RV-EC

THERMO-PROTECTOR FOR ELECTRIC MOTOR

RV-ECTP-D(TP-D) THERMAL PROTECTOR

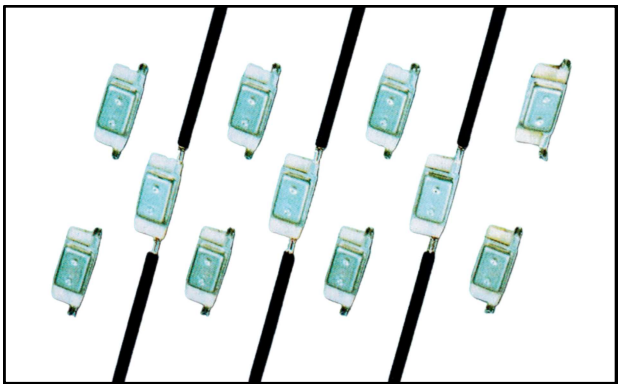
APPLICATIONS

The RV-ECTP-D (also named TP-D) thermal protector protects against overheating & over-current in various motors, transformers, ballasts, battery packs, office electric device, house-using electric device, automotive motors. It is sensitive in action and precision in temperature control.

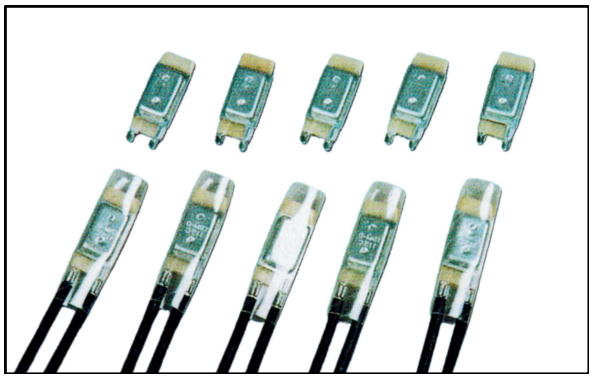
KEY FEATURES

1. **Package configuration**: The riveted terminals are available in two types:
    i. ECTP-D-A: same-side terminal arrangement
    ii. ECTP-D-B: opposite-side terminal arrangement
2. Precision Temperature: Fully automatic process control with 100% automatic temperature inspection; the set temperature accuracy is adjustable.
3. Optimized structure: The structure is simple and well-designed. The moving and fixed contacts remain under constant pressure, resulting in low contact resistance and fast, reliable switching.
4. Double Protection: The temperature-sensitive element is directly welded to the metal housing and connected in series with the circuit, making it highly responsive to both heat from the heat source and current overload.
5. 17AM-D and TP-D are different model designations of the same product.
6. The operating temperature tolerance is ±5°C.
7. The reset temperature is 2/3 of the rated operating temperature, with a tolerance of 15°C, or as specified by the user.

ECTP-D-A



ECTP-D-B



RV-EC

THERMO-PROTECTOR FOR ELECTRIC MOTOR

RV-ECTP-BR-A1D THERMAL PROTECTOR (NORMAL & ENFORCED TYPE)

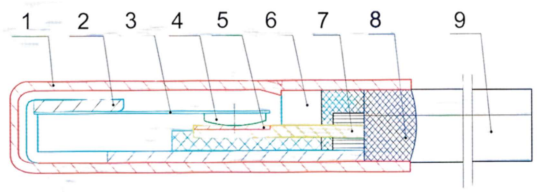
INSTRUCTIONS

The RV-ECTP-BR-A1D general-purpose and reinforced series thermal protectors are widely used in industrial and household appliance motors and electrical equipment, providing effective and reliable safety protection against abnormal operation caused by overcurrent and overheating.
The reinforced housing is suitable for built-in installation in plastic-encapsulated motors and can withstand plastic molding process pressure up to 3.5 MPa.
Product performance complies with IEC34-11, GB13232, and GB/T13002 standards.

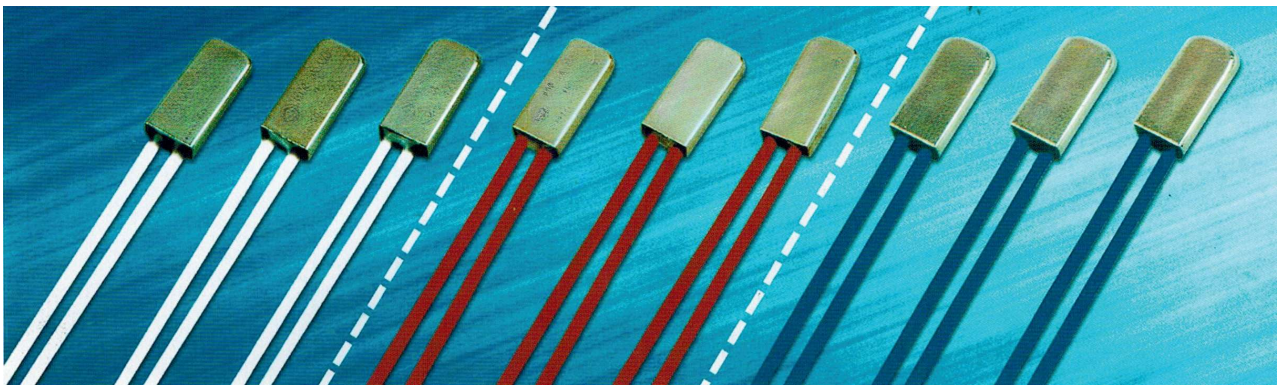
STRUCTURE & OPERATING PRINCIPLE

The BR-A1D series thermal protector is composed of a heat-conductive metal housing, bimetal element with welded silver alloy contacts, current-carrying frame, insulated fixing base, stationary contact pad, and heat-resistant lead wires. When current flows through the bimetal element, any increase in current or ambient temperature causes the internal temperature to rise to the preset operating point. The bimetal element then actuates and opens the contacts, disconnecting the circuit. When the device cools down to a safe temperature, the contacts automatically reset and restore normal operation.

STRUCTURE & OPERATING PRINCIPLE



- Case (Housing)
- Bracket (Holder)
- Bimetal element
- Moving contact
- Fixed contact
- Insulating base
- Stationary contact plate
- Sealing compound
- Lead wires



ECTP-BR-A1D WITH ELECTRONIC LEADS

ECTP-BR-A1D WITH SILICON LEADS

ECTP-BR-A1D WITH ENFORCED TYPE

RV-EC

THERMO-PROTECTOR FOR ELECTRIC MOTOR

RV-ECTP-BR-A1D THERMAL PROTECTOR (NORMAL & ENFORCED TYPE)

ATTENTION

· Since the case is a metal conductive body, it must be equipped with a heat-conductive and heat-resistant insulating sleeve during use.
· When selecting the protection temperature, refer to the A–C characteristic curve chart.

RATED OPERATING TEMPERATURE REFERENCE TABLE

Type	Open Temperature Range	Type	Open Temperature Range
50°C	50 ± 5.0°C	100°C	100 ± 5.0°C
55°C	55 ± 5.0°C	105°C	105 ± 5.0°C
60°C	60 ± 5.0°C	110°C	110 ± 5.0°C
65°C	65 ± 5.0°C	115°C	115 ± 5.0°C
70°C	70 ± 5.0°C	120°C	120 ± 5.0°C
75°C	75 ± 5.0°C	125°C	125 ± 5.0°C
80%	80 ± 5.0°C	130°C	130 ± 5.0°C
85%	85 ± 5.0°C	135°C	135 ± 5.0°C
90%	90 ± 5.0°C	140°C	140 ± 5.0°C
95%	95 ± 5.0°C	145°C	145 ± 5.0°C
		150°C	150 ± 5.0°C

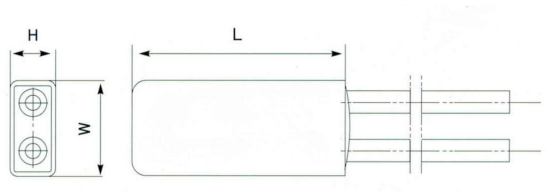
NOTE: THE RESET TEMPERATURE IS 2/3 OF THE RATED OPERATING (TRIP) TEMPERATURE, WITH A TOLERANCE OF ±15°C, OR AS SPECIFIED BY THE USER.

MAXIMUM CONTACT CAPACITY

The ECTP-BR series protector can perform 5,000 cut-off and reset protection cycles under the following conditions.

Voltage	24V-DC	125V-AC	250V-AC
Current	12A	12A	8A

INSTALLATION & DIMENSIONS

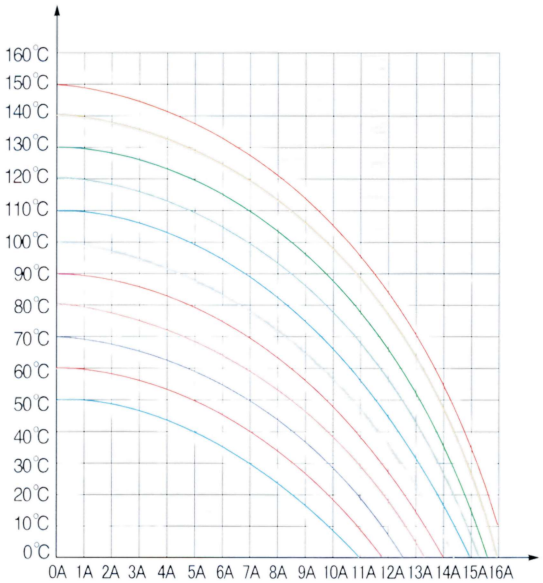


Type	L	W	H
ETCP-BR-A1D Common	15.0 + 0.4	6.5 + 0.2	3.1 + 0.1
ETCP-BR-A1D Enforced	15.5 + 0.4	7.1 + 0.2	3.7 + 0.1

The lead wires are AWG20 or AWG22 silicone wires and electron-beam irradiated wires.
Special requirements can be custom manufactured professionally upon request.

A-C CURVE

Critical trip current vs. ambient temperature curve. (When selecting the protection temperature, the effect of current must also be taken into consideration.)



RV-EC

THERMO-PROTECTOR FOR ELECTRIC MOTOR

RV-ECTP-BR-B THERMAL PROTECTOR

INSTRUCTIONS

The RV-ECTP-BR-B thermal protector is widely used in industrial and household appliances with encapsulated motors and electrical equipment, providing effective and reliable safety protection against abnormal operation caused by overcurrent and overheating.

The housing is made of high-strength PBT engineering plastic with high temperature resistance and fast heat conduction. It is suitable for external installation on encapsulated motors and for safety protection of household appliances.

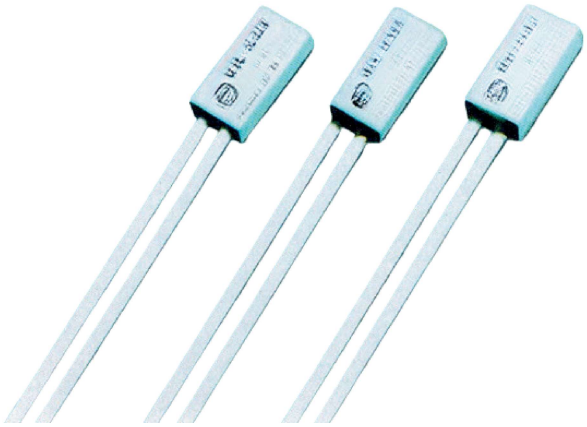
CONSTRUCTION AND OPERATING PRINCIPLE

The BR-B thermal protector is composed of a heat-conductive plastic housing, a bimetal element welded with silver alloy contacts, a conductive bracket, an insulating base, a stationary contact plate, and heat-resistant lead wires.

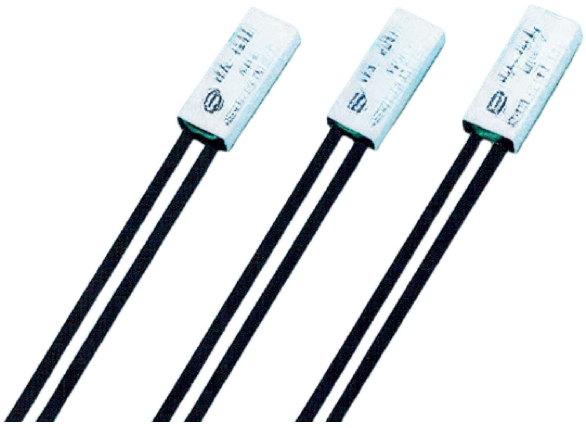
When current passes through the bimetal element with resistance, under abnormal operating conditions, as the current increases or the ambient temperature rises to the preset value, the bimetal element actuates rapidly, opening the contacts and cutting off the circuit.

When the device cools down to a safe operating temperature, the contacts automatically close, restoring normal operation.

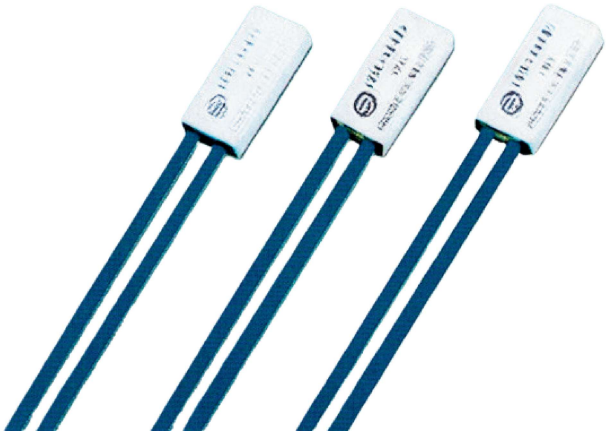
RV-ECTP-BR-B2D



RV-ECTP-BR-B3D



RV-ECTP-BR-B4D



RV-EC

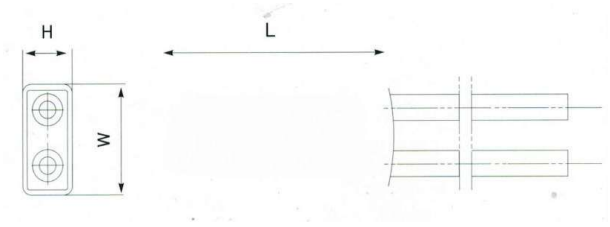
THERMO-PROTECTOR FOR ELECTRIC MOTOR

RV-ECTP-BR-B THERMAL PROTECTOR

APPLICATIONS

The BR-B series products are thermal protection devices that are sensitive to both current and temperature. They are widely used in encapsulated motors, lighting fixtures, batteries, vacuum cleaners, PC boards, and transformers, providing overcurrent protection and temperature control for general electrical appliances.

DESIGN DETAIL



Type	L	W	H	Leads
ECTP-BR-B2D	15.0 ± 0.4	7.3 ± 0.2	3.9 ± 0.1	The lead wires are AWG20 and AWG22 silicone wires, AWG22 electron-beam irradiated wires, and tinned bare copper wires. Special requirements can be professionally custom manufactured upon request.
ECTP-BR-B3D	18.0 ± 0.4	8.0 ± 0.2	4.0 ± 0.1	
ECTP-BR-B4D	21.0 ± 0.4	8.0 ± 0.2	4.0 ± 0.1	

RATED TRIP TEMPERATURE TABLE

Type	Open Temperature Range	Type	Open Temperature Range
50°C	50 ± 5.0°C	100°C	100 ± 5.0°C
55°C	55 ± 5.0°C	105°C	105 ± 5.0°C
60 °C	60 ± 5.0°C	110°C	110 ± 5.0°C
65 °C	65 ± 5.0°C	115°C	115 ± 5.0°C
70 °C	70 ± 5.0°C	120°C	120 ± 5.0°C
75°C	75 ± 5.0°C	125°C	125 ± 5.0°C
80°C	80 ± 5.0°C	130°C	130 ± 5.0°C
85°C	85 ± 5.0°C	135°C	135 ± 5.0°C
90°C	90 ± 5.0°C	140°C	140 ± 5.0°C
95°C	95 ± 5.0°C	145°C	145 ± 5.0°C
		150°C	150 ± 5.0°C

INSTRUCTION:RESETING TEMPERATURE IS 2/3 OF STANDARD OPENING TEMPERA TURE OR SPECIFIED BY CUSTOMERS.IT'S TOLERANCE IS 15°C.

RV-EC

THERMO-PROTECTOR FOR ELECTRIC MOTOR

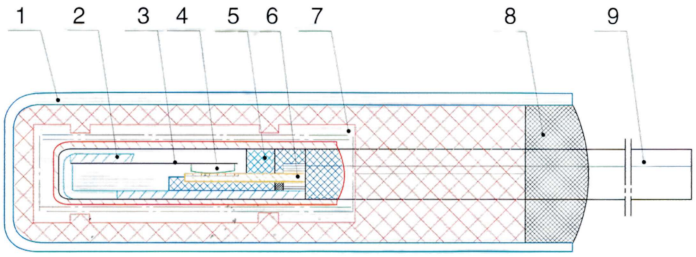
RV-ECTP-BR-C THERMAL PROTECTOR

INSTRUCTIONS

The ECTP-BR-C exhaust thermostat is a derivative product of the ECTP-BR-A series. It features a ECTP-BR-A thermal protector core, combined with an insulating tube and insulating inner housing, which are installed inside a high thermal conductivity purple copper (copper) outer shell and sealed with epoxy resin.

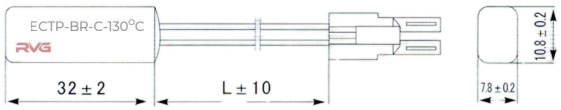
Its electrical insulation strength (between the lead wires and the housing) is greater than 1500 VAC. It is an externally mounted temperature protection and control device.

STRUCTURAL DIAGRAM



1. Case (Housing)
2. Conductive bracket (Holder)
3. Bimetal disc
4. Moving contact
5. Fixing base (Insulating base)
6. Stationary contact
7. Insulating inner case
8. Sealing compound
9. Lead wires

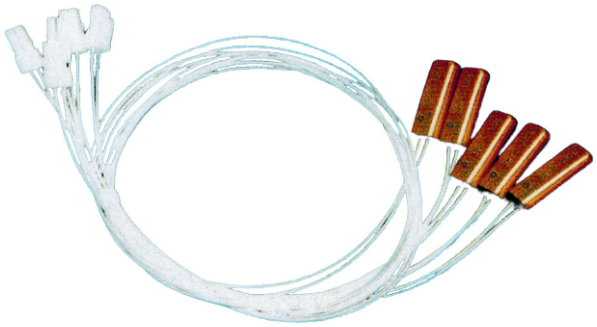
DESIGN DETAIL



Note: The lead wires can be professionally custom manufactured according to the customer's special requirements.

RATED TRIP TEMPERATURE TABLE (OPEN TEMPERATURE)

Type	Open Temperature Range	Reset Temperature Range
120°C	120 ± 5.0°C	80 ± 15.0°C
125°C	125 ± 5.0°C	85 ± 15.0°C
130°C	130 ± 5.0°C	85 ± 15.0°C
135°C	135 ± 5.0°C	90 ± 15.0°C
140°C	140 ± 5.0°C	95 ± 15.0°C
145°C	145 ± 5.0°C	95 ± 15.0°C



RV-EC

THERMO-PROTECTOR FOR ELECTRIC MOTOR

RV-ECTP-8AMC THERMAL PROTECTOR

INSTRUCTIONS & APPLICATIONS

The 8AMC series thermal protector is widely used in high-power motors, power tools, automotive motors, and electric heating appliances, providing effective and reliable safety protection against abnormal operation caused by overheating and overcurrent.

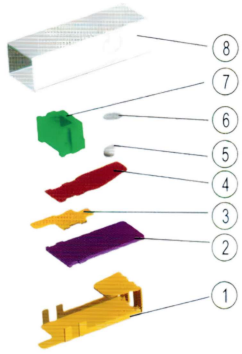
It features dual protection for both current and temperature and offers precise temperature control.

STRUCTURAL DIAGRAM

The 8AMC series thermal protector is an automatic temperature reset device connected in series with the motor winding. The protector responds to changes in the winding temperature and motor current. When the temperature and current increase, the generated heat is transferred to the bimetal element. Once the preset operating temperature is reached, the bimetal element actuates rapidly, causing the contacts to open and disconnect the circuit.

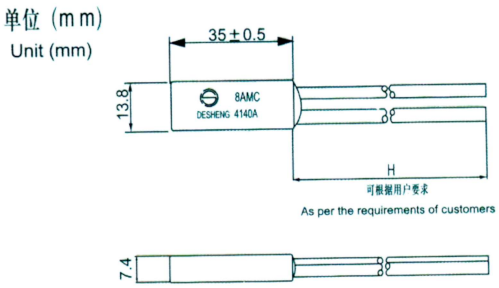
When the motor winding temperature drops to the product's rated reset temperature, the bimetal element returns to its initial state, the moving contact closes, and the circuit is restored to normal operation.

STRUCTURAL DIAGRAM



1. Bracket
2. Insulating pad
3. Conductive plate
4. Bimetal element
5. Moving contact
6. Fixed contact
7. Fixed base
8. Case (Housing)

DIMENSIONS



CONTACT CAPACITY

It can provide protection for more than 5,000 cycles under the following conditions.

Voltage	24V-DC	125V-AC	250V-AC
Current	50A	50A	25A

TEMPERATURE SPECIFICATION

Operating Temperature: 80°C ~ 160°C, in increments of 5°C

(Open Temperature: 80°C ~ 160°C, one step every 5°C)

Reset Temperature: 1/2 of the rated operating temperature, with a tolerance of ±20°C, or manufactured according to customer requirements.