

Power PCB Relay RT1 Inrush

- 1 pole 16A, 1 form C (CO) or 1 form A (NO) contact
- For inrush peak currents up to 80A
- Mono- or bistable coil
- 5kV/10mm coil-contact
- Reinforced insulation
- Ambient temperature 85°C
- WG version: product in accordance to IEC 60335-1



F0177-C



Typical applications

Domestic appliances, heating control, lighting control

Approvals

 VDE Cert. No. 40007571, UL E214025, cCSAus 1142018,
 CQC 18002197247 (monostable), 18002197364 (bistable)

Technical data of approved types on request

Contact Data

Contact arrangement	1 form C (CO) or 1 form A (NO)
Rated voltage	250VAC
Max. switching voltage	400VAC
Rated current	16A
Limiting continuous current	16A, UL: 20A (K-version)
Limiting making current, max. 4s, df 10%	30A
max. 20ms (incandescent lamps), RT33L version	80A
Breaking capacity max.	4000VA
Contact material	AgNi90/10, AgSnO
Frequency of operation, with/without load	360/72000h ⁻¹
Operate/release time max., DC coil	9/6ms
Operate/Reset time max., bistable version	10/10ms
Bounce time max., form A/form B	3/6ms

Contact ratings

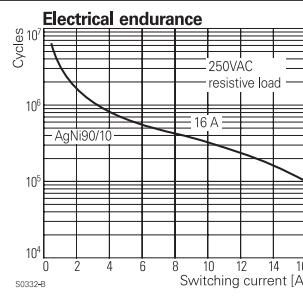
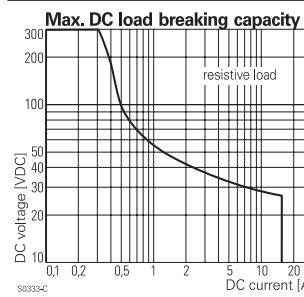
Type	Contact	Load	Cycles
IEC 61810			
RT33L	A (NO)	16A, 250VAC resistive, 85°C	50x10 ³
RT33L	A (NO)	10A, 400VAC resistive, 85°C	10x10 ³
RT31	C (CO)	16A, 250VAC resistive, 85°C	5x10 ³
RT33K	A (NO)	16A, 250VAC resistive, 85°C	30x10 ³
UL 508			
RT33K	A (NO)	20A, 277VAC general purpose, 40°C	10x10 ³
RT33L	A (NO)	16A, 250VAC resistive, 85°C	50x10 ³
RT31	C (CO)	16A, 250VAC resistive, 85°C	6x10 ³
RT33L	A (NO)	1000W Tungsten, 120VAC, 60 Hz, 40°C	6x10 ³
RT33L	A (NO)	1000W standard ballast, 120VAC, 60 Hz, 40°C	6x10 ³

EN 60947-4-1

RT31L/RT33L A (NO)	250V/6A, AC-3	6.050
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Mechanical endurance

 monostable version
 bistable version

 >30x106 operations
 >5x106 operations


Power PCB Relay RT1 Inrush (Continued)
Coil Data, bistable coils

	1 coil	2 coils
Magnetic system	polarized, bistable	
Coil voltage range	5 to 24VDC	
Operative range, IEC 61810	2	
Limiting voltage, % of rated coil voltage	120%	150%
Min./Max. energization duration	30ms/1min at <10% duty factor	
Coil insulation system according UL		class F

Insulation Data

Initial dielectric strength between open contacts	1000V _{rms}
between contact and coil	5000V _{rms}
Clearance/creepage between contact and coil	≥10/10mm
Material group of insulation parts	IIIa
Tracking index of relay base	PTI 250V

Coil Data (continued)
Coil versions, bistable coil

Coil code	Rated voltage VDC	Set voltage VDC	Reset voltage VDC	Coil resistance $\Omega \pm 10\%$	Rated coil power mW
bistable, 1 coil					
A03	3	2.1	1.7	21.4	429
A05	5	3.5	2.8	62	403
A06	6	4.2	3.3	90	400
A12	12	8.4	6.6	360	400
A24	24	16.8	13.2	1440	400
bistable, 2 coils					
F03	3	2.1	1.7	15	600
F05	5	3.5	2.8	42	595
F06	6	4.2	3.3	55	655
F12	12	8.4	6.6	240	600
F24	24	16.8	13.2	886	650

All figures are given for coil without pre-energization, at ambient temperature +23°C.

Other coil voltages on request.

Bistable coils - operation

Version	1 coil		2 coils		
Coil terminals	A1	A2	A1	A3	A2
Operate	+	-		+	-
Reset	-	+	-	+	
Contact position not defined at delivery					

Other Data

Material compliance: EU RoHS/ELV, China RoHS, REACH, Halogen content refer to the Product Compliance Support Center at www.te.com/customersupport/rohssupportcenter

Resistance to heat and fire

WG version according EN60335-1

Ambient temperature

-40 to 85°C

Category of environmental protection

IEC 61810

RTII - flux proof

RTIII - sealed

Vibration resistance (functional),

form A/form B contact, 30 to 500Hz

20/5g

Shock resistance (destructive)

100g

Terminal type

PCB-THT, plug-in²⁾

Weight

14g

Resistance to soldering heat THT, IEC 60068-2-20

RTII 270°C/10s

RTIII 260°C/5s

Packaging/unit tube/20 pcs., box/500 pcs.

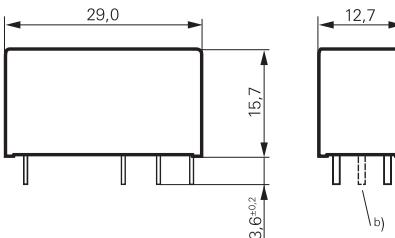
2) socket available for 1 coil version only, see Accessories

Accessories

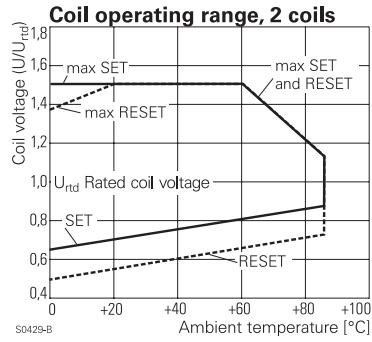
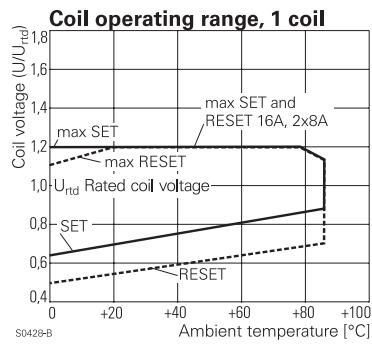
For details see datasheet [Accessories Industrial Power Relay RT^{2\)}](#)

Socket available for 1 coil version only.

NOTE: indicated contact ratings and electrical endurance data for direct wiring of relays (according IEC 61810-1); for relays mounted on sockets deratings may apply.

Dimensions


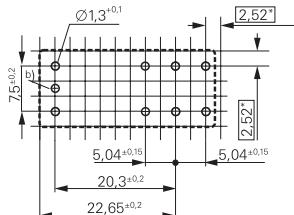
S0272-BC



Power PCB Relay RT1 Inrush (Continued)
PCB layout / terminal assignment

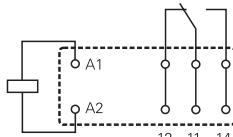
Bottom view on solder pins

16A, 1 form C (CO) contact, pinning 5mm



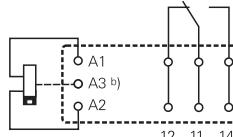
S0418-CM

monostable version



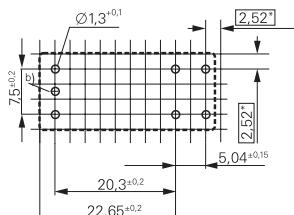
S0163-BE

bistable version a)



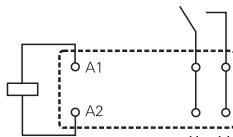
S0163-DI

16A, 1 form A (NO) contact, pinning 5mm



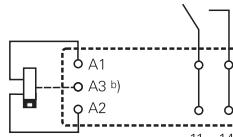
S0418-CV

monostable version



S0163-BF

bistable version a)

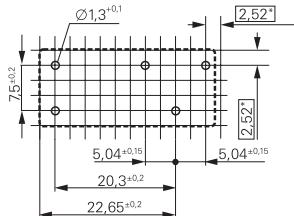


S0163DP

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

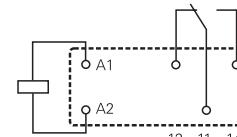
b) for 2 coil version only

12A, 1 form C (CO) contact, pinning 5mm



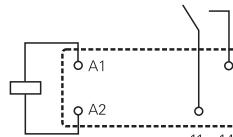
S0418-CN

monostable version, 1 form C (CO)



S0163-BC

monostable version, 1 form A (NO)

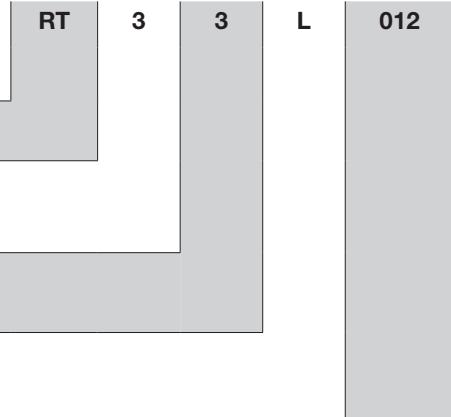


S0163-BD

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

Product code structure

Typical product code


Type

Power PCB Relay RT1 Inrush

Version

 3 16A, pinning 5mm, flux proof
D 16A, pinning 5mm, sealed

Contact configuration

 1 1 form C (CO) contact
3 1 form A (NO) contact

Contact material

 K AgNi 90/10
L AgSnO₂
Coil

Coil code: please refer to coil versions table

Version

 Blank Standard version
WG Product in accordance to IEC 60335-1

Power PCB Relay RT1 Inrush (Continued)

Product code	Version	Contacts	Contact material	Coil version	Coil	Version	Part Number
RT31L003	16A, pinning 5mm	1 form C (CO) contact	AgSnO ₂	Monostable	3VDC	Standard	7-1415547-5
RT31L006	flux proof				6VDC		7-1393239-2
RT31L012					12VDC		7-1393239-3
RT31L012WG					12VDC	IEC60335-1 compliant	4-1415539-8
RT31L024					24VDC	Standard	7-1393239-5
RT31L048					48VDC		7-1393239-6
RT31LA05				Bistable 1 coil	5VDC		6-1415544-3
RT31LA06					6VDC		3-1419136-9
RT31LA12					12VDC		3-1415517-1
RT31LA24					24VDC		7-1415014-1
RT31LF03				Bistable 2 coils	3VDC		8-1415389-1
RT31LF05					5VDC		6-1415544-6
RT31LF12					12VDC		3-1415402-1
RT31LF24					24VDC		8-1415014-1
RT33K012		1 form A (NO) contact	AgNi 90/10	Monostable	12VDC		2-1393240-3
RT33K024					5VDC		2-1393240-4
RT33KF12				Bistable 2 coils	12VDC		1-1415540-1
RT33L005			AgSnO ₂	Monostable	5VDC		3-1393240-0
RT33L005WG					5VDC	IEC60335-1 compliant	6-1415544-7
RT33L006					6VDC	Standard	3-1393240-1
RT33L012					12VDC		3-1393240-3
RT33L012WG					12VDC	IEC60335-1 compliant	2-1415538-2
RT33L024					24VDC	Standard	3-1393240-5
RT33L024WG					24VDC	IEC60335-1 compliant	2-1415544-3
RT33L048					48VDC	Standard	3-1393240-6
RT33LA03				Bistable 1 coil	3VDC		5-1415534-7
RT33LA05					5VDC		8-1415528-1
RT33LA06					6VDC		2-1393240-6
RT33LA12					12VDC		2-1393240-7
RT33LA24					24VDC		3-1415379-1
RT33LF05				Bistable 2 coils	5VDC		4-1419136-1
RT33LF12					12VDC		2-1393240-8
RT33LF24					24VDC		2-1393240-9
RTD1L005	16A, pinning 5mm	1 form C (CO) contact		Monostable	5VDC		1-1415537-7
RTD1L012	wash tight				12VDC		5-1393238-6
RTD1L024					24VDC		8-1415398-1
RTD1LA05				Bistable 1 coil	5VDC		6-1415544-4
RTD1LA24					24VDC		4-1415541-5
RTD3L012		1 form A (NO) contact		Monostable	12VDC		5-1415393-1
RTD3L024					24VDC		4-1415538-9

Mouser Electronics

Authorized Distributor

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[TE Connectivity:](#)

[5-1393239-1](#)