chanhvinh.com

Power PCB Relay RT1 bistable

- **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**
- **WG version: product in accordance to IEC 60335-1**

Typical applications
Battery powered equipment or applications with “memory function”



F0176-C

Approvals

VDE Cert. No. 40007571, UL E214025, cCSAus 1142018
CQC 18002197364
Technical data of approved types on request

Contact Data

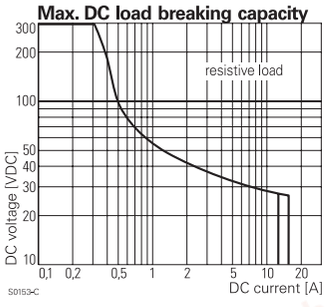
Contact arrangement	1 form C (CO) or 1 form A (NO)
Rated voltage	250VAC
Max. switching voltage	400VAC
Rated current	16A
Limiting continuous current	16A, UL: 20A
Limiting making current, max. 4s, duty factor 10%	30A
Breaking capacity max.	4000VA
Contact material	AgNi 90/10 AgNi 90/10 gold plated
Frequency 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

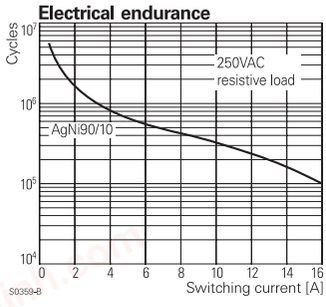
Type	Contact	Load	Cycles
IEC 61810			
RT1*4	A (NO)	12A, 250VAC resistive, 85°C	30x10^3
RT1*4	C (CO)	12A, 250VAC resistive, 85°C	10x10^3
RT314	A (NO)	16A, 250VAC resistive, 85°C	30x10^3
RT314	C (CO)	16A, 250VAC resistive, 85°C	10x10^3
UL 61810-1 (former UL 508)			
RT1*4	A (NO)	12A, 250VAC, general purpose, 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

Max. DC load breaking capacity



Electrical endurance



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

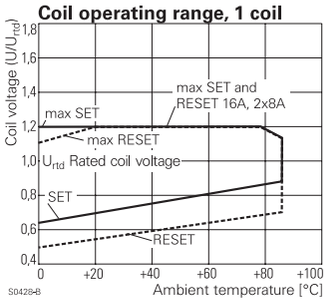
Coil code	Rated voltage VDC	Set voltage VDC	Reset voltage VDC	Coil resistance Ω±10%	Rated coil power mW
bistable 1 coil					
A03	3	2.1	1.7	21	429
A05	5	3.5	2.8	62	403
A06	6	4.2	3.3	90	400
A12	12	8.4	6.6	360	400
A24	24	16.8	13.2	1440	400
bistable 2 coils					
F03	3	2.1	1.7	15	600
F05	5	3.5	2.8	42	595
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.

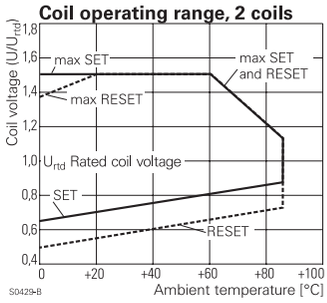
Bistable coils - operation

Version	1 coil		2 coils		
Coil terminals	A1	A2	A1	A3	A2
Operate	+	-		+	-
Reset	-	+	-	+	
Contact position not defined at delivery					

Coil operating range, 1 coil



Coil operating range, 2 coils



06-2022, Rev. 2
www.te.com
© 2014 Tyco Electronics Corporation,
a TE Connectivity Ltd. company

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.

chanhvinh.com

Power PCB Relay RT1 bistable (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	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/customersupport/rohssupportcenter
Ambient temperature	-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

Other Data (continued)

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.

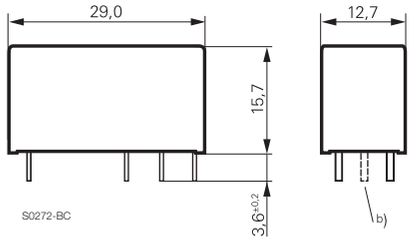
1) socket available for 1 coil version only, see Accessories.

Accessories

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

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.

Dimensions



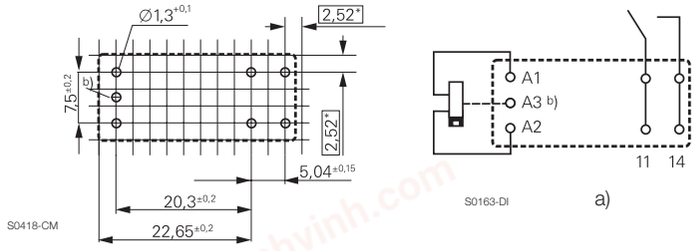
a) Indicated contact position during or after coil energization with reset voltage.

b) for 2 coil version only

PCB layout / terminal assignment

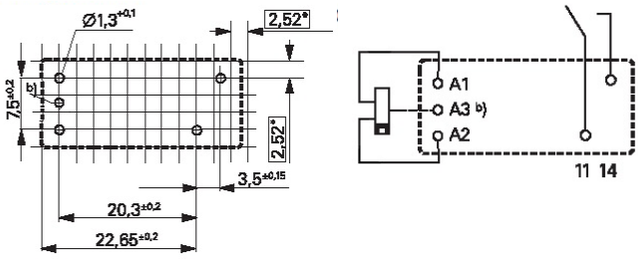
Bottom view on solder pins

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

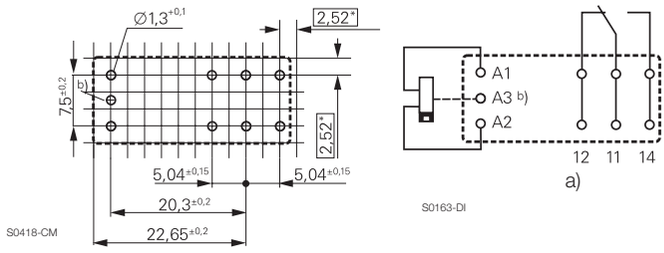


*) With the recommended PCB hole sizes a grid pattern from 2.5mm to 2.54mm can be used.

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



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.

06-2022, Rev. 2
www.te.com
© 2014 Tyco Electronics Corporation,
a TE Connectivity Ltd. company

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.

chanhvinh.com

Power PCB Relay RT1 bistable (Continued)

Product code structure — Typical product code: **RT 3 1 4 F24**

Type
RT Power PCB Relay RT1 bistable

Version
1 12A, pinning 3,5mm, flux proof
3 16A, pinning 5mm, flux proof
D 16A, pinning 5mm, wash tight

Contact configuration
1 1 form C (CO) contact
3 1 form A (NO) contact

Contact material
4 AgNi 90/10
5 AgNi 90/10 gold plated

Coil
Coil code: please refer to coil versions table

Version
Blank Standard version
WG Product in accordance with IEC 60335-1 (domestic appliances)

Product code	Version	Contacts	Contact material	Coil version	Coil	Part number
RT315A03WG	16A,	1 form C (CO)	AgNi 90/10 gold plated	Bistable 1 coil	3VDC	8-1415545-5
RT314A03	pinning 5mm,	contact	AgNi 90/10		3VDC	7-1393239-7
RT314A05	flux proof				5VDC	7-1393239-8
RT314A06					6VDC	7-1393239-9
RT314A12					12VDC	8-1393239-0
RT314A24WG					24VDC	1415539-5
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	16A,				3VDC	5-1393238-7
RTD14F12	pinning 5mm,				12VDC	5-1393238-8
RTD15F05	wash tight		AgNi 90/10 gold plated		5VDC	1415538-8
RT134F12	12A,	1 form A (NO)	AgNi 90/10		12VDC	1415544-5
RT134F24	pinning 3,5mm,	contact			24VDC	4-1415382-1
RT114F12	flux proof	1 form C (CO)			12VDC	6-1415543-8
RT114F24		contact			24VDC	5-1415400-1

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

06-2022, Rev. 2
www.te.com
© 2014 Tyco Electronics Corporation,
a TE Connectivity Ltd. company

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.