RT series (DC Coil)

16 Amp PC Board Miniature Relay

File E22575
File LR15734
NR 6106

Users should thoroughly review the technical data before selecting a product part number. It is recommended that users also seek out the pertinent approvals files of the agencies/laboratories and review them to ensure the product meets the requirements for a given application.

Features

- SPST through DPDT contact arrangements.
- Immersion cleanable and flux tight versions available.
- VDE 10mm spacing, 5kV dielectric, coil to contacts.
- UL Class F (155°C) coil insulation system.
- Conforms to UL 508, 1873, 353 and 1950.
- Low profile; 15.7mm height.
- Sensitive coil; 400mW.
- Withstand surge voltage of 10,000V.
- Potter & Brumfield or Schrack brand.

Contact Data

Arrangements: 1 Form A (SPST-NO) Wiring Diagram Code 1, 2,3.
2 Form A (DPST-NO) Wiring Diagram Code 5.
1 Form C (SPDT) Wiring Diagram Code 1, 2, 3.
2 Form C (DPDT) Wiring Diagram Code 5.
Material: Silver-nickel 90/10.
Minimum Load: 12V/100mA.
Expected Mechanical Life: 10 million operations.
Initial Contact Resistance: 100 milliohms max @ 1A 12VDC.

Designed to meet UL/CSA/VDE ratings @ 25°C with relay properly vented. Remove vent nib after soldering and cleaning.

Ratings @ 25°C

Code	NO/NC Load	Type	Operations
1	10A/10A @ 277VAC	Resistive/GP	100K
	10A/10A @ 30VDC	Resistive	100K
	12A/12A @ 250VAC	Resistive/GP	30K
	12A/12A @ 30VDC	Resistive	30K
	3/4 HP @ 480VAC*	Motor	6K
	1/2 HP @ 240VAC*	Motor	6K
	1/3 HP @ 120VAC*	Motor	6K
	48 LRA/10 FLA @ 240VAC*	Motor	30K
	TV-3 @ 120VAC*	Tungsten	25K
	A300, 720VA @ 240VAC*	Pilot Duty	30K
3	16A/16A @ 250VAC	Resistive/GP	50K
	20A/20A @ 277VAC	Resistive/GP	30K
	20A/20A @ 24VDC	Resistive	30K
	16A/16A @ 30VDC	Resistive	30K
	1 HP @ 480VAC*	Motor	6K
	1 HP @ 240VAC*	Motor	6K
	1/2 HP @ 120VAC*	Motor	6K
	60 LRA/10 FLA @ 250VAC*	Motor	30K
	TV-5 @ 120VAC*	Tungsten	25K
	A300, 720VA @ 240VAC*	Pilot Duty	30K
	B300, 360VA @ 240VAC**	Pilot Duty	30K
5	8A/8A @ 277VAC	Resistive/GP	100K
	8A/8A @ 30VDC	Resistive	100K
	10A/10A @ 250VAC	Resistive/GP	30K
	10A/10A @ 30VDC	Resistive	30K
	1/2 HP @ 240VAC*	Motor	6K
	1/4 HP @ 120VAC*	Motor	6K
	34.8 LRA/6 FLA @ 120VAC*	Motor	30K
	17.4 LRA/5 FLA @ 240VAC*	Motor	30K
	B300, 360VA @ 240VAC*	Pilot Duty	30K
	TV-3 @120VAC*	Tungsten	25K

* Form A only
** Form B only

Initial Dielectric Strength

Between Open Contacts: >1,000VAC (1 minute).
Between Poles (code 5): >2,500VAC (1 minute).
Between Coil and Contacts: >5,000VAC (1 minute).
Surge Voltage (DC): >10,000VAC x (1.2 x 50 µsec).

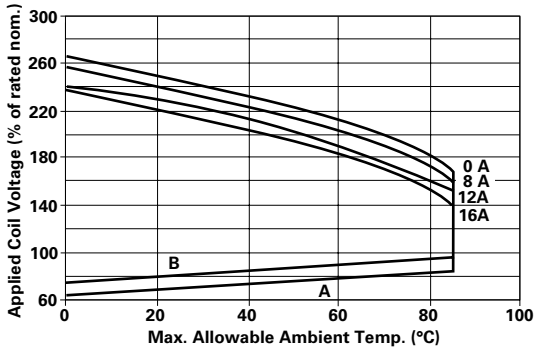
Coil Data @ 25°C

Voltage: 5 to 110VDC.
Nominal Power @ 25°C: 400mW.
Duty Cycle: Continuous.
Initial Insulation Resistance: 10,000 megohms, min., at 25°C, 500VDC and 50% rel. humidity.
Coil Construction: UL Class F (155°C).

Coil Data @ 25°C

Nominal Voltage VDC	DC Resistance in Ohms ±10%	Must Operate Voltage VDC	Nominal Coil Current (mA) – 50/60Hz.
005	62	3.5	80
006	90	4.2	66.7
009	202	6.3	44.4
012	360	8.4	33.3
018	810	12.6	22.2
024	1,440	16.8	16.7
048	5,760	33.6	8.3
060	9,000	42.0	8.0
110	30,250	77.0	4.3

Max. Ambient Temp. vs. Coil Voltage



A: Coil temperature = Ambient temperature.
B: 110% of nominal coil voltage at rated contact load.

Operate Data @ 25°C

Must Operate Voltage(DC): 70% of nominal.
Must Release Voltage(DC): 10% of nominal.
Operate Time (Excluding Bounce):
7 ms, typ., 15ms max. at nom. voltage.
Release Time (Excluding Bounce):
3 ms, typ., 6ms max. at nom. voltage.

Environmental Data

Temperature Range:
Storage: -40°C to +105°C.
Operating: -40°C to +85°C at rated current.
Vibration, Operational
N.O.:0.065"(1.65mm) max. excursions from 10 - 55 Hz:
N.C.:0.032"(0.82mm) max. excursions from 10 - 55 Hz:
with no contact opening >10µs.

Mechanical Data

Termination: Printed circuit terminals.
Enclosures: RT 1, 2, 3, 4: Flux-tight, top vented, plastic case.
RT B, C, D, E: Immersion cleanable, plastic case.
Weight: 0.35 oz. (10g) approximately.

Dimensions are shown for reference purposes only.
Dimensions are in inches over (millimeters) unless otherwise specified.
Specifications and availability subject to change.
www.tycoelectronics.com
Technical support:
Refer to inside back cover.

Ordering Information (DC Coil Models)

Typical Part Number ▸	RT	B	3	4	012	F

1. Basic Series:
RT = Miniature, printed circuit board relay.

2. Enclosure:
1 = 1 pole 12A, Pinning 3.5mm, flux-tight (Code 1).
2 = 1 pole 12A, Pinning 5mm, flux-tight (Code 2).
3 = 1 pole 16A, Pinning 5mm, flux-tight (Code 3).
4 = 2 pole 8A, Pinning 5mm, flux-tight (Code 5).
B = 1 pole 12A, Pinning 3.5mm, sealed (Code 1).
C = 1 pole 12A, Pinning 5mm, sealed (Code 2).
D = 1 pole 16A, Pinning 5mm, sealed (Code 3).
E = 2 pole 8A, Pinning 5mm, sealed (Code 5).

3. Contact Arrangement:
1 = 1 Form C (SPDT) (Requires wiring diagram codes 1, 2 or 3.)
2 = 2 Form C (DPDT) (Requires wiring diagram code 5.)
3 = 1 Form A (SPST-NO) (Requires wiring diagram codes 1, 2 or 3.)
4 = 2 Form A (DPST-NO) (Requires wiring diagram code 5.)

4. Contact Material:
4 = Silver-nickel 90/10 (standard stock).

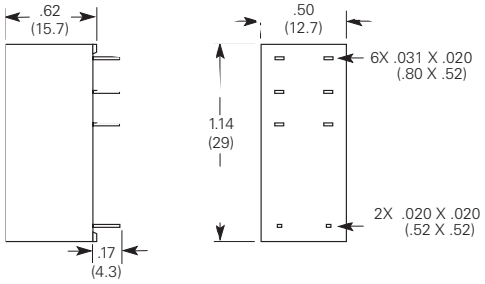
5. Coil Voltage:
005 = 5VDC
006 = 6VDC
009 = 9VDC
012 = 12VDC
018 = 18VDC
024 = 24VDC
048 = 48VDC
060 = 60VDC
110 = 110VDC

5. Coil Insulation Classification, Brand and Case Color
F = UL Class F, Potter & Brumfield Brand, Black Case
Leave Blank = UL Class F, Schrack Brand, Orange Case

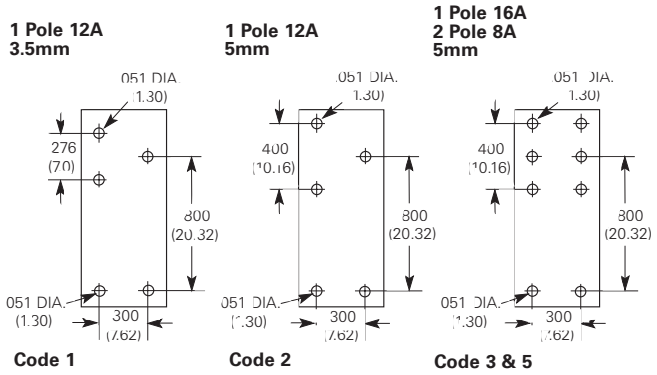
Our authorized distributors are more likely to stock the following items for immediate delivery.

RT114012F	RTB14012F	RTB34024F	RTD14005F	RTD34012F	RTE24005F	RTE44012F
RT114024F	RTB14024F	RT314012F	RTD14012F	RT424012F	RTE24012F	RTE44024F
RTB14005F	RTB34012F	RT314024F	RTD14024F	RT424024F	RTE24024F	

Outline Dimensions

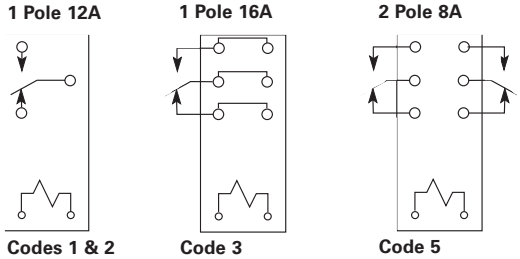


PC Board Layouts (Bottom View)



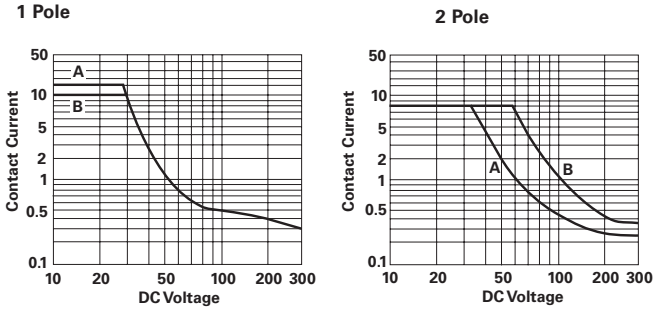
Notes: 1. On single throw models, only necessary terminals are present.
2. With the recommended PCB hole sizes, a grid with a pattern from 0.0984 to 0.1 in (2.5 - 2.54 mm) can be used.

Wiring Diagrams (Bottom View)



Note: On single throw models, only necessary terminals are present.

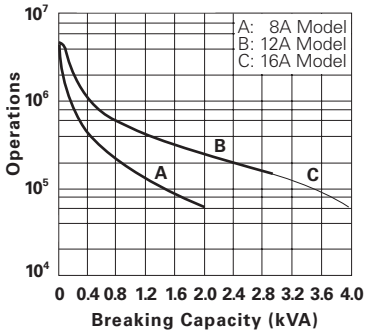
Breaking Capacity



A: 16A Version.
B: 12A Version.

A: 1 Contact.
B: 2 Contacts in series.

Contact Life for Resistive AC Load (Typical)



Note: Data from 250VAC @ 70°C.

Dimensions are shown for reference purposes only.

Dimensions are in inches over (millimeters) unless otherwise specified.

Specifications and availability subject to change.