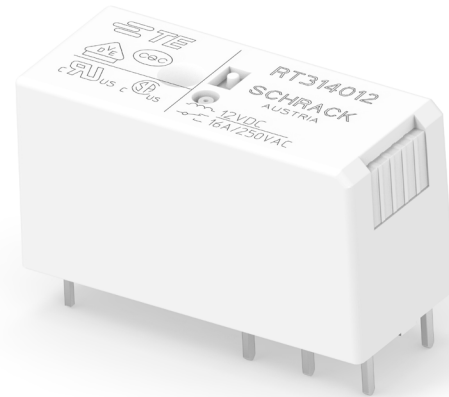


POWER PCB RELAY RT1

GENERAL PURPOSE RELAYS
PCB RELAYS

FEATURES

- 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)
- Product in accordance to IEC 60335-1
- Reflow version: for THR (Through-Hole Reflow) soldering process



APPLICATIONS

- Boiler control
- Timers
- Garage door control
- POS automation
- Interface modules

APPROVALS

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

Note: Technical data of approved types on request



POWER PCB RELAY RT1

GENERAL PURPOSE RELAYS PCB RELAYS

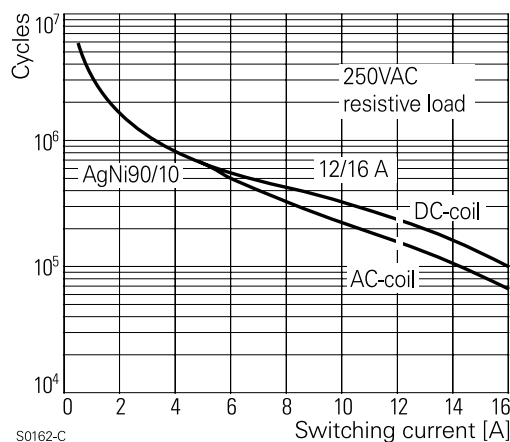
CONTACT DATA

	12A	16A
Contact arrangement	1 form C (CO) or 1 form A (NO)	
Rated voltage	250VAC	
Max. switching voltage	400VAC	
Rated voltage/ max. switching voltage AC	240/240VAC	
Rated current	12A	16A
Limiting continous current	12A	16A, UL: 20A
Limiting making current max. 4s, duty factor 10%	25A	30A
Breaking capacity max.	3000VA	4000VA
Contact material	AgNi 90/10, AgNi 90/10 gold plated	
Frequency of operation, with/without load		
DC coil	360/72000h ⁻¹	
AC coil	360/36000h ⁻¹	
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 ¹⁾	

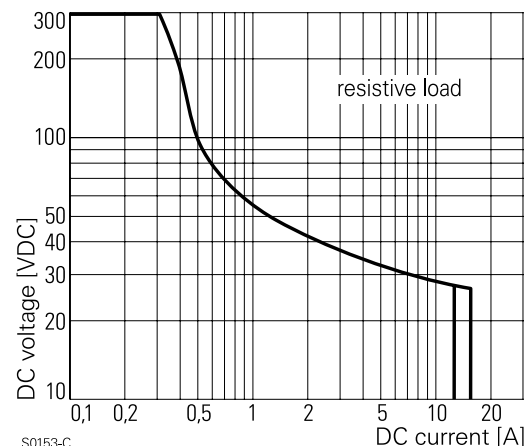
CONTACT RATINGS

Type	Contact	Load	Cycles
IEC 61810			
RT314 DC-coil	A (NO)	16A, 250VAC, cosφ=1, 85°C	30x10 ³
RT314 DC-coil	C (CO)	16A, 250VAC, cosφ=1, 85°C	10x10 ³
RT314 DC-coil	A (NO)	10A, 400VAC, cosφ=1, 85°C	150x10 ³
RT114 DC-coil	A (NO)	12A, 250VAC, cosφ=1, 85°C	50x10 ³
RT114 AC-coil	A (NO)	12A, 250VAC, cosφ=1, 70°C	100x10 ³
UL 61810-1 (former UL 508)			
RT314	A/B (NO/NC)	20A, 250VAC, general purpose, 85°C	6x10 ³
RT334	A (NO)	16A, 250VAC, gen. purpose, 85°C	50x10 ³
RT314	A (NO)	1hp, 240VAC, 40°C	1x10 ³
RT314	A (NO)	FLA/LRA, 4.5/13.1A, 480VAC, 70°C	100x10 ³
EN60947-4-1			
RT314	A (NO)	250V/2A, AC-3	6.050
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
1) 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, reflow version	>5x10 ⁶ operations		

ELECTRICAL ENDURANCE



MAX. DC LOAD BREAKING CAPACITY



POWER PCB RELAY RT1

GENERAL PURPOSE RELAYS PCB RELAYS

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

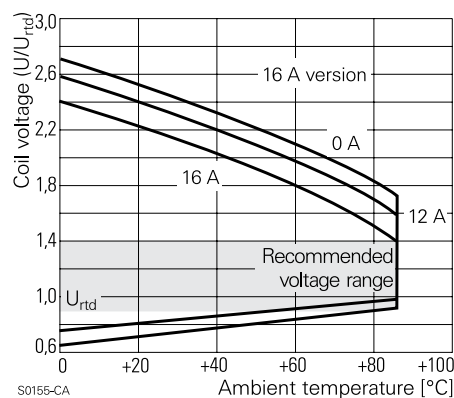
COIL VERSIONS, DC COIL

Coil code	Rated voltage VDC	Operate voltage 50 Hz VDC	Release voltage VDC	Coil resistance $\Omega \pm 10\%$	Rated coil power 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

2) Coil resistance $\pm 12\%$.

All figures are given for coil without pre-energization, at ambient temperature $+23^\circ\text{C}$. Other coil voltages on request.

COIL OPERATING RANGE DC



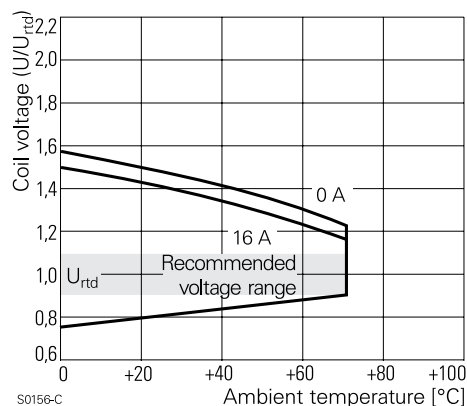
COIL VERSIONS, AC COIL 50/60Hz

Coil code	Rated voltage VAC	Operate voltage 50 Hz VAC	Release voltage 50 Hz VAC	Coil resistance Ω	Rated coil power 50 Hz 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 $\pm 10\%$.

All figures are given for coil without Other coil voltages on request.

COIL OPERATING RANGE AC



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
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/customer-support/rohssupportcenter
Resistance to heat and fire	according EN60335, par30
Ambient temperature range	
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
Terminal type	
standard version	PCB-THT, plug-in
reflow version	PCB-THR

Mounting distance	AC coil: ≥2.5mm
Weight	14g
Packaging unit	10 pcs
Resistance to soldering heat THT, IEC 60068-2-20	
RTII	270°C/10s
RTIII	260°C/5s
Resistance to soldering heat THR	
reflow soldering (for reflow version)	forced gas convection ⁴⁾ or vapour phase ⁵⁾
temperature profile	according EN61730
Packaging/unit	tube/20 pcs., box/500 pcs.

4) infrared heating not allowed
5) recommended fluid LS/230

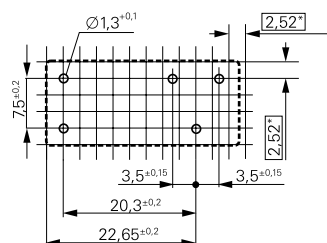
ACCESSORIES

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.	

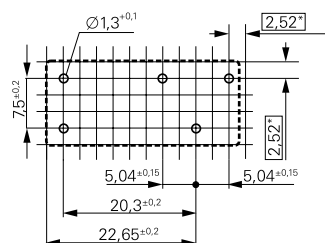
PCB LAYOUT / TERMINAL ASSIGNMENT

BOTTOM VIEW ON SOLDER PINS

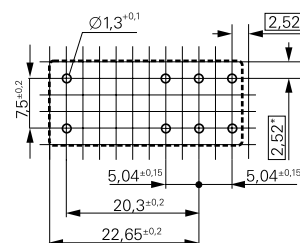
12A, pinning 3.5mm



12A, pinning 5mm

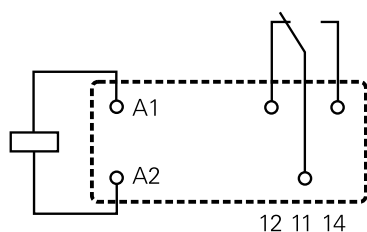


16A, pinning 5mm

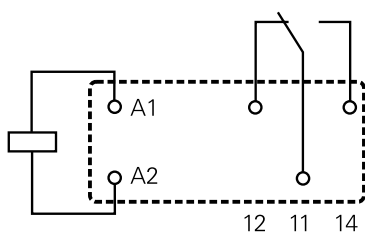


*) With the recommended PCB hole sizes a grid pattern from 2.5mm to 2.54mm can be used.

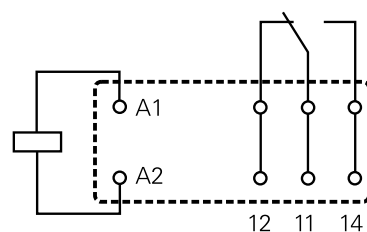
1 form C (CO) contact



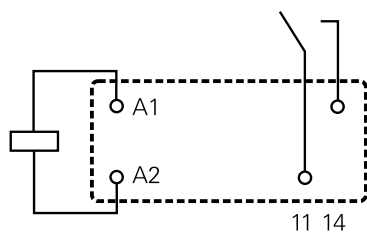
1 form C (CO) contact



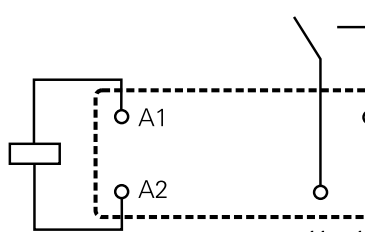
1 form C (CO) contact



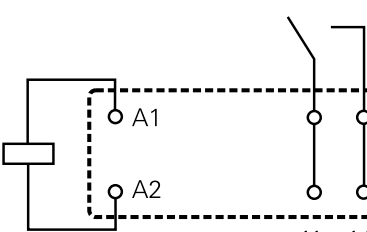
1 form A (NO) contact



1 form A (NO) contact

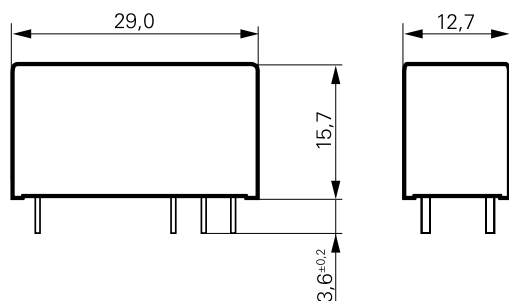


1 form A (NO) contact

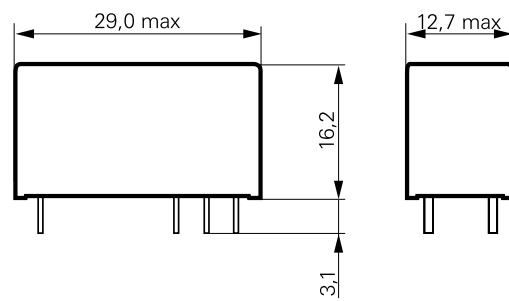


DIMENSIONS UNITS(mm)

THT version



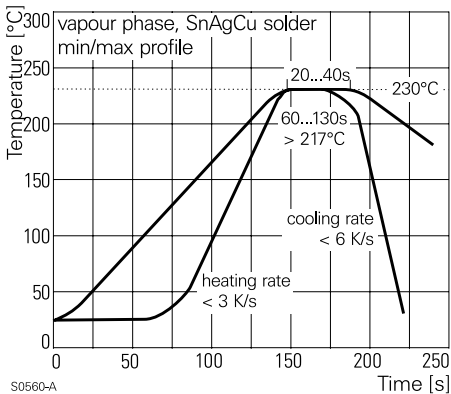
THR version (reflow solderable)



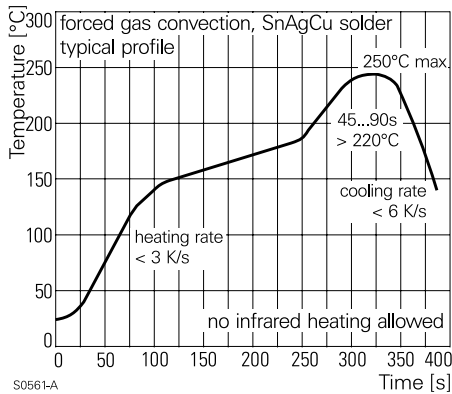
PROCESS CONDITIONS FOR REFLOW SOLDERING

according to EN61760-1

REFLOW TEMPERATURE PROFILE



REFLOW TEMPERATURE PROFILE



PRODUCT CODE STRUCTURE

Typical product code
RT 3 1 024

Type

RT	Power PCB Relay RT1
----	---------------------

Version

1	12A, pinning 3.5mm, flux proof
2	12A, pinning 5mm, flux proof
3	16A, pinning 5mm, flux proof
B	12A, pinning 3.5mm, wash tight (not for Reflow version)
C	12A, pinning 5mm, wash tight (not for Reflow version)
D	16A, pinning 5mm, wash tight (not for Reflow version)

Contact material

1	AgNi 90/10
3	AgNi 90/10 gold plated (for type RT31.)

Coil

Coil code	please refer to coil versions table
-----------	-------------------------------------

Version

Blank	Standard version
R	Reflow solderable

POWER PCB RELAY RT1

GENERAL PURPOSE RELAYS PCB RELAYS

PRODUCT INFORMATION

Product code	Version	Contacts	Contact material	Coll	Version	Part Number	
						Austria	China
RT114009	12A, pinning 3.5mm, flux proof	1 form C (CO) contact	AgNi 90/10	9VDC	Standard	1393239-9	1-1649326-2
RT114012				12VDC		1419108-1	1-1649326-3
RT114024				24VDC		1-1393239-3	1-1649326-5
RT114048				48VDC		1-1393239-4	1-1649326-6
RT114110				110VDC		1-1393239-6	-
RT114730				230VAC		1-1393239-9	-
RT115024		1 form A (NO) contact	AgNi 90/10 gold pl.	24VDC		2-1393239-1	3-1833000-9
RT134012			AgNi 90/10	12VDC		2-1393239-6	3-1649326-1
RT134024				24VDC		3-1393239-0	3-1649326-3
RT134048				48VDC		3-1393239-1	3-1649326-4
RT134110	110VDC			3-1393239-2		-	
RT214012	12A, pinning 5mm, flux proof	12VDC		5-1393239-4		1-1649327-3	
RT214024		24VDC	5-1393239-5	1-1649327-5			
RT214524		24VAC	5-1393239-9	-			
RT214730		230VAC	1419108-6	-			
RT314005	16A, pinning 5mm, flux proof	1 form C (CO) contact	AgNi 90/10	5VDC		9-1393239-1	1-1649328-0
RT314006				6VDC		9-1393239-3	1-1649328-1
RT314009				9VDC		9-1393239-4	-
RT314012				12VDC		9-1393239-5	1-1649328-3
RT314012R				12VDC	Reflow solderable	4-1415543-6	-
RT314018				Standard	18VDC	9-1393239-7	1-1649328-4
RT314024					24VDC	9-1393239-8	1-1649328-5
RT314048					48VDC	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	-	
RT315024		1 form A (NO) contact	AgNi 90/10 gold pl	24VDC	1-1393240-4	3-1833002-7	
RT334012			AgNi 90/10	12VDC	4-1393240-5	3-1649328-1	
RT334024				24VDC	4-1393240-8	3-1649328-3	
RT334048				48VDC	5-1393240-0	3-1649328-4	

PRODUCT INFORMATION

Product code	Version	Contacts	Contact material	Coil	Version	Part Number		
						Austria	China	
RTB14005	12A, pinning 3.5mm, wash tight	1 form C (CO) contact	AgNi 90/10	5VDC	Standard	1-1393238-2	1649326-1	
RTB14012				12VDC		1-1393238-5	1649326-4	
RTB14024				24VDC		1-1393238-9	1649326-6	
RTB14524				24VAC		2-1393238-4	-	
RTB34012		1 form A (NO)		12VDC		3-1393238-0	2-1649326-2	
RTC14024	12A, 5mm, wash tight	1 form C (CO) contact		24VDC		5-1393238-0	1649327-6	
RTD14005	16A, pinning 5mm, wash tight			5VDC		5-1393238-9	1649328-1	
RTD14012				12VDC		6-1393238-2	1649328-4	
RTD14024				24VDC		6-1393238-8	1649328-6	
RTD14048				48VDC		6-1393238-9	1649328-7	
RT214005	12A, pinning 5mm, flux proof			5VDC		-	1-1649327-0	
RT234012	12A, pinning 3.5mm, wash tight			12VDC		-	1-1649327-3	
RT234024				24VDC		-	1-1649327-5	
RTB14048				48VDC		-	1649326-7	
RTB34005	16A, pinning 5mm, wash tight			1 form A (NO) contact		5VDC	-	1-1649326-9
RTD14060						60VDC	-	1649328-8
RTD34012		12VDC				-	2-1649328-2	
RTD34015		15VDC				-	4-1833002-0	
RTD34024		24VDC				-	2-1649328-4	

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