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**

F0177-C

Applications

Domestic appliances, heating control, lighting control

Approvals

VDE REG.-Nr. 6106, cULus E214025, cSPus 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
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

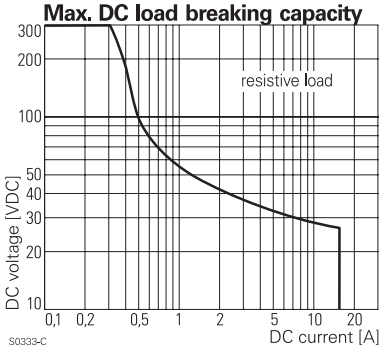
Rated coil voltage range	5...110 VDC
Operative range to IEC 61810	2
Coil insulation system according UL1446	class F

Coil versions, DC-coil

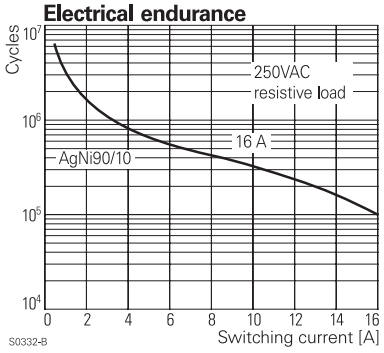
Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ω	Rated coil power mW
005	5	3.5	0.5	62±10%	403
006	6	4.2	0.6	90±10%	400
012	**12**	**8.4**	**1.2**	**360±10%**	**400**
024	**24**	**16.8**	**2.4**	**1440±10%**	**400**
048	48	33.6	4.8	5520±10%	417
060	60	42.0	6.0	8570±12%	420

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

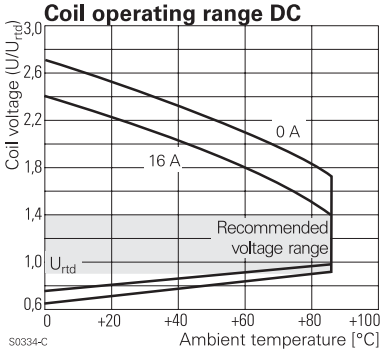
Max. DC load breaking capacity



Electrical endurance



Coil operating range DC



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Product specification according to IEC 61810-1. Product data, technical parameters, test conditions and processing information only to be used together with the 'Definitions' section in the catalogue or at schrackrelays.com in the 'Schrack' section.

Specifications subject to change.

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**

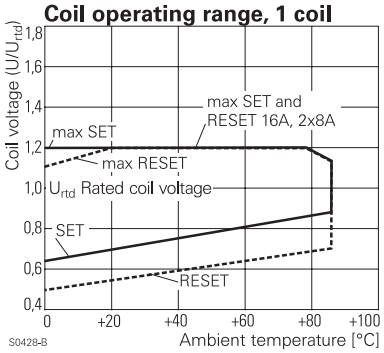
All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Coils - operation

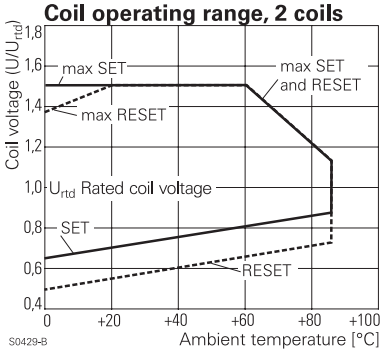
Version	1 coil		2 coils		
Coil terminals	A1	A2	A1	A3	A2
Pull-in	+	-		+	-
Reset	-	+	-	+	

Contact position not defined at delivery

Coil operating range, 1 coil



Coil operating range, 2 coils



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

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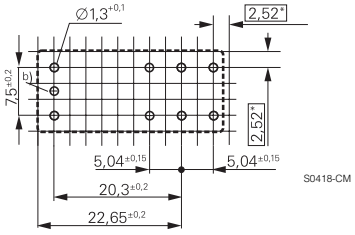
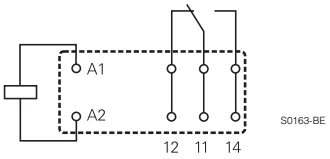
Power PCB Relay RT1 Inrush (Continued)

PCB layout / terminal assignment
Bottom view on solder pins

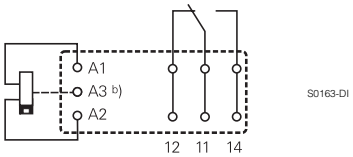
16 A, 1 CO contact, pinning 5 mm



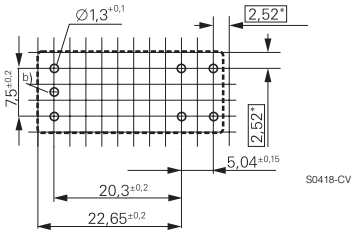
monostable version



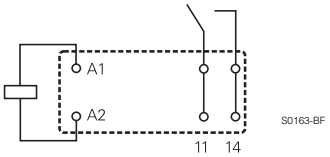
bistable version a)



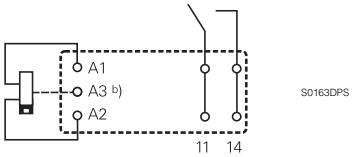
16 A, 1 NO contact, pinning 5 mm



monostable version



bistable version a)

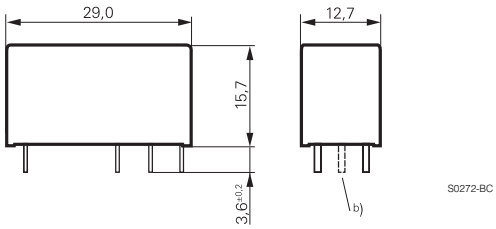


*) With the recommended PCB hole sizes a grid pattern from 2.5 mm to 2.54 mm can be used.

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

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