

Power PCB Relay RT1

- 1 pole 12A/16A, 1 form C (CO) or 1 form A (NO) contact
- **■** DC or AC coil
- 5kV/10mm coil-contact, reinforced insulation
- Ambient temperature 85°C (DC coil)
- WG version: product in accordance to IEC 60335-1
- Reflow version: for THR (Through-Hole Reflow) soldering process

Typical applications

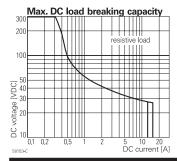
Boiler control, timers, garage door control, POS automation, interface modules

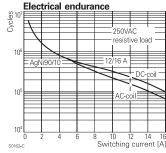


VDE Cert. No. 40007571, cULus E214025, cCSAus 1142018 CQC 20002275223 (China production), CQC 08001027262 (China production), CQC 18002197247 (monostable)

Technical data of approved types on request

Contact Data		1	2A	16A	1	
Contact arrangement	nt	1 for	m C (CO) (or 1 form A (NO)	
Rated voltage			250	VAC		
Max. switching volta	age	400VAC				
Rated current		-	12A	16A		
Limiting continuous		-	12A 16A, UL: 20A			
Limiting making cur						
max. 4s, duty fac	tor 10%	25A 30A				
Breaking capacity n	nax.		00VA	4000\		
Contact material			90/10, AgN	li 90/10 gol	d plated	
Frequency of opera	tion, with/wit	hout load				
DC coil				2000h ⁻¹		
AC coil			360/36	6000h ⁻¹		
Operate/release tim	,			Sms		
Bounce time max., DC coil, form A/form B				Sms		
Electrical endurance see electrical endurance graph ¹⁾					aph ¹⁾	
Contact ratings						
71	ntact L	oad			Cycles	
IEC 61810						
RT314 DC-coil A (I		6A, 250VAC			$30x10^3$	
,	,	6A, 250VAC			10x10 ³	
RT314 DC-coil A (I	NO) 1	0A, 400VAC	C , $\cos \varphi = 1$,	85°C	150x10 ³	
RT114 DC-coil A (I	NO) 1:	2A, 250VAC	C , $\cos \varphi = 1$,	85°C	$50x10^{3}$	
		2A, 250VAC	C , $\cos \varphi = 1$,	70°C	100x10 ³	
UL 61810-1 (former UL 508)						
RT314 A/E				urpose, 85°	C 6x10 ³	
RT334 A (I	NO) 1	6A, 250VAC	;, gen. purp	ose, 85°C	$50x10^{3}$	
RT314 A (I	NO) 1	hp, 240VAC	C, 40°C		1x10 ³	
	NO) FI	LA/LRA, 4.5	/13.1A, 480)VAC, 70°C	100x10 ³	
EN60947-4-1						
RT314 A (I	NO) 2:	50V/2A, AC	:-3		6.050	







E0144-C









Contact Data (continued)						
EN60947-5-1						
RT314 DC-coil	A/B (NO/NC)	2A, 24VDC, DC13	6.050			
RT314	A (NO)	250/3A, AC-15	6.050			
EN60730-1						
RT314 DC-coil	A (NO)	12(2)A, 250VAC, 85°C	100x10 ³			
 For reflow solderable versions: actual contact performance may be influenced by the reflow soldering process. 						
Mechanical endurance						
DC coil >30x10 ⁶ operations						
AC coil		>10x10 ⁶ operations				
AC coil, reflov	w version	>5x10 ⁶ operations				
		· · · · · · · · · · · · · · · · · · ·				

Coil Data	
Coil voltage range, DC coil/ AC coil	5 to 110VDC / 24 to 230VAC
Operative range, IEC 61810	2
Coil insulation system according UL	class F

Coil versions, DC coil

Coil	Rated	Operate	Release	Coil	Rated coil
code	voltage	voltage	voltage	resistance	power
	VDC	VDC	VDC	$\Omega \pm 10\%^{2)}$	mW
005	5	3.5	0.5	62	403
006	6	4.2	0.6	90	400
009	9	6.3	0.9	200	400
012	12	8.4	1.2	360	400
018	18	12.6	1.8	770	420
020	20	14.0	2.0	952	420
024	24	16.8	2.4	1440	400
048	48	33.6	4.8	5520	417
060	60	42.0	6.0	8570 ²⁾	420
110	110	77.0	11.0	28800 ²⁾	420
0) 0 !! !					

2) Coil resistance ±12%.

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

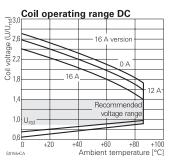
Coll vers	sions, AC co	II 50/60 HZ			
Coil	Rated	Operate	Release	Coil	Rated coil
code	voltage	voltage	voltage	resistance	power
	VAC	VAC	VAC	$\Omega \pm 15\%^{(3)}$	VA
524	24	18.0	3.6	350 ³⁾	0.76
548	48	36.0	7.2	1420	0.74
615	115	86.3	17.3	8100	0.76
620	120	90.0	18.0	8800	0.75
700	200	150.0	30.0	24350	0.76
730	230	172.5	34.5	32500	0.74

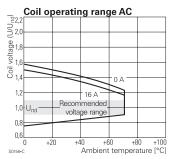
3) Coil resistance ±10%.

All figures are given for coil without pre-energization, at ambient temperature +23°C, 50 Hz. Other coil voltages on request.



Power PCB Relay RT1 (Continued)





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	Illa	
Tracking index of relay base	PTI 250V	
reflow version	PTI 175V	

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 or Reflow version according EN60335, par30

Ambient temperature

DC coil -40 to 85°C AC coil -40 to 70°C

Category of environmental protection, IEC 61810

RTII - flux proof, RTIII - wash tight standard version reflow version RTII - flux proof

Vibration resistance (functional)

form A/form B contact, 30 to 500Hz 20g/5g Shock resistance (destructive) 100g

Other Data (continued)

Terminal type standard version PCB-THT, plug-in reflow version PCB-THR Mounting distance AC coil: ≥2.5mm Weight 14g

Resistance to soldering heat THT, IEC 60068-2-20 270°C/10s RTII

260°C/5s

Resistance to soldering heat THR

reflow soldering (for reflow version) forced gas convection 4) or vapour phase $^{5)}$

according EN61730 temperature profile Packaging/unit tube/20 pcs., box/500 pcs

4) infrared heating not allowed

5) recommended fluid LS/230

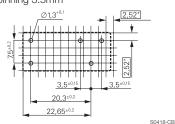
Accessories

For details see datasheet Accessories Industrial Power Relay RT 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.

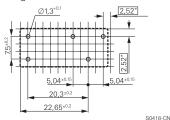
PCB layout / terminal assignment

Bottom view on solder pins

12A, pinning 3.5mm

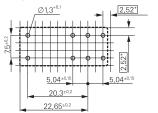


12A, pinning 5mm

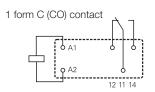


*) With the recommended PCB hole sizes a grid pattern from 2.5mm to 2.54mm can be used.

16A, pinning 5mm

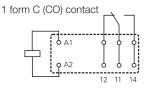


S0418-CA

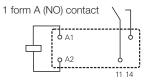


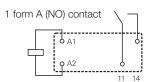
6 A1

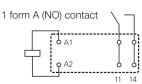
1 form C (CO) contact



S0163-BE







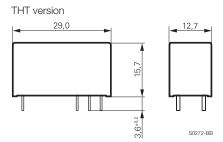
S0163-BG

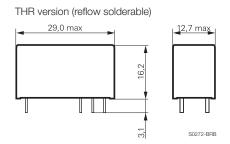
S0163-BC



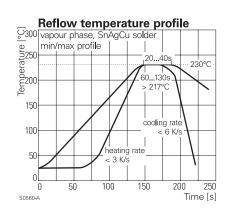
Power PCB Relay RT1 (Continued)

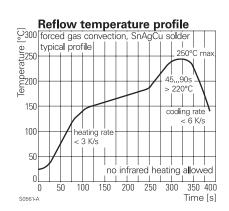
Dimensions





Process conditions for Reflow soldering according to EN61760-1





Product code structure Typical product code RT 3 4 024 Type RT Power PCB Relay RT1 Version 12A, pinning 3.5mm, flux proof 12A, pinning 5mm, flux proof 2 16A, pinning 5mm, flux proof 12A, pinning 3.5mm, wash tight (not for Reflow version) 12A, pinning 5mm, wash tight (not for Reflow version) 16A, pinning 5mm, wash tight (not for Reflow version) D **Contact arrangement** 1 1 form C (CO) contact 3 1 form A (NO) contact **Contact material** 4 AgNi 90/10 AgNi 90/10 gold plated (for type RT31.) Coil Coil code: please refer to coil versions table Version **Blank** Standard version Product in accordance with IEC 60335-1 (domestic appliances) WG

R

Reflow solderable



Power PCB Relay RT1 (Continued)

Product code	Version	Contacts Contact	Contact material	terial Coil	Version	Part Number	
Floudel code	Version	Contacts	Contact material	Con	Version	Austria	China
RT114009	12A,	1 form C (CO)	AgNi 90/10	9VDC	Standard	1393239-9	1-1649326-2
RT114012	pinning 3.5mm,	contact	O	12VDC		1419108-1	1-1649326-3
RT114012WG	flux proof			12VDC	IEC60335-1 compliant	7-1415538-6	
RT114024				24VDC	Standard	1-1393239-3	1-1649326-5
RT114024WG				24VDC	IEC60335-1 compliant	1415539-4	
RT114730				230VAC	Standard	1-1393239-9	
RT115024			AgNi 90/10 gold pl.	24VDC		2-1393239-1	3-1833000-9
RT134012		1 form A (NO)	AgNi 90/10	12VDC		2-1393239-6	3-1649326-1
RT134024	104	contact		24VDC		3-1393239-0	3-1649326-3
RT214012	12A,	1 form C (CO)		12VDC		5-1393239-4	1-1649327-3
RT214024	pinning 5mm,	contact		24VDC		5-1393239-5	1-1649327-5
RT214524	flux proof			24VAC		5-1393239-9	
RT214730	164			230VAC 5VDC		1419108-6	1 1640000 0
RT314005 RT314006	16A, pinning 5mm,			6VDC		9-1393239-1 9-1393239-3	1-1649328-0 1-1649328-1
RT314009	flux proof			9VDC		9-1393239-4	1-1049320-1
RT314012	liux proor			12VDC		9-1393239-5	1-1649328-3
RT314012R				12VDC	Reflow solderable	4-1415543-6	1 1043020 0
RT314012WG				12VDC	IEC60335-1 compliant	8-1415535-6	5-1833002-0
RT314018				18VDC	Standard	9-1393239-7	1-1649328-4
RT314024				24VDC	Otaridara	9-1393239-8	1-1649328-5
RT314024WG				24VDC	IEC60335-1 compliant	1415538-7	5-1833002-1
RT314048				48VDC	Standard	1393240-1	1-1649328-6
RT314060				60VDC		1-1649328-7	1-1649328-7
RT314110				110VDC		1393240-3	
RT314524				24VAC		1393240-4	
RT314548				48VAC		1393240-5	
RT314615				115VAC		1393240-6	
RT314730				230VAC		1393240-7	
RT314730WG				230VAC	IEC60335-1 compliant	4-1415538-0	
RT315024			AgNi 90/10 gold pl.	24VDC	Standard	1-1393240-4	3-1833002-7
RT334009WG		1 form A (NO)	AgNi 90/10	9VDC	IEC60335-1 compliant	3-1415538-1	
RT334012		contact		12VDC	Standard	4-1393240-5	3-1649328-1
RT334012WG				12VDC	IEC60335-1 compliant	1-1415527-1	5-1833002-2
RT334024				24VDC	Standard	4-1393240-8	3-1649328-3
RT334048				48VDC		5-1393240-0	3-1649328-4
RTB14005	12A,	1 form C (CO)		5VDC		1-1393238-2	1649326-1
RTB14012	pinning 3.5mm,	contact		12VDC		1-1393238-5	1649326-4
RTB14024	wash tight			24VDC 24VAC		1-1393238-9	1649326-6
RTB14524 RTB34012		1 form A (NO)		12VDC		2-1393238-4 3-1393238-0	2-1649326-2
RTC14024	12A, 5mm, wash			24VDC		5-1393238-0	1649327-6
		1 form C (CO)					
RTD14005	16A,	contact		5VDC		5-1393238-9	1649328-1 1649328-4
RTD14012 RTD14024	pinning 5mm, wash tight			12VDC 24VDC		6-1393238-2 6-1393238-8	1649328-4
RTD14024 RTD14048	wasii ligiil			48VDC		6-1393238-9	1649328-7
RT114048	12A, pinning 3.5mm,			48VDC		3 1000200 0	1-1649326-6
111111111111111111111111111111111111111	flux proof			70400			1 10-3020 0
RT214005	12A, pinning 5mm,			5VDC			1-1649327-0
RT234012	flux proof			12VDC			1-1649327-3
RT234024	12A, pinning 3.5mm,			24VDC	IEC 60335-1 compliant		1-1649327-5
RTB14048	wash tight			48VDC	standard		1649326-7
RTB34005	16A, pinning 5mm,			5VDC			1-1649326-9
RTD14060	wash tight			60VDC			1649328-8
RTD34012		1 form A (NO)		12VDC			2-1649328-2
RTD34024WG		contact		24VDC			3-1649328-7
RTD34015				15VDC			4-1833002-0
RTD34024				24VDC			2-1649328-4

This list represents the most common types and does not show all variants covered by this datasheet. Other types on request

Mouser Electronics

Authorized Distributor

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<u>TE Connectivity</u>: 6-1393239-1