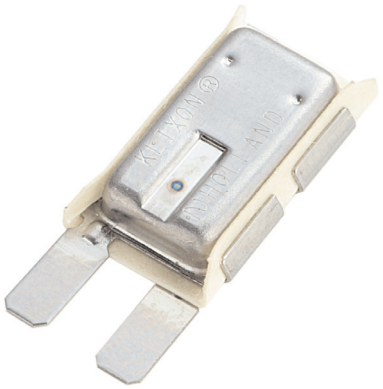
Product Bulletin

6AP
Motor Protector

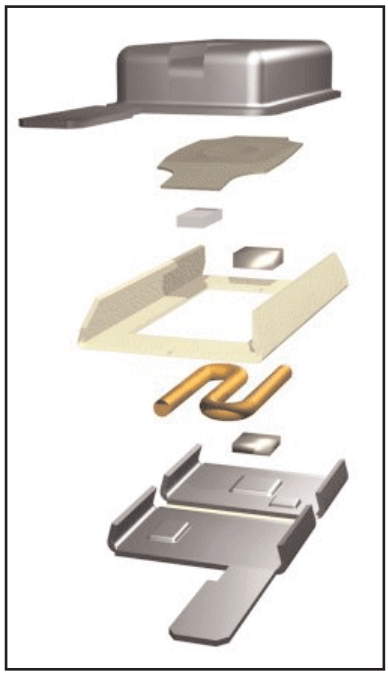


As a world leader in automotive motor protection, Texas Instruments has developed the 6AP to operate in wide temperature and current ranges, while providing consistent performance characteristics and excellent reliability. CAD-based design techniques combined with 6-Sigma supported manufacturing lines and the best quality control systems give this product maximum safety and reliability. The 6AP operates as a sensitive power cut-out which is widely used in Window-Lifts, Adjuster-Motors, Wipers, Door-Locks and various other applications. One protector series covers a broad range of applications, thus providing the flexibility to customize a particular rating based on the specific requirements of universal applications. But let's find out what really makes the 6AP perform its job as it does: the TI Klixon™ control.

Klixon™ snap-action controls
The Klixon™ disc is made of a combination of different metals with a predetermined calibration point. When heated, one of the metals expands more than the other, causing the disc to snap. As a world leader in bimetal technology and bimetal-based devices, Texas Instruments has set its goals of constant improvement and maximum reliability during years of operation and thousands of cycles. These high quality standards also explain the impressive production of several hundreds of millions of TI Klixon™ controls annually.

Design and operating principles
The 6AP is manufactured on fully automatic equipment, custom-designed to meet the various requirements of today's automotive industry.

The compact 6AP metal housing with integrated terminal holds the pre-set Klixon™ snap-action bimetal disc. The split plate carries a resistive S-shaped wire which provides additional current sensitivity. The advanced contact system - one on the bimetal disc and one on the plate - in combination with the strong disc guarantees a long life and reliable cycling. The operating principle of the 6AP is both simple and effective. The protector is actuated by current passing through and by heat received from the ambient temperature. The electrical circuit is interrupted when the disc reaches its preset temperature. As the device cools down to a safe temperature again, the contacts automatically reset. Each 6AP temperature rating has a bimetal disc specifically manufactured for that rating. Each device is calibrated and checked for opening-temperature. This results in optimum characteristics and consistent performance over the required life.



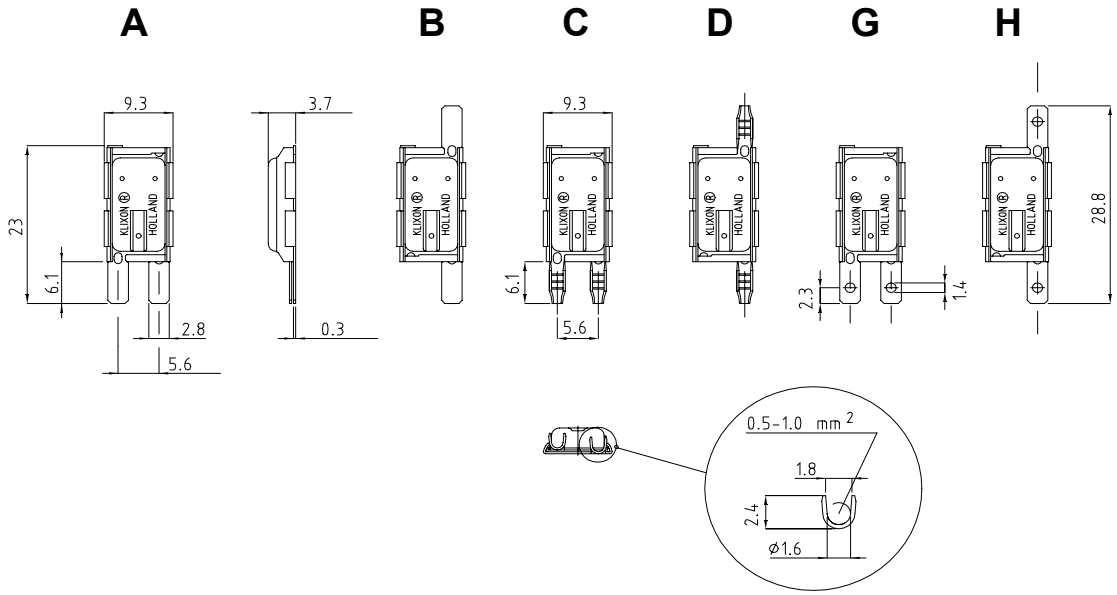
Key Benefits
- Thermal motor protection reacting to both current and temperature
- Wide variety of standard terminal configurations
- Terminal material provides trouble-free welding and in pre-tinned variation easy wavebath-soldering
- Eligible for customer partnumber printed on product as well as color-coding
- Varying of both bimetal and S-wire resistivity creates a current-time characteristic optimized for each specific application
- Unique combination of bimetal disc and resistivity wire guarantees very precise tripping times thus prevents too high motor temperature
- Protector selection and application testing by TI laboratory with results in extended report at your service

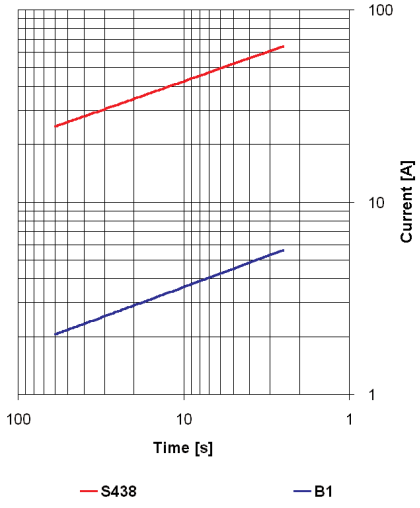
Serving the customer
Just provide us with your specifications concerning specific current and temperature rise conditions and we will select a matching 6AP motor protector and provide you with samples. But we do more than that. A skilled staff is available to perform application testing and protector selection in a well-equipped laboratory with sophisticated, state-of-the-art equipment. In close cooperation with the customer we develop the optimum solution, providing the lowest cost of ownership and thus increasing your competitive advantage. If motor testing and assembly are required on a larger scale, pilot series for your verification will be supplied within a very short cycle time. With design cycles becoming shorter and shorter, you can expect our prompt reply. If you wish to select your own ratings we have a software tool available to assist you in making the right selection.

6AP production facilities are located in Asia and Europe.

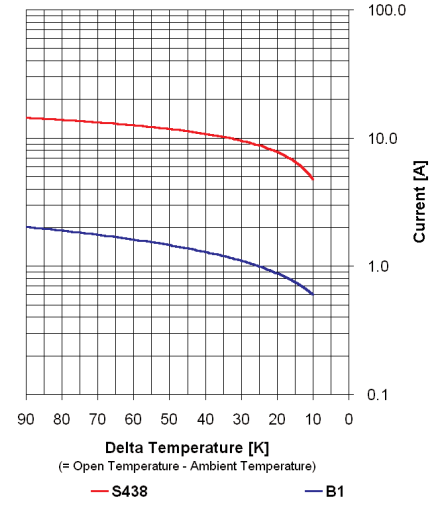
Dimensions (mm)

Terminal configurations





The curves of First Cycle Tripping time and Ultimate trip current are meant to be for selecting samples to perform verification tests only. In the figures two curves of a wide range of possibilities are shown. The level and slope can be varied by making an other selection for the pre-set temperature, bimetal disc and/or heater.



Specifications

Standard operating temperature range	from 100°C - 170°C (Increments 5K)
Tolerance on open temperature	± 5K
Peak temperature (5 min)	200°C
Max. Ambient temperature	T-open +20°C
Time check at T-ambient 25°C	4 to 10 seconds

Maximum contact rating

15 Vdc / 30A / 30.000 cycles
30 Vdc / 15A / 30.000 cycles

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