

Power PCB Relay RT1

- 1 pole 12/16 A, 1 CO or 1 NO contact
- DC- or AC-coil
- Sensitive coil 400 mW
- 5 kV / 10 mm coil-contact, reinforced insulation
- Ambient temperature 85°C (DC-coil)
- WG version: Product in accordance to IEC60335-1



F0144-C

Applications

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

Approvals

VDE REG.-Nr. 6106, cULus E214025, cSP® 14385, (REAB) C0786
 Technical data of approved types on request

Contact data

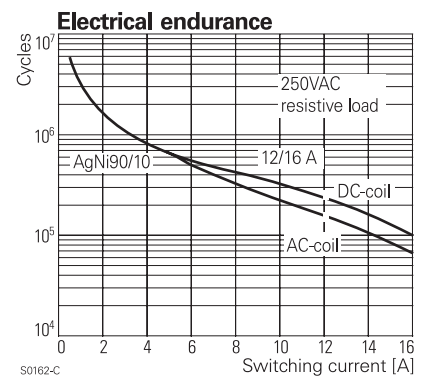
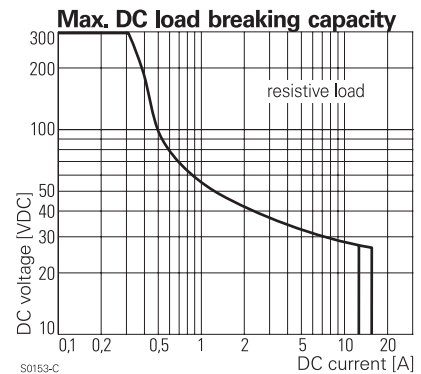
Contact configuration	1 CO or 1 NO contact	
Contact set	single contact	
Type of interruption	micro disconnection	
Rated voltage / max. switching voltage AC	250 / 400 VAC	
Rated current	12 A	16 A
Limiting continuous current	12 A	16 A, UL: 20 A
Maximum breaking capacity AC	3000 VA	4000 VA
Limiting making capacity, max 4 s, df 10%	25 A	30 A
Contact material	AgNi 90/10, AgNi 90/10 gold plated	
Rated frequency of operation with / without load	DC coil: 6 / 1200 min ⁻¹ AC coil: 6 / 600 min ⁻¹	
Operate- / release time DC coil	max 8 / 6 ms	
Bounce time DC coil, NO / NC contact	max 4 / 6 ms	

Contact ratings

Type	Contact	Load	Ambient temp. [°C]	Cycles
IEC 61810				
RT314 DC-coil	NO	16 A, 250 VAC, cosφ=1	85°C	30x10 ³
RT314 DC-coil	CO	16 A, 250 VAC, cosφ=1	85°C	10x10 ³
RT314 DC-coil	NO	10 A, 400 VAC, cosφ=1	85°C	150x10 ³
RT114 DC-coil	NO	12 A, 250 VAC, cosφ=1	85°C	50x10 ³
RT114 AC-coil	NO	12 A, 250 VAC, cosφ=1	70°C	100x10 ³
UL 508				
RT314	NO / NC	20 A, 250 VAC, general purpose	85°C	6x10 ³
RT334	NO	16 A, 250 VAC, general purpose	85°C	50x10 ³
RT314	NO	1 hp, 240 VAC	40°C	1x10 ³
EN60947-5-1				
RT314 DC-coil	NO / NC	2 A, 24 VDC DC13		6.050
EN60730-1				
RT314 DC-coil	NO	12(2) A, 250 VAC	85°C	100x10 ³

Coil data

Rated coil voltage range DC coil	5...110 VDC
AC coil	24...230 VAC
Operative range to IEC 61810	2
Coil insulation system according UL1446	class F



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Coil versions, DC-coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ohm	Rated coil power mW
005	5	3.5	0.5	62 ± 10%	403
006	6	4.2	0.6	90 ± 10%	400
009	9	6.3	0.9	200 ± 10%	400
012	12	8.4	1.2	360 ± 10%	400
024	24	16.8	2.4	1440 ± 10%	400
048	48	33.6	4.8	5520 ± 10%	417
060	60	42.0	6.0	8570 ± 12%	420
110	110	77.0	11.0	28800 ± 12%	420

All figures are given for coil without preenergization, at ambient temperature +23°C
Other coil voltages on request

Coil versions, AC-coil 50Hz

Coil code	Rated voltage VAC	Operate voltage 50 Hz VAC	Release voltage 50 Hz VAC	Coil resistance Ohm	Rated coil power 50 Hz VA
524	24	18.0	3.6	350 ± 10%	0.76
615	115	86.3	17.3	8100 ± 15%	0.76
620	120	90.0	18.0	8800 ± 15%	0.75
700	200	150.0	30.0	24350 ± 15%	0.76
730	230	172.5	34.5	32500 ± 15%	0.74

All figures are given for coil without preenergization, at ambient temperature +23°C

Insulation

Dielectric strength coil-contact circuit	5000 V _{rms}
open contact circuit	1000 V _{rms}
Clearance / creepage coil-contact circuit	≥ 10 / 10 mm
Material group of insulation parts	IIIa
Tracking index of relay base	PTI 250 V
Insulation to IEC 61810-1	
Type of insulation coil-contact circuit	reinforced
open contact circuit	micro disconnection
Rated insulation voltage	250 V
Pollution degree 12 A version	3
16 A version	3
Rated voltage system	240 V
Overvoltage category	230 / 400 V
	III

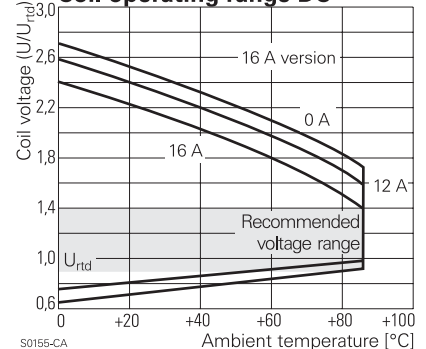
Other data

Mechanical endurance DC coil	> 30 x 10 ⁶ cycles
AC coil	> 10 x 10 ⁶ cycles
Material	
RoHS - Directive 2002/95/EC	compliant as per product date code 0413
Resistance to heat and fire, WG version	according EN60335-1, par.30
Environment	
Ambient temperature range DC coil	-40...+85°C
AC coil	-40...+70°C
Vibration resistance (function), NO / NC cont.	20 / 5 g, 30 ... 500 Hz
Shock resistance (destruction)	100 g
Category of protection	RTII - flux proof, RTIII - wash tight
Processing	
Mounting	pcb or on socket
Mounting position	any
Mounting distance DC / AC coils	≥ 0 / ≥ 2.5 mm
Resistance to soldering heat flux-proof version	270°C / 10 s
wash-tight version	260°C / 5 s
Relay weight	14 g
Packaging unit	20 / 500 pcs

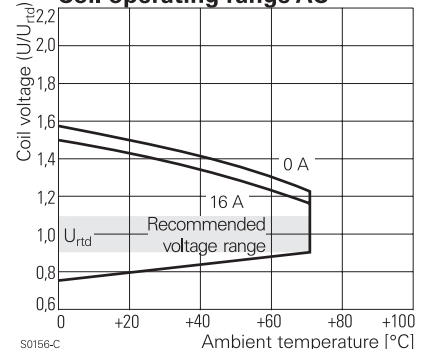
Accessories

For details see datasheet Accessories Power Relay RT

Coil operating range DC



Coil operating range AC



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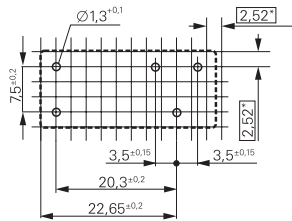
Dimensions



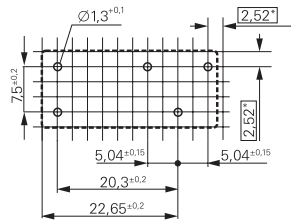
PCB layout / terminal assignment
Bottom view on solder pins

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

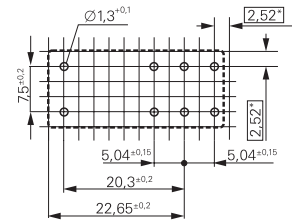
12 A, pinning 3.5 mm



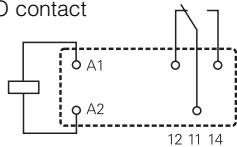
12 A, pinning 5 mm



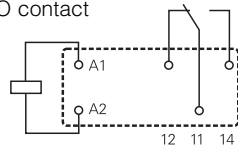
16 A, pinning 5 mm



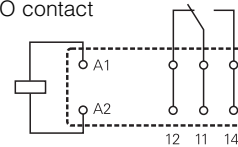
1 CO contact



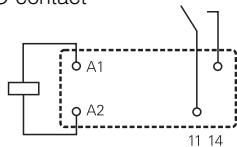
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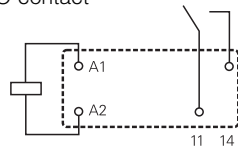
1 CO contact



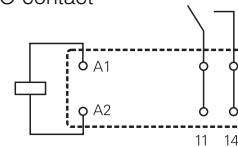
1 NO contact



1 NO contact



1 NO contact



Product key	Typical product key				RT	3	1	4	024												
Type	RT Power PCB Relay RT1																				
Version	<table border="0"> <tr> <td>1</td> <td>12 A, pinning 3.5 mm, flux proof</td> <td>B</td> <td>12 A, pinning 3.5 mm, wash tight</td> </tr> <tr> <td>2</td> <td>12 A, pinning 5 mm, flux proof *)</td> <td>D</td> <td>16 A, pinning 5 mm, wash tight</td> </tr> <tr> <td>3</td> <td>16 A, pinning 5 mm, flux proof</td> <td></td> <td></td> </tr> </table>									1	12 A, pinning 3.5 mm, flux proof	B	12 A, pinning 3.5 mm, wash tight	2	12 A, pinning 5 mm, flux proof *)	D	16 A, pinning 5 mm, wash tight	3	16 A, pinning 5 mm, flux proof		
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Contact material	<table border="0"> <tr> <td>4</td> <td>AgNi 90/10</td> <td>5</td> <td>AgNi 90/10 gold plated (for type RT31.)</td> </tr> </table>									4	AgNi 90/10	5	AgNi 90/10 gold plated (for type RT31.)								
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Coil	Coil code: please refer to coil versions table																				
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Preferred types in bold print
*) Wash tight version on request

Power PCB Relay RT1 (Continued)

Product key	Version	Contacts	Cont. material	Coil	Coil	Part number
RT114005	12 A	1 CO contact	AgNi 90/10	DC-coil	5 VDC	1393239-7
RT114006	pinning 3.5 mm flux proof				6 VDC	1393239-8
RT114012					12 VDC	1419108-1
RT114024					24 VDC	1-1393239-3
RT114048					48 VDC	1-1393239-4
RT114110					110 VDC	1-1393239-6
RT114524				AC-coil	24 VAC	1-1393239-7
RT114615					115 VAC	1-1393239-8
RT114730					230 VAC	1-1393239-9
RT134012		1 NO contact		DC-coil	12 VDC	2-1393239-6
RT134024					24 VDC	3-1393239-0
RT214012	12 A, pinning 5mm	1 CO contact			12 VDC	5-1393239-4
RT214024	flux proof				24 VDC	5-1393239-5
RT314005	16 A				5 VDC	9-1393239-1
RT314006	pinning 5 mm flux proof				6 VDC	9-1393239-3
RT314012					12 VDC	9-1393239-5
RT314024					24 VDC	9-1393239-8
RT314048					48 VDC	1393240-1
RT314060					60 VDC	1393240-2
RT314110					110 VDC	1393240-3
RT314524				AC-coil	24 VAC	1393240-4
RT314615					115 VAC	1393240-6
RT314730					230 VAC	1393240-7
RT315012			AgNi 90/10	DC-coil	12 VDC	1-1393240-1
RT315024			gold plated		24 VDC	1-1393240-4
RT315730				AC-coil	230 VAC	1-1419108-1
RT334012		1 NO contact	AgNi 90/10	DC-coil	12 VDC	4-1393240-5
RT334024					24 VDC	4-1393240-8
RT334048					48 VDC	5-1393240-0
RTB14005	12 A	1 CO contact			5 VDC	1-1393238-2
RTB14012	pinning 3.5 mm wash tight				12 VDC	1-1393238-5
RTB14024					24 VDC	1-1393238-9
RTB14048					48 VDC	2-1393238-1
RTD14005	16 A				5 VDC	5-1393238-9
RTD14006	pinning 5 mm wash tight				6 VDC	6-1393238-0
RTD14012					12 VDC	6-1393238-2
RTD14015					15 VDC	6-1393238-4
RTD14024					24 VDC	6-1393238-8
RTD14048					48 VDC	6-1393238-9
RTD34005		1 NO contact			5 VDC	8-1393238-3
RTD34012					12 VDC	3-1419108-5
RTD34024					24 VDC	3-1419108-8