

# ARC EXTINGUISH TECHNOLOGY

## **Company profile**

**SEMITRI PTY LTD. is committed in research of electronic arc extinguishing solutions for mechanical switches.**

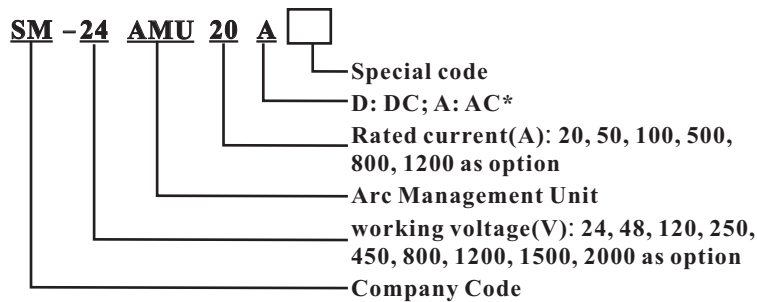
**Our main products include the AAE active arc extinguisher, the no-arc devices, the AMU arc management unit etc. Semitri have the unique electronic arc extinguishing technology, we will continue the innovations and share the technological achievements with you.**

# AMU Arc Management Unit

## General

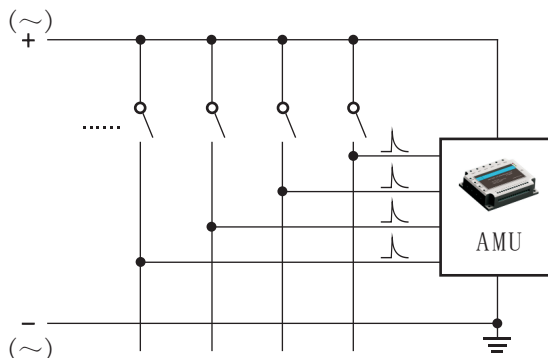
The AMU is the world's first intelligent arc management unit for electric pulse arc extinguishing. It is designed for arc detection, arc extinguishing, protection, fault information recording during the breaking and closing of switches, connectors, fuses, conductors and other components of electronic control systems. It can greatly prolong the electrical life of the switches, improve the reliability and safety of electric control system, reduce the maintenance cost, and can be widely used in the fields of new energy vehicles, locomotives, rail transit, vessels, automation control etc.

## Product Code



\*It can be used for single-phase and three-phase arc extinguishing.

## Application Circuit of Switch Array Arc Extinguishing



## Purpose

1. Improving safety
2. Increasing cost-efficiency
3. Enhancing reliability
4. Reduce maintenance

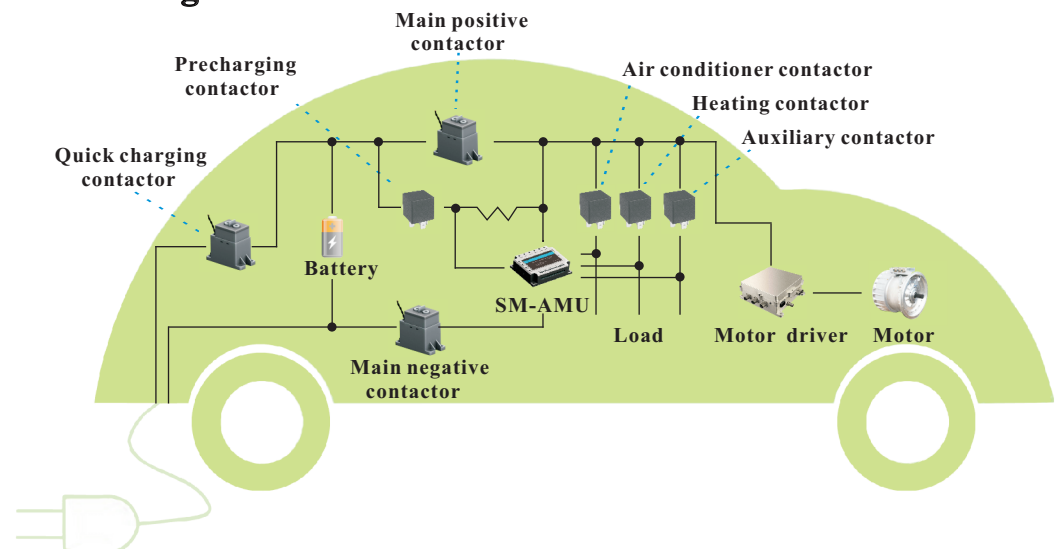
## Function

1. Arc detection
2. Arc extinguishing or suppressing
3. Eliminate breaking over-voltage
4. Fault acquisition, recording and reporting

## Application

1. Switches connected with the load in series
2. Connectors connected with the load in series
3. Fuses connected with the load in series
4. Conductors connected with the load in series

## Schematic Diagram



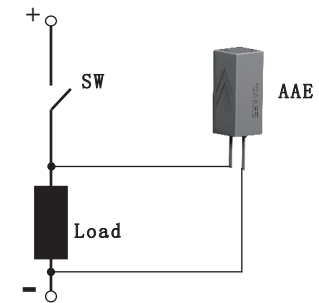
# AAE Active Arc Extinguisher

## General

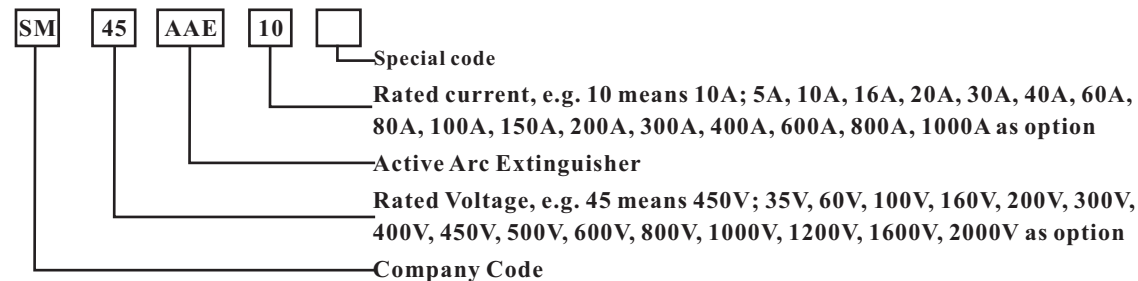
The AAE is the world's first active electronic arc extinguisher. It can meet the need of arc extinguishing in mechanical switches such as relays, breakers and button switches. It inhibits arcing or decreases arcing time, it can greatly increase the electrical operation life (10-1000 times) of the mechanical switch, it improves the current breaking ability and rated operation voltage of the mechanical switch, it greatly reduces the maintenance, it can be used for new energy vehicles, rail transit, vessels, fields of automation control etc. It's a safe and green product.

## Operation Principle

AAE is connected with the load in parallel, in the moment SW breaking, the AAE detects arcing or approaching arcing. Then it puts out a high energy pulse signal to the load. It causes that the voltage on both ends of SW is lower than the arcing voltage, as to achieve the arc extinguishing.



## Product Code

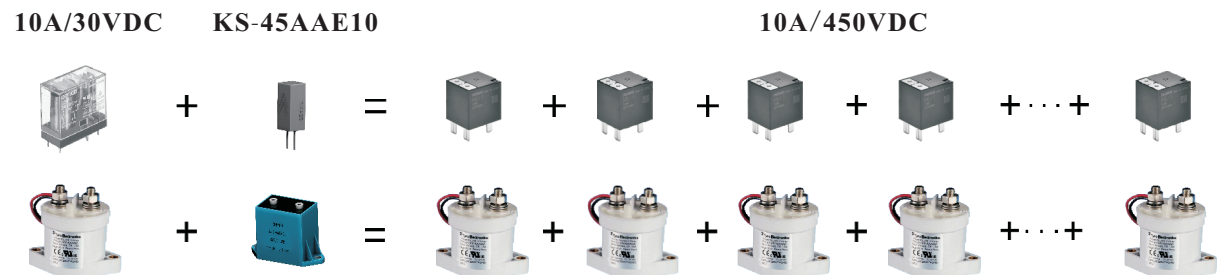


Note: the models with rated voltage over 2000V need to be customized.

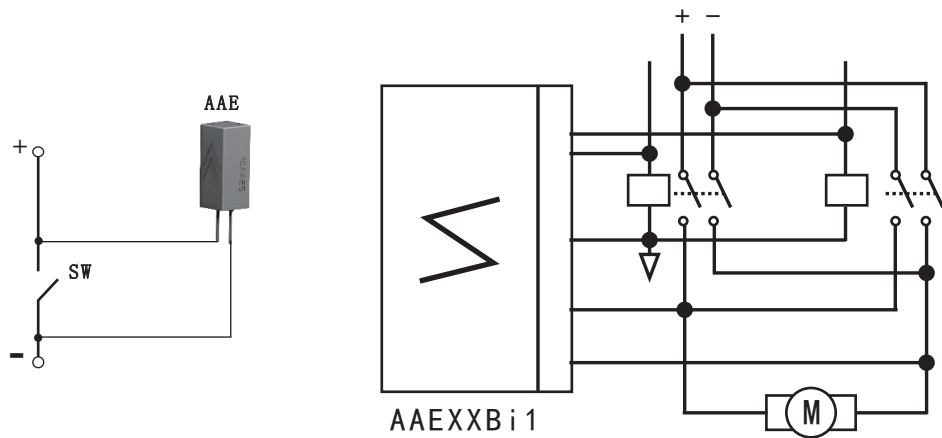
## Features

1. Small size
2. High cost effective
3. No quiescent power dissipation
4. Parallel connection with the load does not affect the insulation and withstand voltage of the mechanical switch.

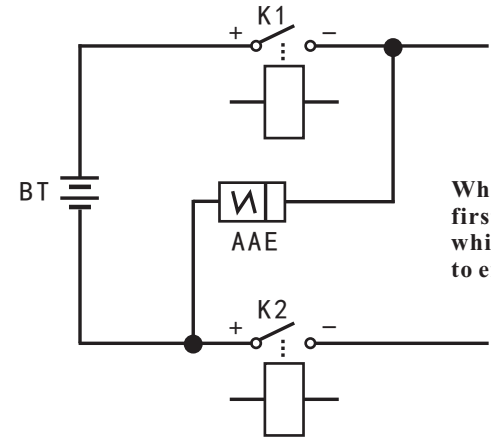
## Typical Application



## Diagrams of Typical Application

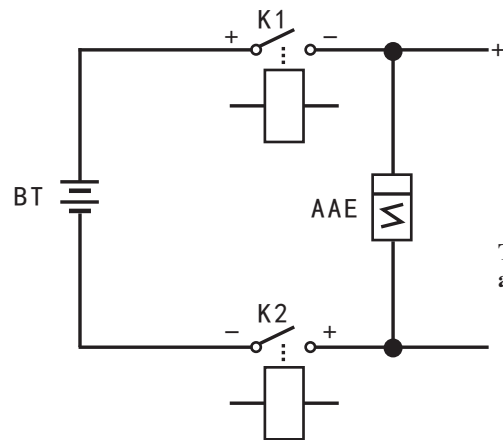


Application Circuit of AAE  
in Forward and Reverse Control of Motor



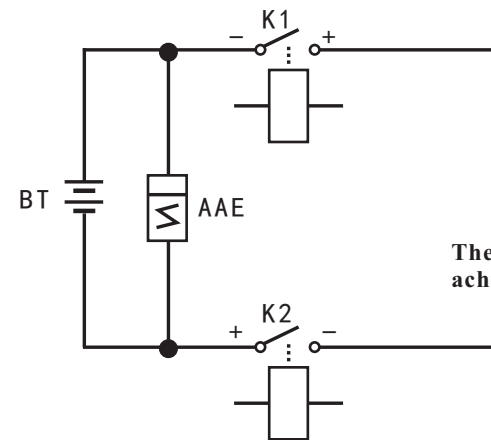
While discharging, K1 needs to be broken first to effectively extinguish the arc of K1; while charging, K2 needs to be broken first to effectively extinguish the arc of K2.

Schematic Diagram of Battery Discharging and  
Charging Arc Extinguishing Circuit



The arc extinguishing can be achieved either K1 or K2 breaks firstly

Schematic Diagram of Battery Discharging  
Arc Extinguishing Circuit



The arc extinguishing can be achieved either K1 or K2 breaks firstly

Schematic Diagram of Battery Charging  
Arc Extinguishing Circuit

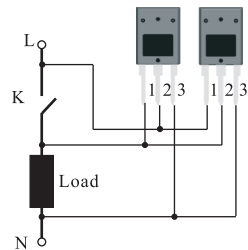
# No-arc Device

## General

The no-arc devices are the world's first no-arc devices, which solve the arc problems that having been troubling mechanical switches such as relays, push-button switches etc. It can suppress the generation of arcs and increase the electrical life by over an order of magnitude. By the means of this product, the current and voltage breaking capacity can be improved, as well as the amount of maintenance can be greatly reduced, thus being an extremely "green" product.

## Wiring Diagram

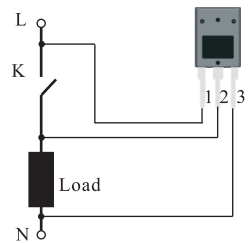
### ASS Series



Note :

1. ASS series products are not suitable for switches arc extinguishing for DC loads.
2. It is recommended that an over-voltage protection circuit be connected between pin 1 and pin 2 of this device, such as a piezoresistor in parallel or an RC absorbed circuit in parallel when it is used in case of over-voltage surge.
3. Require two devices in this case.
4. According to customer needs, pin 1 can connect with a fuse in series, and the rated operating current of fuse is 1/3 to 1/2 of the load current.

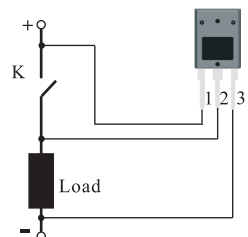
### AST Series



Note :

1. AST series products are not suitable for switches arc extinguishing for DC loads.
2. It is recommended that an over-voltage protection circuit be connected between pin 1 and pin 2 of this device, such as a piezoresistor in parallel or an RC absorbed circuit in parallel when it is used in case of over-voltage surge.
3. According to customer needs, pin 1 can connect with a fuse in series, and the rated operating current of fuse is 1/3 to 1/2 of the load current.

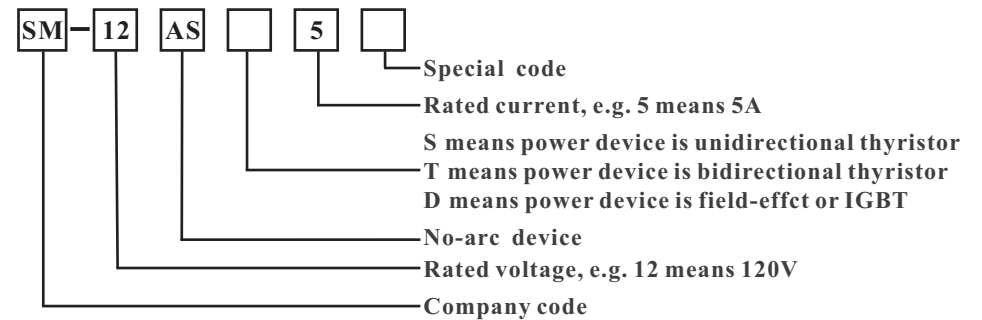
### ASD Series



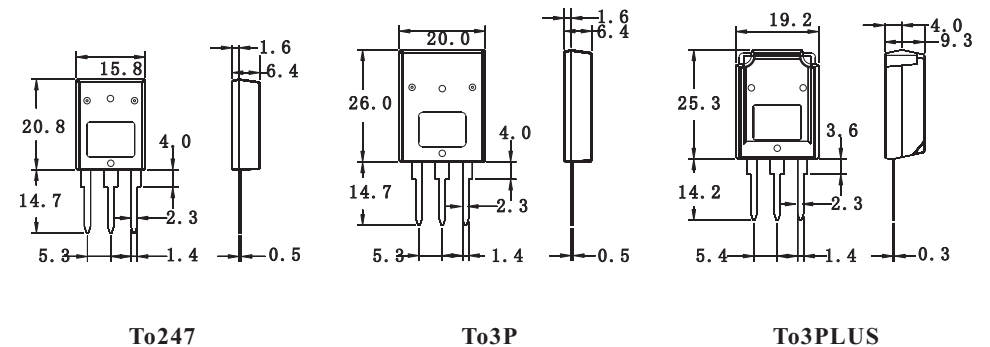
Note :

1. ASD series products are not suitable for switches arc extinguishing for AC loads.
2. It is recommended to connect a bidirectional transient suppression device between pin 1 and pin 2 of this device in parallel when it is used in case of over-voltage surge.
3. According to customer needs, pin 1 can connect with a fuse in series, and the rated operating current of fuse is 1/3 to 1/2 of the load current.

## Product Code



## Dimensions (unit: mm)

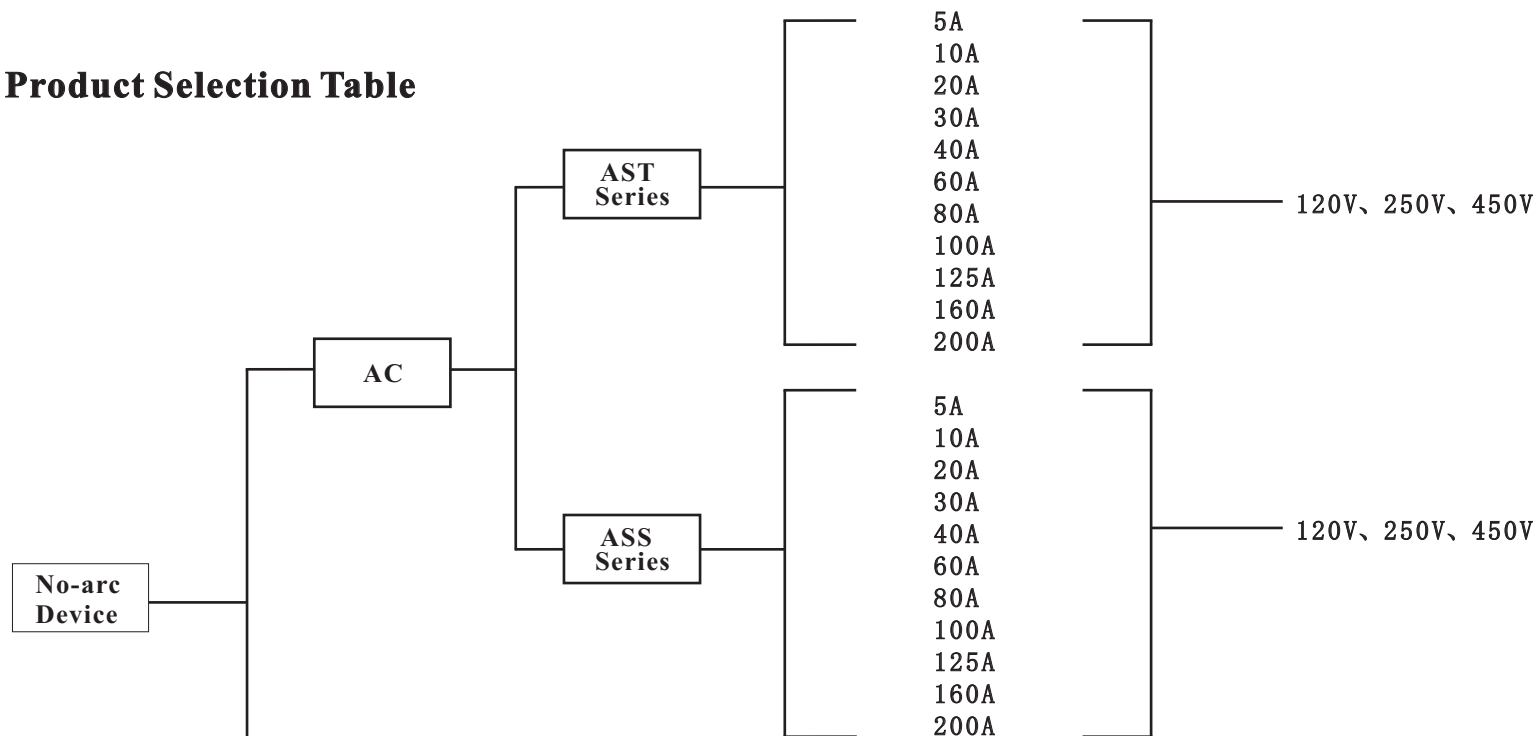


To247

To3P

To3PLUS

## Product Selection Table



1A	200V, 400V, 600V, 900V, 1200V
4A	900V, 1200V
5A	40V, 60V, 80V, 120V, 200V, 400V, 600V, 900V, 1200V
6A	900V, 1200V
10, 20A	40V, 60V, 80V, 120V, 200V, 400V, 600V, 900V, 1200V
30A	40V, 60V, 80V, 120V, 200V, 400V, 600V
50, 80, 100, 120A	40V, 60V, 80V, 120V, 200V, 400V, 600V, 900V, 1200V
140A	600V, 900V, 1200V
150A	40V, 60V, 80V, 120V, 200V, 400V
180A	40V, 60V, 80V
200, 240A	40V

**Note:** the models with rated voltage over 400V need to be customized.

**SEMITRI PTY LTD**

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