

## **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



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



E0144-C









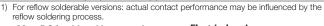


<b>Approvals</b>
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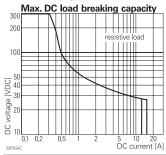
VDE Cert. No. 40007571, cULus E214025, cCSAus 1142018; CQC in preparation

Technical data of approved types on request

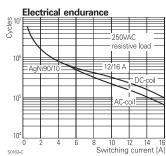
<b>Contact Dat</b>	а		12A	16A	1
Contact arrange	ement	1 foi	rm C (C	O) or 1 form A	(NO)
Rated voltage				250VAC	
Max. switching	voltage			400VAC	
Rated current			12A	16A	
Limiting continu		12A	16A, UL:	20A	
Limiting making	current				
max. 4s, duty			25A	30A	
Breaking capac			AV000	4000\	
Contact materia	••		90/10,	AgNi 90/10 gol	d plated
Frequency of op	oeration, with/v	vithout load			
DC coil				0/72000h <sup>-1</sup>	
AC coil 360/36000h <sup>-1</sup>					
Operate/release time max., DC coil 8/6ms					
Bounce time max., DC coil, form A/form B 4/6ms					
Electrical endurance see electrical endurance graph <sup>1)</sup>					
Contact rating					
Type	Contact	Load			Cycles
IEC 61810					
RT314 DC-coil	A (NO)	16A, 250VA	, ,	,	30x10 <sup>3</sup>
RT314 DC-coil	C (CO)	16A, 250VA			10x10 <sup>3</sup>
RT314 DC-coil	A (NO)	10A, 400VA			150x10 <sup>3</sup>
RT114 DC-coil	A (NO)	12A, 250VA	, ,	,	50x10 <sup>3</sup>
RT114 AC-coil	A (NO)	12A, 250VA	C, cosq	=1, 70°C	100x10 <sup>3</sup>
UL 508					
RT314	A/B (NO/NC)	,		ral purpose, 85°	
RT334	A (NO)			purpose, 85°C	50x10 <sup>3</sup>
RT314	A (NO)	1hp, 240VA			1x10 <sup>3</sup>
RT314	A (NO)	FLA/LRA, 4.5	5/13.1A	, 480VAC, 70°C	100x10 <sup>3</sup>
EN60947-5-1					
RT314 DC-coil	A/B (NO/NC)	2A, 24VDC,	DC13		6.050
EN60730-1					



12(2)A, 250VAC, 85°C



RT314 DC-coil A (NO)



Contact Data (continued)	
Mechanical endurance	
DC coil	>30x10 <sup>6</sup> operations
AC coil	>10x10 <sup>6</sup> operations
AC coil, reflow version	>5x10 <sup>6</sup> 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 coi	Coil	versions,	DC	coi
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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
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 <sup>2)</sup>	420
110	110	77.0	11.0	28800 <sup>2)</sup>	420

2) Coil resistance ±12%.

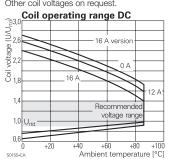
All figures are given for coil without pre-energization, at ambient temperature +23°C. Other coil voltages on request.

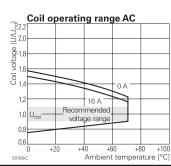
#### Coil versions, AC coil 50/60 Hz

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 <sup>3)</sup>	0.76
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.





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Datasheets and product specification according to IEC 61810-1 and to be used only together with the 'Definitions' section.

Datasheets and product data is subject to the terms of the disclaimer and all chapters of the 'Definitions' section, available at http://relays.te.com/definitions

Datasheets, product data, 'Definitions' section, application notes and all specifications are subject to change.



### Power PCB Relay RT1 (Continued)

Insulation Data	
Initial dielectric strength	
between open contacts	$1000V_{rms}$
between contact and coil	5000V <sub>rms</sub>
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

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

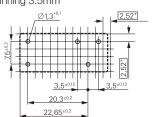
For details see datasheet Accessories Industrial Power Relay RT NOTE: indicated contact ratings and electrical endurance data for direct wiring of relays (according IEC 61810-1); for relays mounted on sockets deratings may apply.

#### PCB layout / terminal assignment

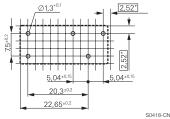
Bottom view on solder pins

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

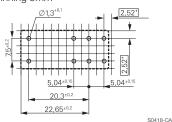




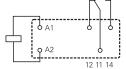
12A, pinning 5mm



16A, pinning 5mm



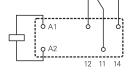
1 form C (CO) contact



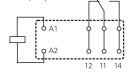
1 form C (CO) contact

S0418-CR

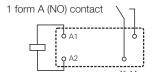
S0163-BG



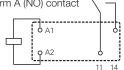
1 form C (CO) contact



S0163-BE



1 form A (NO) contact



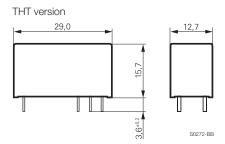
1 form A (NO) contact [ ] A1 9 A2

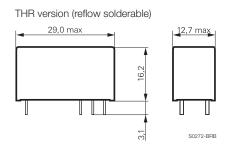
S0163-BC



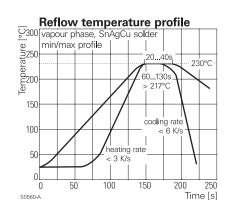
## Power PCB Relay RT1 (Continued)

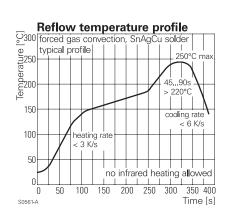
#### **Dimensions**





**Process conditions for Reflow soldering** according to EN61760-1





Product	code structure	Typical product code	RT	3	1	4	024
Туре							
R1	Power PCB Relay RT1						
Version							
1	12A, pinning 3.5mm, flux proof						
2	12A, pinning 5mm, flux proof *)						
3	16A, pinning 5mm, flux proof						
В	12A, pinning 3.5mm, wash tight						
D	16A, pinning 5mm, wash tight						
Contact a	arrangement						
1	1 form C (CO) contact						
3	1 form A (NO) contact						
Contact r	material						
4	AgNi 90/10						
5	AgNi 90/10 gold plated (for type RT31.)						
Coil							<b>'</b>
Co	oil code: please refer to coil versions table						
Version	· · · · · · · · · · · · · · · · · · ·						
BI	ank Standard version						
W	<b>G</b> Product in accordance with IEC 60335-1 (domestic appliances)						
	, , , , , , , , , , , , , , , , , , , ,						

R Reflow solderable

\*) Wash tight version on request



## Power PCB Relay RT1 (Continued)

Product code	Version	Contacts	Contact material	Coil	Version	Part number
RT114009	12A, pinning 3.5mm,	1 form C (CO)	AgNi 90/10	9VDC	Standard	1393239-9
RT114012	flux proof	contact		12VDC		1419108-1
RT114012WG					IEC60335-1 compliant	7-1415538-6
RT114024				24VDC	Standard	1-1393239-3
RT114024WG					IEC60335-1 compliant	1415539-4
RT114730				230VAC	Standard	1-1393239-9
RT115024			AgNi 90/10 gold pl.	24VDC		2-1393239-1
RT134012		1 form A (NO)	AgNi 90/10	12VDC		2-1393239-6
RT134024		contact		24VDC		3-1393239-0
RT214012	12A, pinning 5mm,	1 form C (CO)		12VDC		5-1393239-4
RT214024	flux proof	contact		24VDC		5-1393239-5
RT214524				24VAC		5-1393239-9
RT214730				230VAC		1419108-6
RT314005	16A, pinning 5mm,			5VDC		9-1393239-1
RT314006	flux proof			6VDC		9-1393239-3
RT314012				12VDC		9-1393239-5
RT314012WG				-	IEC60335-1 compliant	8-1415535-6
RT314024				24VDC	Standard	9-1393239-8
RT314024WG				-	IEC60335-1 compliant	1415538-7
RT314048				48VDC	Standard	1393240-1
RT314730				230VAC		1393240-7
RT315024			AgNi 90/10 gold pl.	24VDC		1-1393240-4
RT334009WG		1 form A (NO)	AgNi 90/10	9VDC	IEC60335-1 compliant	3-1415538-1
RT334012		contact		12VDC	Standard	4-1393240-5
RT334012WG					IEC60335-1 compliant	1-1415527-1
RT334024				24VDC	Standard	4-1393240-8
RT334048				48VDC		5-1393240-0
RTB14005	12A, pinning 3.5mm,	1 form C (CO)		5VDC		1-1393238-2
RTB14012	wash tight	contact		12VDC		1-1393238-5
RTB14024				24VDC		1-1393238-9
RTB14524				24VAC		2-1393238-4
RTD14005	16A, pinning 5mm,			5VDC		5-1393238-9
RTD14012	wash tight			12VDC		6-1393238-2
RTD14024				24VDC		6-1393238-8
RTD14048				48VAC		6-1393238-9
RTD34012		1 form A (NO)		12VDC		3-1419108-5
RTD34024		contact		24VDC		3-1419108-8

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

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TE Connectivity: 1-1393239-7 RT114524