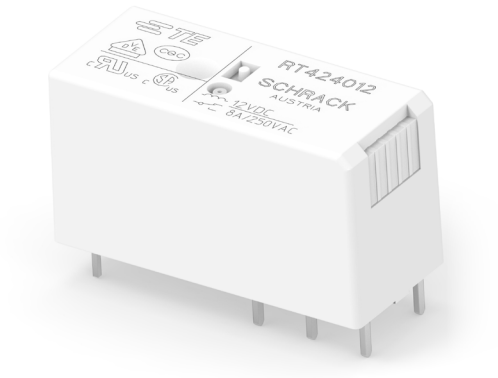
POWER PCB RELAY RT2 DC AND AC

GENERAL PURPOSE
LOW POWER PCB RELAYS

FEATURES

- 2 pole 8A, 2 form C (CO) or 2 form A (NO) contacts
- DC or AC coil
- 5kV/10mm coil-contact, reinforced insulation
- Ambient temperature up to 85°C
- Product in accordance to IEC60335-1
- 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
- UL E214025
- cCSAus 1142018
- CQC 18002197247 (monostable)
- CQC 20002275223 (China production)
- CQC 08001027262 (China production)

Technical data of approved types on request

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CONTACT DATA

Contact arrangement	2 form C (CO) or 2 form A (NO)
Rated voltage	250VAC
Max. switching voltage	400VAC
Rated current	8A, UL: 10A
Limiting continuous current	8A, UL: 10A
Limiting making current, max. 4s, duty factor 10%	15A
Breaking capacity max.	2000VA
Contact material	AgNi 90/10, AgNi 90/10 gold plated, $AgSnO_2$
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	4/10ms
Electrical endurance	see electrical endurance graph[1)]

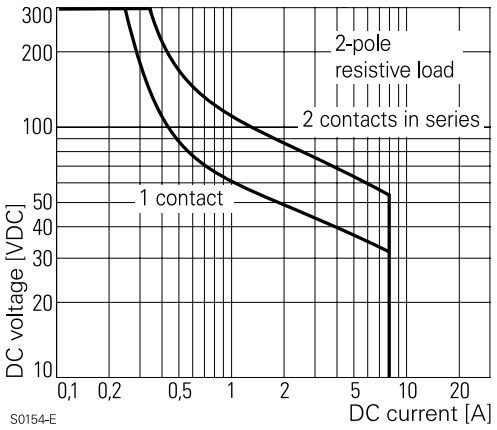
1) For reflow solderable versions: actual contact performance may be influenced by the reflow soldering process.

CONTACT RATINGS

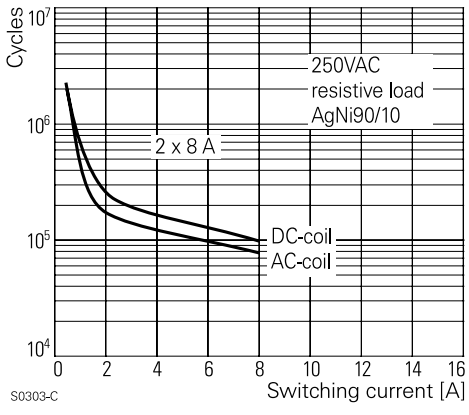
Type	Contact	Load	Cycles
IEC 61810			
RT424 DC coil	C (CO)	8A, 250VAC, cosφ=1, 85°C	10x10^3
RT444 AC coil	A (NO)	8A, 250VAC, cosφ=1, 70°C	50x10^3
RT424 AC coil	C (CO)	8A, 250VAC, cosφ=1, 70°C	30x10^3
UL 61810-1 (former UL 508)			
RT424 DC coil	A/B (NO/NC)	10A, 250VAC, gen. purpose, 85°C	20x10^3
RT424 DC coil	A/B (NO/NC)	1/2hp, 240VAC, 85°C	2x10^3
RT424 DC coil	A/B (NO/NC)	Pilot duty, B300, R300, 85°C	6x10^3
EN60947-5-1			
RTE24 DC coil	A/B (NO/NC)	AC15, 250VAC, 3A	6.050
RTE24 DC coil	A/B (NO/NC)	DC13, 24VDC, 2A	6.050
RTE24 DC coil	A/B (NO/NC)	DC13, 250VDC, 0.2A	6.050
EN60730-1			
RT424 DC coil	A/B (NO/NC)	6(2)A, 250VAC, 85°C	100x10^3

Mechanical endurance	
DC coil	>30x10^6 operations
DC coil, reflow version	>10x10^6 operations
AC coil	>5x10^6 operations
AC coil, reflow version	>2x10^6 operations

MAX. DC LOAD BREAKING CAPACITY



ELECTRICAL ENDURANCE



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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 VDC	Release voltage VDC	Coil resistance Ω±10%[2)]	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
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 ±12%. All figures are given for coil without pre-energization, at ambient temperature +23°C. Other coil voltages on request.

COIL VERSIONS, AC COIL, 50HZ

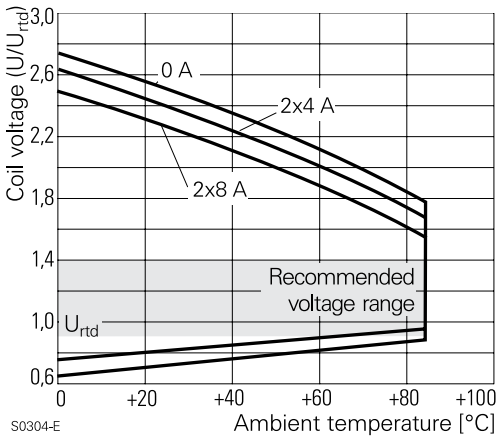
Coil code	Rated voltage VAC	Operate voltage VAC	Release voltage VAC	Coil resistance Ω±15%[3)]	Rated coil power VA
524	24	18.0	3.6	350 [3)]	0.76
615	115	86.3	17.3	8100	0.76
620	120	90.0	18.0	8800	0.75
700	200	150.0	30.0	24350	0.76
730	230	172.5	34.5	32500	0.74

3) Coil resistance ±10%. All figures are given for coil without pre-energization, at ambient temperature +23°C, 50Hz. Other coil voltages on request.

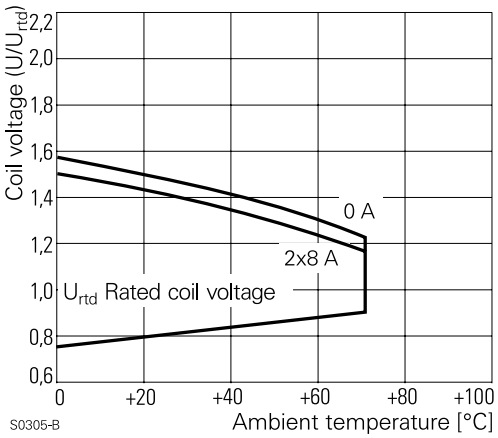
INSULATION DATA

Initial dielectric strength	
between open contacts	$1000V_{rms}$
between contact and coil	$5000V_{rms}$
between adjacent contacts	$2500V_{rms}$
Clearance/creepage	
between contact and coil	≥10/10mm
between adjacent contacts	≥3/4mm
Material group of insulation parts	IIIa
Tracking index of relay base	PTI 250V
Reflow version	PTI 175V

COIL OPERATING RANGE DC



COIL OPERATING RANGE AC



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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	according EN60335, par30
Ambient temperature range	
DC coil	-40 to 85°C
AC coil	-40 to 70°C
$AgSnO_2$ contacts	-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 300Hz	20g/5g
Shock resistance (destructive)	100g
Terminal type	PCB-THT, plug-in
reflow version	PCB-THR
Mounting distance, AC coil	≥2.5mm
Weight	13g
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/20pcs., box/500pcs.

4) infrared heating not allowed.

5) recommended fluid LS/230.

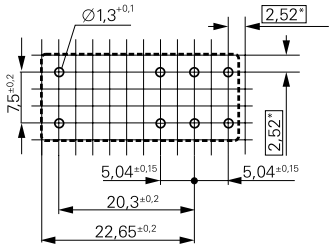
ACCESSORIES

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.

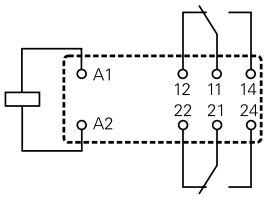
PCB LAYOUT / TERMINAL ASSIGNMENT

Bottom view on solder pins

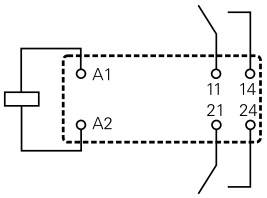


*) With the recommended PCB hole sizes a grid pattern from 2.5mm to 2.54mm can be used.

2 form C (CO) contacts

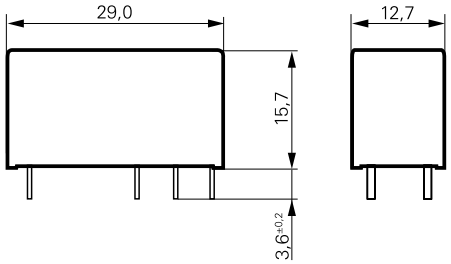


2 form A (NO) contacts

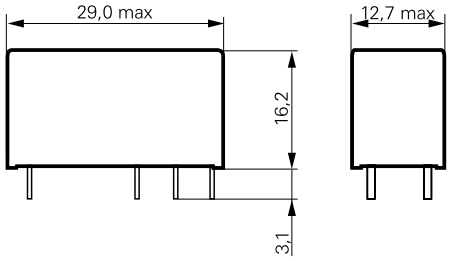


DIMENSIONS (Unit: mm)

THT VERSION



THR VERSION (REFLOW SOLDERABLE)



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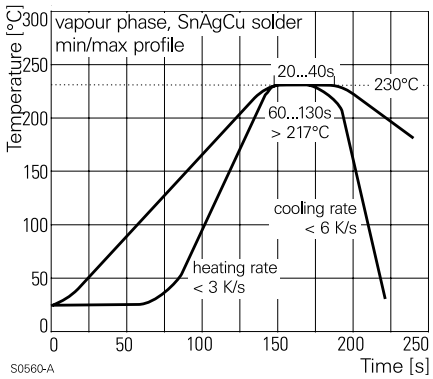
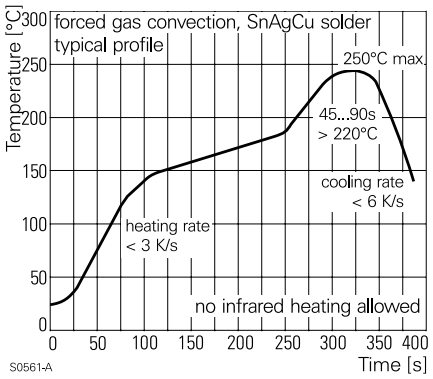
PROCESS CONDITIONS FOR REFLOW SOLDERING ACCORDING TO EN61760-1

REFLOW TEMPERATURE PROFILE





PRODUCT CODE STRUCTURE

Typical product code
RT 4 2 4 024

Type

RT	Power PCB Relay RT2

Version

4	8A, pinning 5mm, flux proof
E	8A, pinning 5mm, wash tight (not for Reflow version)

Contact arrangement

2	2 form C (CO) contacts
4	2 form A (NO) contacts

Version

Blank	Standard version
R	Reflow solderable

Coil

Coil code	please refer to coil versions table

Contact material

3	AgSnO
4	AgNi 90/10
5	AgNi 90/10 gold plated

PRODUCT INFORMATION

Product code	Version	Contacts	Contact material	Coil	Version	Part Number	
						Austria	China
RT423730	8A, pinning 5mm, flux proof	2 form C (CO) contacts	AgSnO	230VAC	Standard	4-1393243-3	-
RT424005			AgNi 90/10	5VDC		5-1393243-9	1-1649329-0
RT424006				6VDC		6-1393243-1	1-1649329-1
RT424009				9VDC		-	1-1649329-2
RT424012				12VDC		6-1393243-3	1-1649329-3
RT424024				24VDC		6-1393243-8	1-1649329-5
RT424048				48VDC		7-1393243-0	1-1649329-6
RT424060				60VDC		7-1393243-3	1-1649329-7
RT424110				110VDC		7-1393243-5	1-1649329-8
RT424524				24VAC		7-1393243-6	-
RT424615				115VAC		7-1393243-8	-
RT424730				230VAC		7-1393243-9	-

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PRODUCT INFORMATION

Product code	Version	Contacts	Contact material	Coil	Version	Part Number	
						Austria	China
RT425003			AgNi 90/10 gold plated	3VDC		7-1415525-1	-
RT425005				5VDC		8-1393243-0	4-1649329-6
RT425012				12VDC		8-1393243-2	4-1649329-9
RT425024				24VDC		8-1393243-5	5-1649329-1
RT444012		2 form A (NO) contacts	AgNi 90/10	12VDC		9-1393243-7	3-1649329-1
RT444024				24VDC		9-1393243-9	3-1649329-3
RTE23012	8A, pinning 5mm, wash tight	2 form C (CO) contacts	AgSnO	12VDC	Standard	3-1415536-3	7-1649329-7
RTE24005			AgNi 90/10	5VDC		1393243-1	1649329-1
RTE24006				6VDC		1393243-2	1649329-2
RTE24012				12VDC		1393243-4	1649329-4
RTE24024				24VDC		1-1393243-0	1649329-6
RTE24048				48VDC		1-1393243-1	1649329-7
RTE24060				60VDC		-	1649329-8
RTE24110				110VDC		1-1393243-4	1649329-9
RTE24524				24VAC		1-1393243-5	-
RTE24615				115VAC		1-1393243-7	-
RTE24730				230VAC		1-1393243-8	-
RTE25005			AgNi 90/10 gold plated	5VDC		1-1393243-9	3-1649329-7
RTE25012				12VDC		2-1393243-0	4-1649329-0
RTE25024				24VDC		2-1393243-1	4-1649329-2
RTE25524						2-1393243-4	-
RTE43009		2 form A (NO) contacts		9VDC		4-1415535-1	-
RTE44009			AgNi 90/10	9VDC		3-1393243-1	2-1649329-1
RTE44012				12VDC		-	2-1649329-2
RTE44024				24VDC		-	2-1649329-4
RTE44048				48VDC		-	2-1649329-5
RTE44730				230VAC		3-1393243-5	-

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

Notes:
1. Datasheets and product specification according to IEC 61810-1 and to be used only together with the 'Definitions' section.
2. 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.
3. Datasheets, product data, 'Definitions' section, application notes and all specifications are subject to change.

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