



Description

Alloy Thermal-Link / Alloy Thermal Cutoff (ATCO) is defined as a non-resettable protective device functioning one time only. It is widely used in electrical equipment. Normally, thermal element is jointed to the two electrode leads. Under abnormal conditions, when the temp. reaches to the fusing temp. of DC-ATCO, the thermal element melts and quickly retracts to the two electrode lead ends with the aid of the flux resin and disconnects the circuit completely.

Features

- Non-Resettable
- High Accuracy of Functioning Temp.
- DC 50 A
- RoHS & REACH Compliant
- Meet UN 38.3 standard

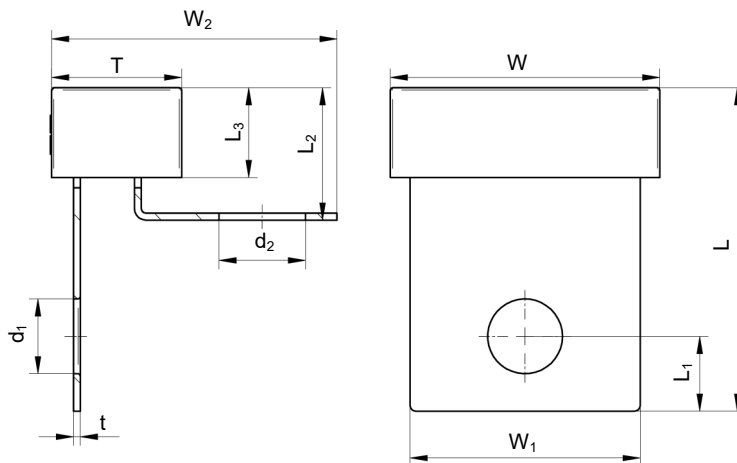
Applications

- EV Battery Modules
- High Power Solid State Relays

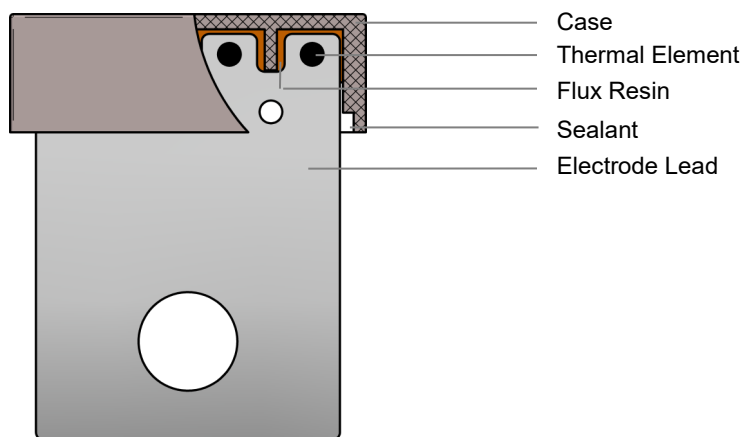
Customization

- Rated Functioning Temp.
- Shape of Electrode Leads

Dimensions (mm)



Structure Diagrams



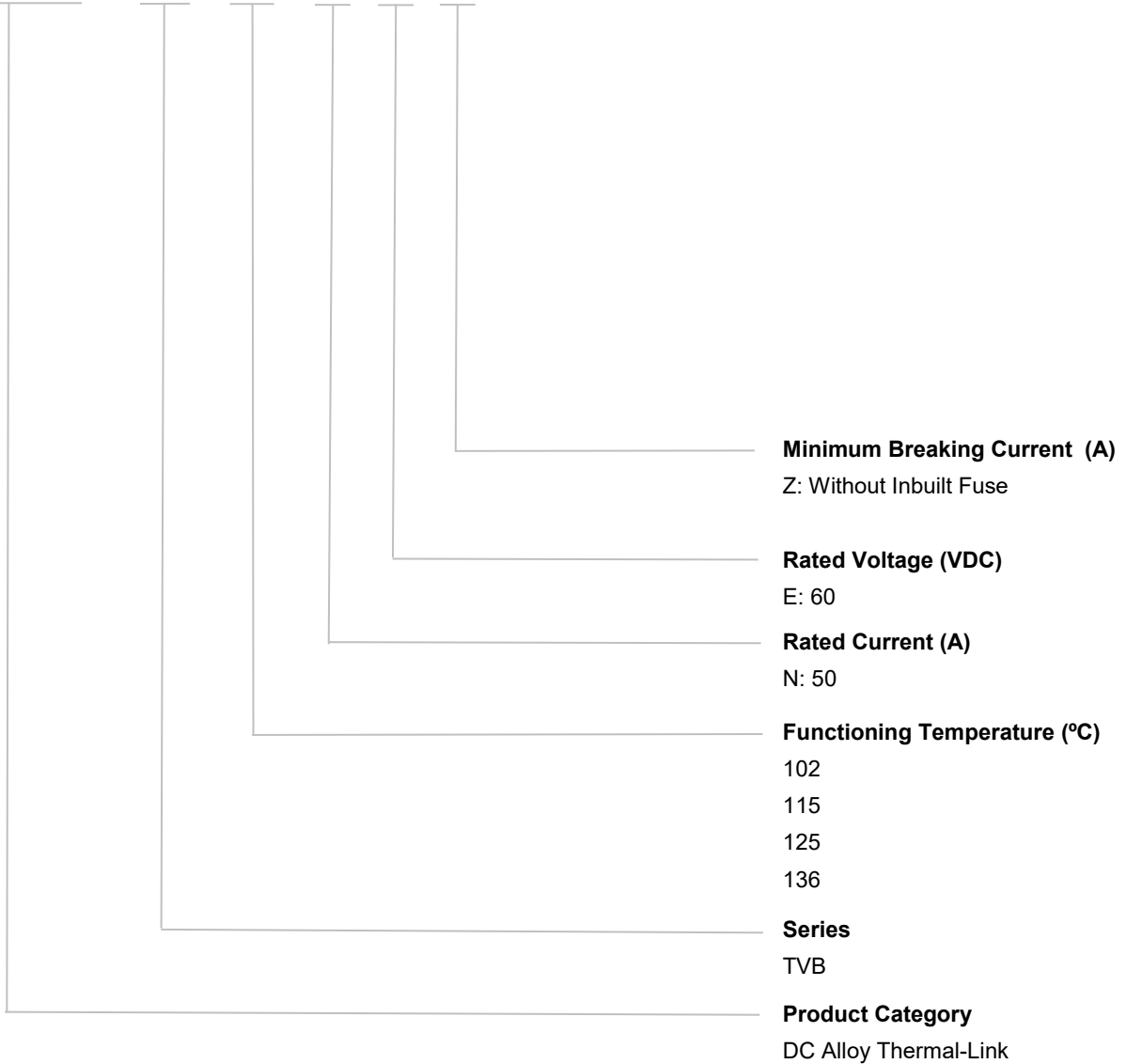
| L | L ₁ | L ₂ | L ₃ | W | W ₁ | W ₂ | T | t | d ₁ | d ₂ |
|------------|----------------|----------------|----------------|------------|----------------|----------------|------------|-------------|----------------|----------------|
| 28.0 ± 0.5 | 6.5 ± 0.2 | 11.5 ± 0.7 | 7.8 ± 0.5 | 23.4 ± 0.5 | 20.0 ± 0.5 | 24.8 ± 0.5 | 11.3 ± 0.5 | 0.60 ± 0.05 | 6.5 ± 0.1 | 7.5 ± 0.1 |

Part Numbering System

DC-ATCO - TVB 102 - N E Z

DC-ATCO

DC-ATCO



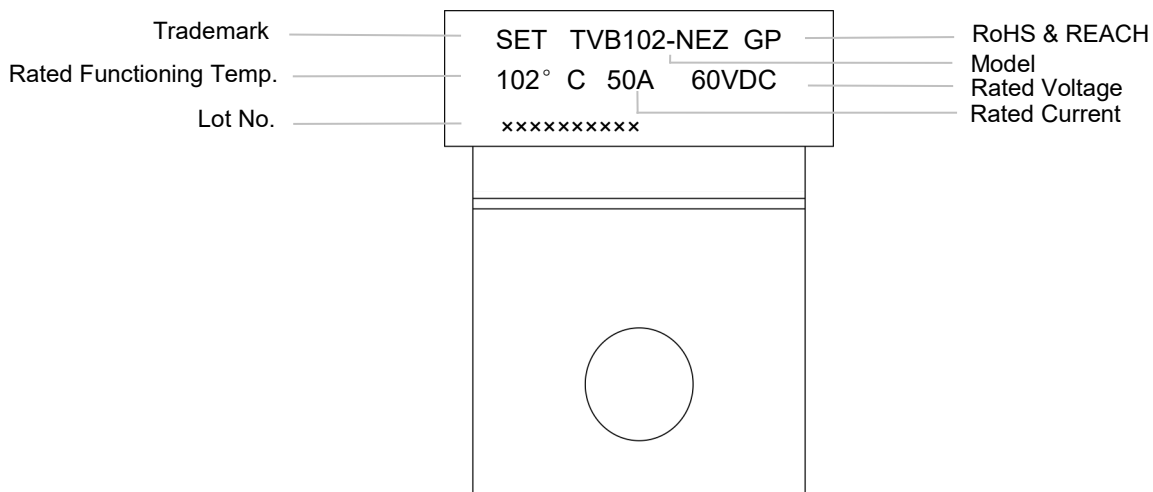
Glossary

| Item | Description |
|-----------------------------|--|
| TCO | Thermal-Link A non-resettable device incorporating a THERMAL ELEMENT which will open a circuit once only when exposed for a sufficient length of time to a temperature in excess of that for which it has been designed. |
| ATCO | Alloy Thermal-Link Alloy Type Thermal-Link, Alloy is the thermal element. |
| DC-ATCO | DC-Alloy Thermal-Link Direct Current Alloy Thermal-Link. |
| T_f | Rated Functioning Temp. The temperature of the Thermal-Link which causes it to change the state of conductivity with a detection current up to 10 mA as the only load. Tolerance: $T_f +0 / -10$ °C (GB 9816, EN 60691, K60691). Tolerance: $T_f \pm 7$ °C (J60691). |
| Fusing Temp. | The temperature of the Thermal-Link which causes it to change its state of conductivity is measured with silicone oil bath in which the temperature is increased at the rate of 0.5 °C to 1 °C / minute, with a detection current up to 10 mA as the only load. |
| T_h | Holding Temp. The Maximum temperature at which a Thermal-Link will not change its state of conductivity when conducting rated current for 168 hours. |
| T_m | Maximum Temp. Limit The temperature of the Thermal-Link stated by the manufacturer, up to which the mechanical and electrical properties of the Thermal-Link having changed its state of conductivity, will not be impaired for a given time. |
| I_{min} | Minimum Breaking Current The minimum current that Fuse requires after the Alloy of Thermal-Link opens in the circuit. |
| I_r | Rated Current The current used to classify a Thermal-Link, which is the maximum current that Thermal-Link allows to carry and is able to cut off the circuit safely. |
| U_r | Rated Voltage The voltage used to classify a Thermal-Link, which is the maximum voltage that Thermal-link allows to carry and is able to cut off the circuit safely. |

Specifications

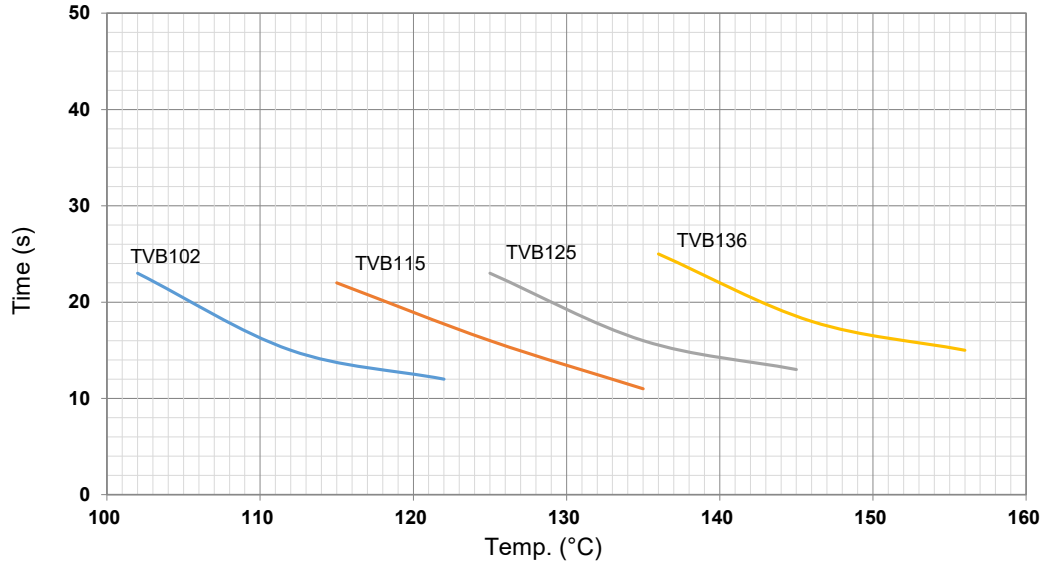
| Model | T_f | Fusing Temp. | T_h | T_m | I_r | U_r | RoHS REACH |
|------------|-------|--------------|-------|-------|-------|-------|---------------|
| | (°C) | (°C) | (°C) | (°C) | (A) | (VDC) | |
| TVB102-NEZ | 102 | 98 ± 3 | 61 | 180 | 50 | 60 | ● |
| TVB115-NEZ | 115 | 111 ± 3 | 70 | 180 | 50 | 60 | ● |
| TVB125-NEZ | 125 | 121 ± 3 | 80 | 180 | 50 | 60 | ● |
| TVB136-NEZ | 136 | 132 ± 3 | 91 | 180 | 50 | 60 | ● |

Marking



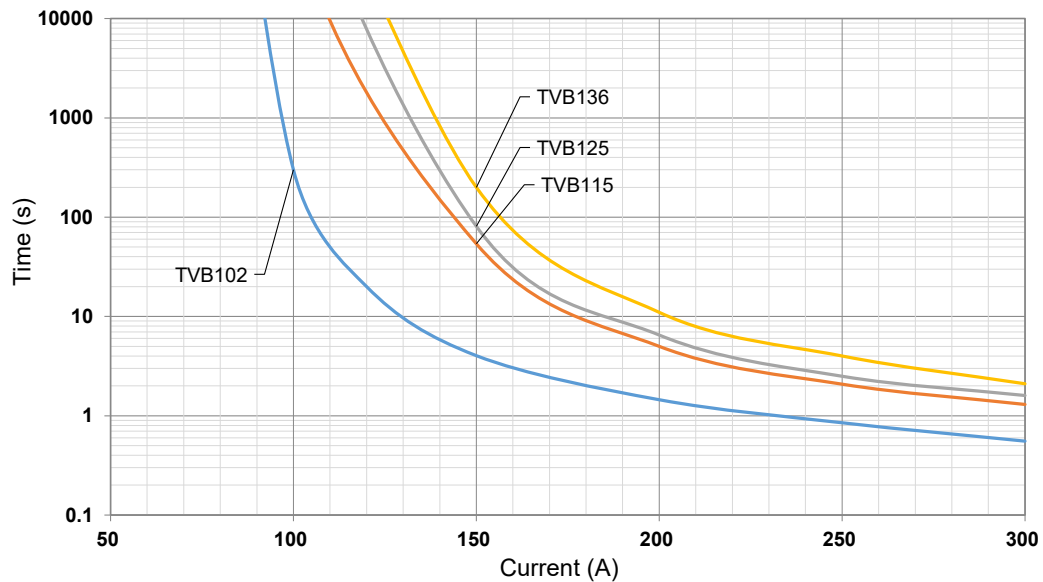
Product Temp.-Time Curve (Reference)

The Temp.-Time Curve of Thermal-Link in different temp. oil bath.



Product Current-Time Curve (Reference)

The Current-Time Curve shows functioning time at multi-times rated current at room temperature $25 \pm 2 \text{ }^\circ\text{C}$.





ATTENTION

Usage

1. When atmosphere pressure is from 80 kPa to 106 kPa, the related altitude shall be from +2000 m to - 500 m.
2. Operating voltage less than rated voltage of DC-ATCO, operating current less than rated current of DC-ATCO.
3. Do not touch the DC-ATCO body or electrode lead directly when power is on, to avoid burn or electric shock.

Replace

DC-ATCO is a non-repairable product. For safety sake, it shall be replaced by an equivalent DC-ATCO from the same manufacturer, and mounted in the same way.

Storage

Do not store the DC-ATCO at the high temp., high humidity or corrosive gas environment. The product shall be stored at $25 \pm 5^\circ\text{C}$ and $\leq 70\%$ RH, avoid direct sunlight and shall use them up within 1 year after receiving the goods.

Installation

Make Sure the Temp. of Installation Position.

1. It is recommended that a dummy DC-ATCO with inbuilt thermo-couple shall be used to determine the proper temperature.
2. The terminal product should be tested to ensure that potential abnormal conditions do not cause ambient temp. to exceed the T_m of the DC-ATCO.
3. Mount the DC-ATCO at the location where Temp. rises evenly.

Installation position of mechanical performance requirements.

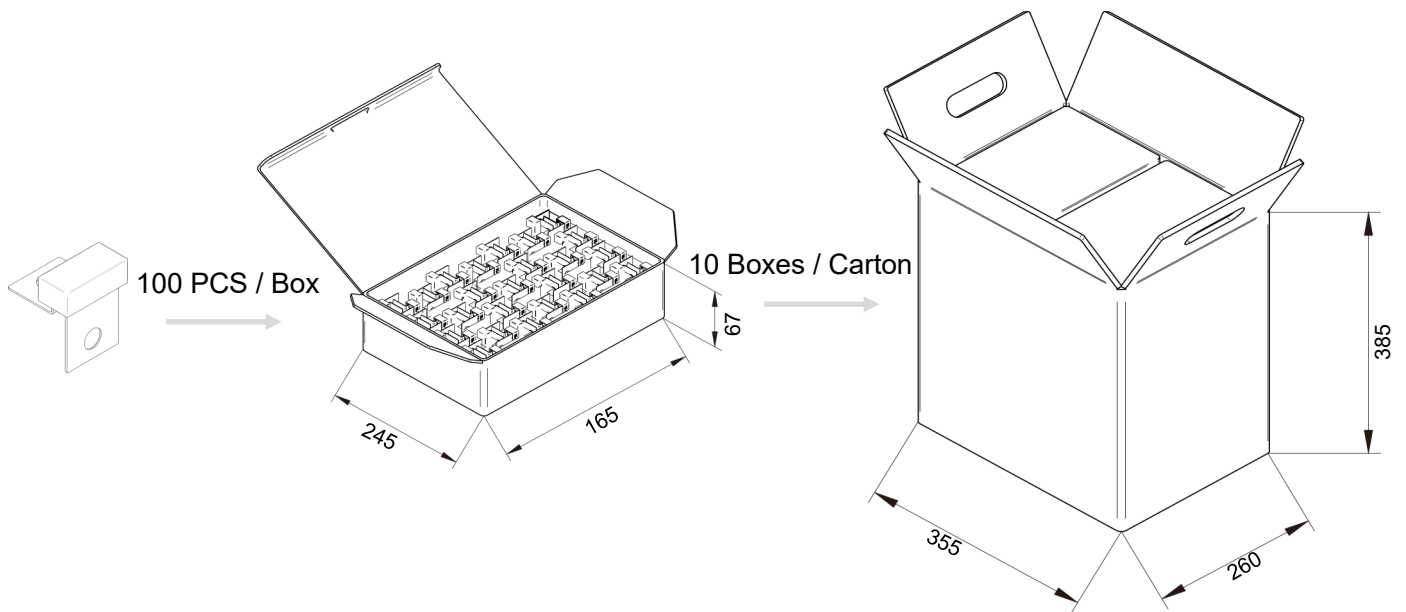
1. Do not locate the DC-ATCO in a place where severe vibration always occurs.
2. The seal or body of DC-ATCO must not be damaged, burned or over heated.

Mechanical Connection

1. Choose proper screw to lock.
2. To prevent loosening, please add gasket and use proper screw when installing the product. Recommended M6 screws, make sure the torque from 6 to 8 N · m.
3. If adding terminals to the electrode leads, do not adhere foreign materials like oil on the terminals or electrode leads and please use the terminal with cross section area 16 mm² (recommended), otherwise the terminal parts may have abnormal heating.

Packaging Information

| Item | Box | Carton |
|-------------------|----------------|-----------------|
| Dimensions (mm) | 245 × 165 × 67 | 355 × 260 × 385 |
| Quantity (PCS) | 100 | 1000 |
| Gross Weight (kg) | | 9.8 ± 10% |



DC-ATCO

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