

SCHRACK

POWER PCB RELAY RT1 BISTABLE

GENERAL PURPOSE RELAYS
PCB RELAYS

INTRODUCTION

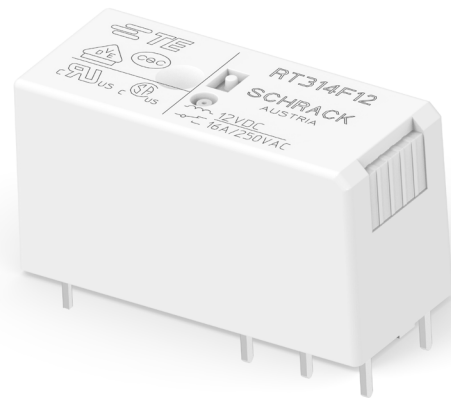
TE Connectivity (TE)'s SCHRACK RT1 Bistable Power PCB Relay series offers single-pole relays rated up to 16A for general-purpose industrial applications. These relays feature polarized bistable coil configurations (one or two coils), reinforced insulation with 5kV/10mm clearance, and comply with IEC 60335-1 for safety. They support switching voltages up to 400VAC and rated currents up to 16A, with a maximum making current of 30A and breaking capacity of 4000VA, ensuring robust performance.

FEATURES

- 1 pole 16A, 1 form C (CO) or 1 form A (NO) contact
- Polarized bistable version with 1 or 2 coils
- 5kV/10mm coil-contact
- Reinforced insulation
- Product in accordance to IEC 60335-1

APPLICATIONS

- Battery powered equipment
- Memory function



APPROVALS

- VDE Cert. No. 40007571
- UL E214025
- cCSAus 1142018
- CQC 18002197364



Technical data of approved types on request

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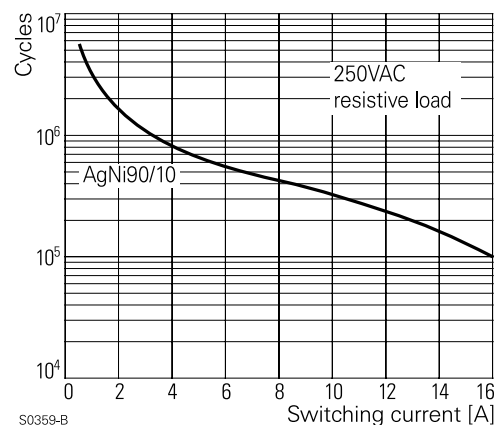
CONTACT DATA

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
Limiting making current, max 4s, duty factor 10%	30A
Breaking capacity max.	4000VA
Contact material	AgNi 90/10 AgNi 90/10 gold plated
Frequency of operation, with/without load	360/72000h ⁻¹
Operate/reset time max.	10/10ms
Bounce time max., form A/form B	3/6ms

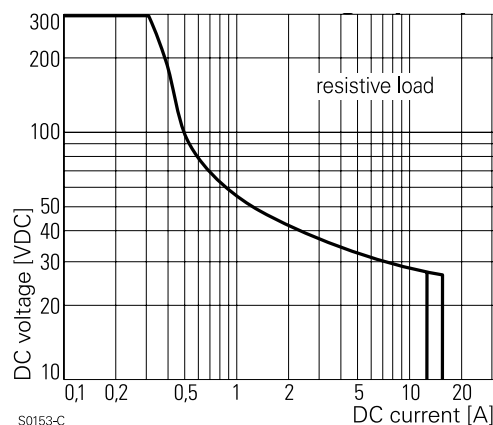
CONTACT RATINGS

Type	Contact	Load	Cycles
IEC 61810			
RT1*4	A (NO)	12A, 250VAC resistive, 85°C	30x10 ³
RT1*4	C (CO)	12A, 250VAC resistive, 85°C	10x10 ³
RT314	A (NO)	16A, 250VAC resistive, 85°C	30x10 ³
RT314	C (CO)	16A, 250VAC resistive, 85°C	10x10 ³
UL 61810-1 (former UL 508)			
RT1*4	A (NO)	12A, 250VAC, general purpose, 85°C	50x10 ³
RT**4	A (NO)	R300, 85°C	100x10 ³
RT314	A/B (NO/NC)	20A, 250VAC, general purpose, 85°C	6x10 ³
RT334	A (NO)	16A, 250VAC, general purpose, 85°C	50x10 ³
RT314	A (NO)	1hp, 240VAC, 40°C	1x10 ³
Mechanical endurance	>5x10 ⁶ operations		

ELECTRICAL ENDURANCE



MAX. DC LOAD BREAKING CAPACITY



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COIL DATA

Bistable coils	1 Coil	2 coils
Magnetic system	polarized, bistable	
Coil voltage range	3 to 36VDC	
Operative range, IEC 61810	2	
Limiting voltage, % of rated coil voltage	120%	150%
Min./Max. energization duration	30ms/1min at <10% duty factor	
Coil insulation system according UL1446	class F	

COIL VERSIONS, BISTABLE COIL

Coil code	Rated voltage VDC	Set voltage VDC	Reset voltage VDC	Coil resistance $\Omega \pm 10\%$	Rated coil power mW
bistable 1 coil					
A03	3	2.1	1.7	21	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
F09	9	6.3	5.0	135	600
F12	12	8.4	6.6	240	600
F24	24	16.8	13.2	886	650
F36	36	25.2	19.8	1994	650

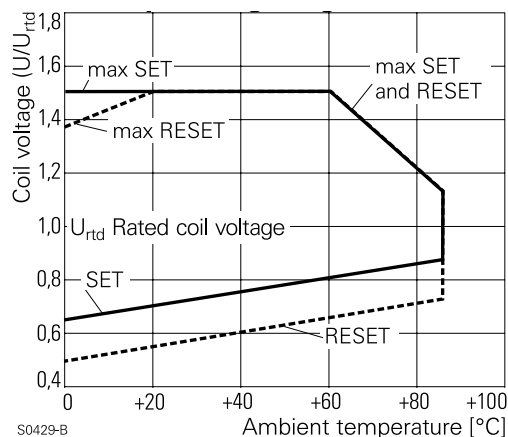
All figures are given for coil without pre-energization, at ambient temperature +23°C. Other coil voltages on request.

BISTABLE COILS - OPERATION

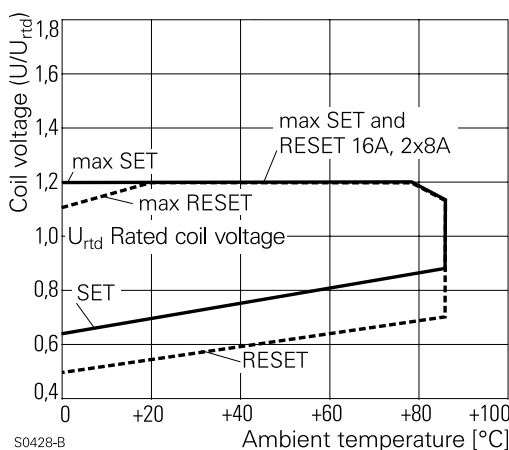
Version	1 coil		2 coils		
Coil terminals	A1	A2	A1	A3	A2
Operate	+	-		+	-
Rest	-	+	-	+	

Contacts are preferably in reset contact position leaving our production. During transportation and handling the position may change. Ensure reset position before any thermal processing (e.g. soldering).

COIL OPERATING RANGE, 2 COILS



COIL OPERATING RANGE, 1 COIL



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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/customer-support/rohssupportcenter	
Ambient temperature		
bistable 1 coil	-10 to 85°C	
bistable 2 coils	-40 to 85°C	
Category of environmental protection		
IEC 61810	RTII - flux proof, RTIII - wash tight	
Vibration/shock resistance (functional),		
opening B contact	3/5g	
opening closed A contact	6/15g	
Shock resistance (destructive)	100g	
Terminal type	PCB-THT, plug-in ¹⁾	
Weight	14g	
Resistance to soldering heat THT, IEC 60068-2-20		
RTII - flux proof	270°C/10s	
RTIII - wash tight	260°C/5s	
Packaging/unit	tube/20 pcs., box/500 pcs.	

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

ACCESSORIES

For 1 coil version, details see datasheet	Accessories Industrial Power Relay RT
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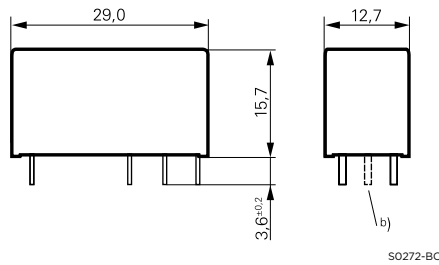
Note:

Indicated contact ratings and electrical endurance data for direct wiring of relays (according IEC 61810-1); for relays mounted on sockets deratings may apply.

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DIMENSIONS (Unit:mm)

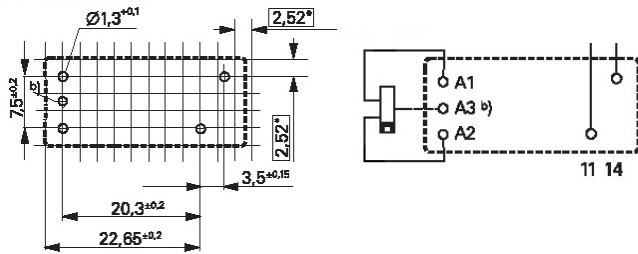


- a) Indicated contact position during or after coil energization with reset voltage.
b) for 2 coil version only

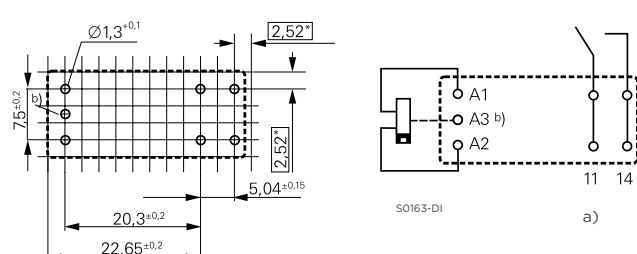
PCB LAYOUT / TERMINAL ASSIGNMENT

Bottom view on solder pins

12A, pinning 3,5mm, 1 form A (NO) contact



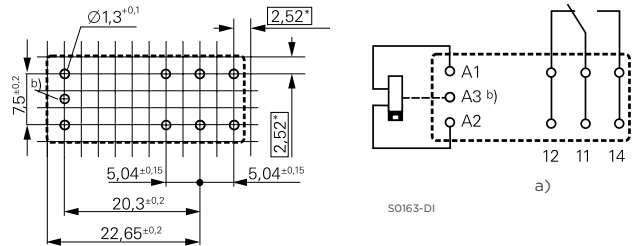
16A, pinning 5mm, 1 form A (NO) contact



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

- a) Indicated contact position during or after coil energization with reset voltage.
b) for 2 coil version only

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



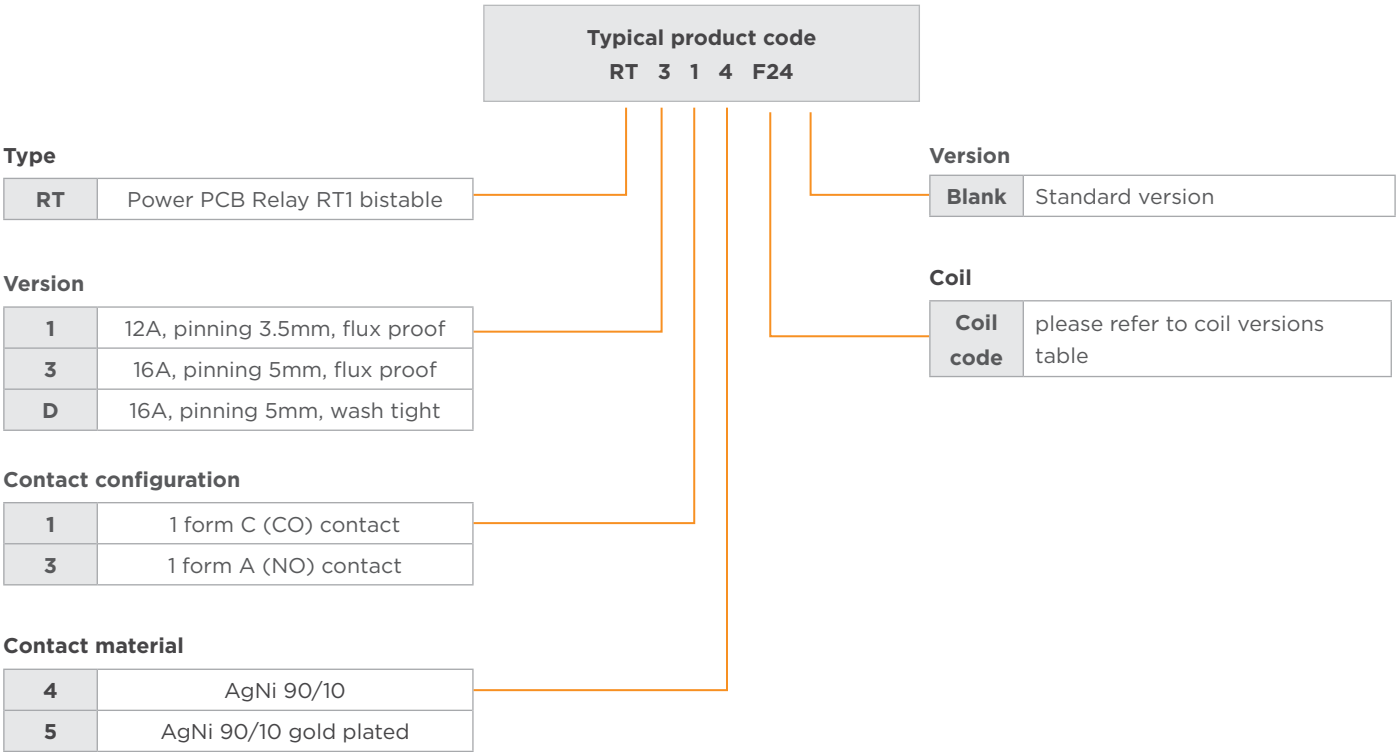
*) With the recommended PCB hole sizes a grid pattern from 2.5mm to 2.54mm can be used.

- a) Indicated contact position during or after coil energization with reset voltage.
b) for 2 coil version only

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PRODUCT CODE STRUCTURE



PRODUCT INFORMATION

Product code	Version	Contacts	Contact material	Coil Version	Coil	Part Number
RT314A03	16A, pinning 5mm, flux proofa	1 form C (CO) contact	AgNi 90/10	Bistable 1 coil	3VDC	7-1393239-7
RT314A05					5VDC	7-1393239-8
RT314A06					6VDC	7-1393239-9
RT314A12					12VDC	8-1393239-0
RT314F03				Bistable 2 coils	3VDC	8-1393239-4
RT314F05					5VDC	8-1393239-5
RT314F06					6VDC	8-1393239-6
RT314F09					9VDC	6-1415351-1
RT314F12					12VDC	8-1393239-7
RT314F24					24VDC	8-1393239-8
RT314F36					36VDC	8-1393239-9
RTD14F03	3VDC	5-1393238-7				
RTD14F12	12VDC	5-1393238-8				
RTD15F05	5VDC	1415538-8				
RT134F12	12A, pinning 3,5mm, flux proof	1 form A (NO) contact	AgNi 90/10		12VDC	1415544-5
RT134F24		1 form C (CO) contact			24VDC	4-1415382-1
RT114F12					12VDC	6-1415543-8
RT114F24					24VDC	5-1415400-1

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

Notes:

- 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.

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