only, see Accessories

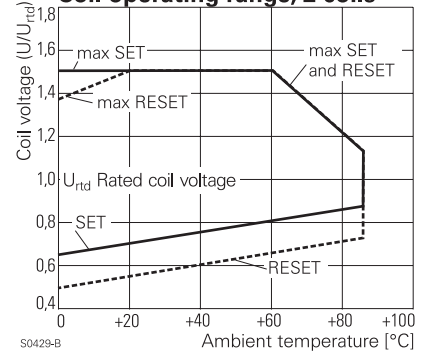
Accessories

For details see datasheet Accessories Power Relay RT

Coil operating range, 1 coil



Coil operating range, 2 coils

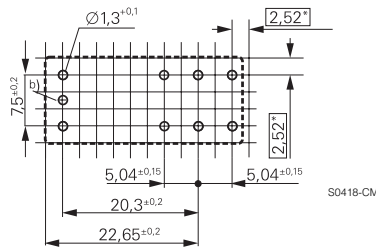


Power PCB Relay RT1 Inrush (Continued)

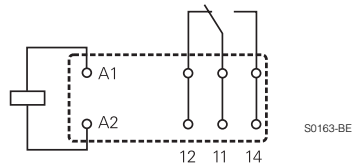
PCB layout / terminal assignment

Bottom view on solder pins

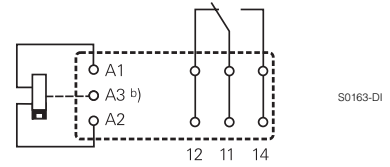
16 A, 1 CO contact, pinning 5 mm



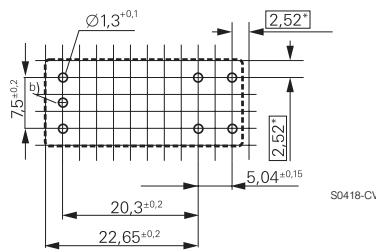
monostable version



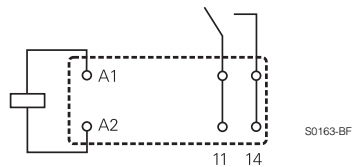
bistable version a)



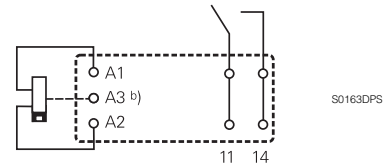
16 A, 1 NO contact, pinning 5 mm



monostable version



bistable version a)

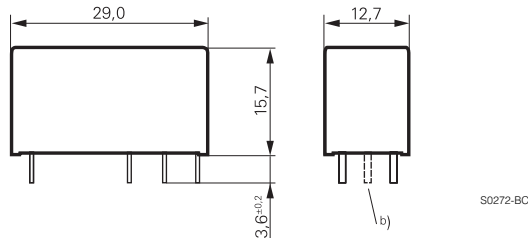


*) With the recommended PCB hole sizes a grid pattern from 2.5 mm to 2.54 mm can be used.

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

b) for 2 coil version only

Dimensions



Product key	Typical product key				RT	3	3	L	012
Type	RT Power PCB Relay RT1 Inrush								
Version	3 16 A, pinning 5 mm, flux proof								
Contact configuration	1 1 CO contact (1 form C)		3 1 NO contact (1 form A)						
Contact material	K AgNi 90/10			L AgSnO ₂					
Coil	Coil code: please refer to coil versions table, preferred types in bold print								

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