

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

Typical applications

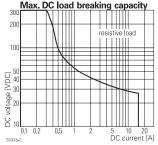


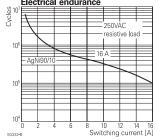
Approvais
VDE Cert. No. 40007571, UL E214025, cCSAus 1142018,
CQC 18002197247 (monostable), 18002197364 (bistable)
Technical data of approved types on request

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), RT3	33L version 80A
Breaking capacity max.	4000VA
Contact material	AgNi90/10, AgSnO
Frequency of operation, with/without loa	ad 360/72000h ⁻¹
Operate/release time max., DC coil	9/6ms
Operate/Reset time max., bistable versi	on 10/10ms
Bounce time max., form A/form B	3/6ms

Contact	ratings		
Туре	Contact	Load	Cycles
IEC 6181	0		
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	7-4-1		
RT31L/R	T33L A (NO)	250V/6A, AC-3	6.050

May DC load breaking consoits	Electrical andurance
bistable version	>5x106 operations
monostable version	>30x106 operations
echanical endurance	













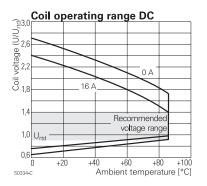


Coil Data, DC coil		
Coil voltage range	3 to 110VDC	
Operative range, IEC 61810	2	
Coil insulation system according UL	class F	

Coil vers	sions, DC co	il			
Coil	Rated	Operate	Release	Coil	Rated coil
code	voltage	voltage	voltage	resistance	power
	VDC	VDC	VDC	$\Omega \pm 10\%^{1)}$	mW
003	3	2.1	0.3	21.4	421
005	5	3.5	0.5	62	403
006	6	4.2	0.6	90	400
012	12	8.4	1.2	360	400
024	24	16.8	2.4	1440	400
048	48	33.6	4.8	5520	417
060	60	42.0	6.0	8570 ¹⁾	420

1) Coil resistance ±12%

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





Power PCB Relay RT1 Inrush (Continued)

Coil Data, bistable coils	1 coil	2 coils
Magnetic system	polarize	d, bistable
Coil voltage range	5 to :	24VDC
Operative range, IEC 61810		2
Limiting voltage, % of rated coil voltage	ge 120%	150%
Min./Max. energization duration	30ms/1min at 4	<10% duty factor
Coil insulation system according UL	cla	iss F

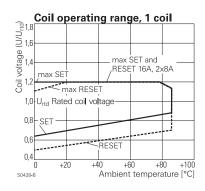
Coil Data (continued)

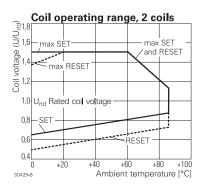
Coil	Rated	Set	Reset	Coil	Rated coil
code	voltage	voltage	voltage	resistance	power
	VDC	VDC	VDC	Ω±10%	mW
bistable	, 1 coil				
A03	3	2.1	1.7	21.4	429
A05	5	3.5	2.8	62	403
A06	6	4.2	3.3	90	400
A12	12	8.4	6.6	360	400
A24	24	16.8	13.2	1440	400
bistable	, 2 coils				
F03	3	2.1	1.7	15	600
F05	5	3.5	2.8	42	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
1 24	24	10.0	10.2	000	000

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

Bistable coils - operation

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





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

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

www.te.com/	<u>/customersupport/rohssupportcenter</u>
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-in ²⁾
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.
6) 1 1 1 1 1 6 1 11 1 1	

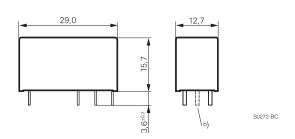
2) socket available for 1 coil version only, see Accessories

Accessories

For details see datasheet <u>Accessories Industrial Power Relay RT²⁾</u> 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





Power PCB Relay RT1 Inrush (Continued)

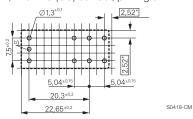
S0163-BE

S0163-BF

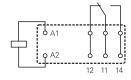
PCB layout / terminal assignment

Bottom view on solder pins

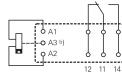
16A, 1 form C (CO) contact, pinning 5mm



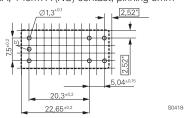
monostable version



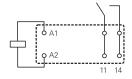
bistable version a)

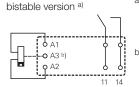


16A, 1 form A (NO) contact, pinning 5mm



monostable version



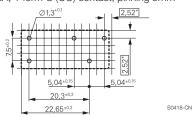


a) Indicated contact position during or after coil energization with reset voltage.

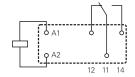
b) for 2 coil version only

S0163DPS

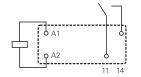
12A, 1 form C (CO) contact, pinning 5mm



monostable version, 1 form C (CO)



monostable version, 1 form A (NO)



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

Product code structure

Typical product code

3 **RT**

3

012

L

Type

Power PCB Relay RT1 Inrush

Version

16A, pinning 5mm, flux proof Ď 16A, pinning 5mm, sealed

Contact configuration

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

Contact material

- AgNi 90/10 AgSnO₂ K L

Coil

Coil code: please refer to coil versions table

Version

Standard version **Blank**

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,	1 form C (CO)	AgSnO ₂	Monostable	3VDC	Standard	7-1415547-5
RT31L006	pinning 5mm	contact			6VDC		7-1393239-2
RT31L012	flux proof				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				D: 1 1 1 0 "	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)	AgNi 90/10	Monostable	12VDC		2-1393240-3
RT33K024		contact			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				DISTABLE 2 COIIS	12VDC		2-1393240-8
RT33LF24							
	404	1 (0 (00)		N4	24VDC		2-1393240-9
RTD1L005	16A,	1 form C (CO)		Monostable	5VDC		1-1415537-7
RTD1L012	pinning 5mm	contact			12VDC		5-1393238-6
RTD1L024	wash tight				24VDC		8-1415398-1
RTD1LA05				Bistable 1 coil	5VDC		6-1415544-4
RTD1LA24					24VDC		4-1415541-5
RTD3L012		1 form A (NO)		Monostable	12VDC		5-1415393-1
RTD3L024		contact			24VDC		4-1415538-9

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