

3MP

Motor Protector / Thermal Cut-Out

Introduction

As world leader in appliance motor protection, Sensata Technologies has developed the 3MP for 120 and 250 Vac applications to operate in wider temperatures and current ranges than offered by existing protection solutions. In providing consistent performance characteristics and excellent reliability, its features anticipate future technical protection requirements on the AC motor market.



Design and Operating Principles

The 3MP consists of a metal housing with an integrated terminal. The housing 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 combination of a variety of standard terminal configurations and carefully selected materials provides easy handling and mounting. Customized terminal configurations are available on request. Wires including connectors can be automatically attached to the standard crimp terminal. Sensata Technologies supplies a range of standard lead configurations; customized solutions are available on request. In construction where the 3MP device is contacting conductive parts of the motor assembly, Sensata Technologies can deliver the devices with a Mylar™ insulation sleeve. Customized coding and colouring of the coding tape is an option on request.

The operating principle of the 3MP is both simple and effective. The protector is actuated by current passing through it and by the heat received from the surrounding parts. The electrical circuit is interrupted when the disc reaches its pre-set temperature. As the device cools down to a safe temperature, the contacts will automatically reset. The bimetal disc provides excellent thermal and current sensitivity in an overload situation. Under locked rotor conditions the integrated heater in combination with the bimetal disc provide very accurate trip times for maximum protection.

Applications

The 3MP is widely used throughout the world in electric motors for washing machines, dishwashers, dryers, vacuum cleaners and industrial applications in the 120 and 250 Vac applications. 3MP features permit to move the motor protector location outside the winding, providing the motor manufacturer extra flexibility during the manufacturing process. The recent certification as a thermal cut-out device combined with its unique current sensitivity, positions the 3MP as an advanced and cost effective solution to protect toroidal transformers.



SPECIFICATIONS

Standard operating temperature range	from 80°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
Contact Rating	27.5 A @cos 1 / 250Vac / 500 cycles 18 A @cos 0.6 / 250Vac / 1.000 cycles 18 A @cos 0.6 / 120Vac / 15.000 cycles



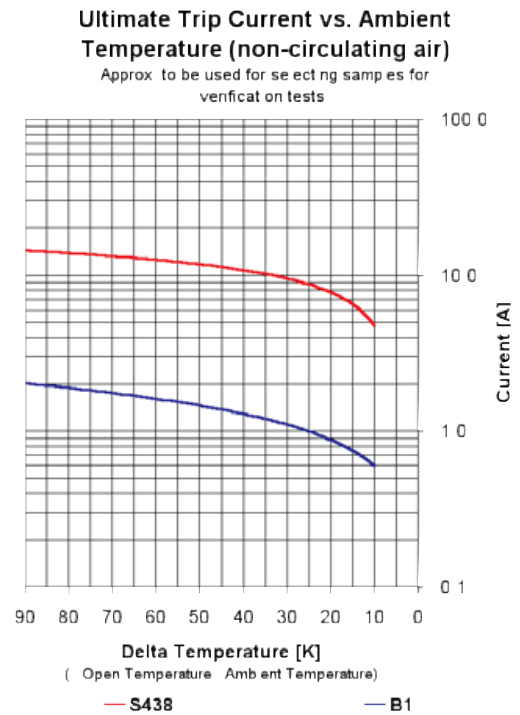
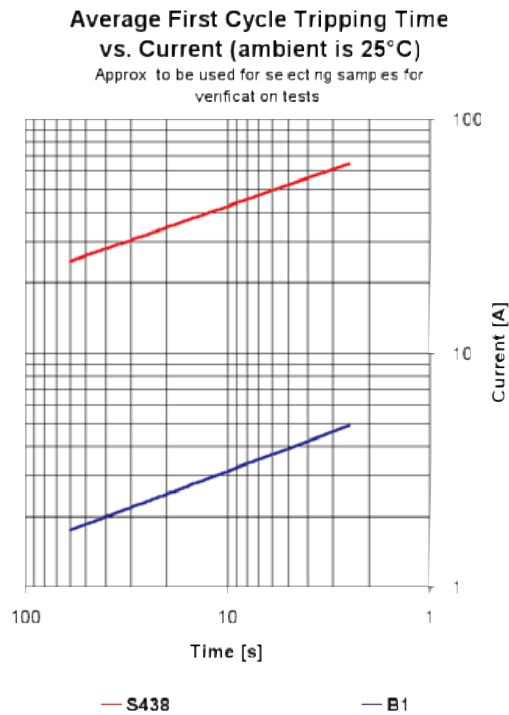
TECHNICAL SPECIFICATIONS

Declarations

	Declarations to EN60730-2-9	Declarations to EN60730-2-2
Purpose of the Control	Thermal Cut-Out	Thermal Motorprotector
Construction	Incorporated, non-electric	
Degree of Protection	IP00	
Terminals for Ext. Conductors	For internal conductors only	
Method of (Dis)Connection of Terminals	Soldering, spotwelding	
Temperature Limits of the Switchhead	170°C	
PTI of Insulation Materials	PTI 175	PTI 175
Method of Mounting	Off-winding, fixed position, no mounting limitation	Off-winding, fixed position, no mounting limitation
Operating Time	For continuous operation	
Type of Action	Type 2B	Type 3C
Reset Characteristic	Automatic	Automatic
Extent of Sensing Element	Whole control	
Control Pollution Degree	Degree 1	Degree 2

Curves

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.

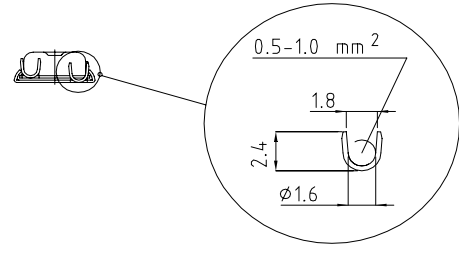
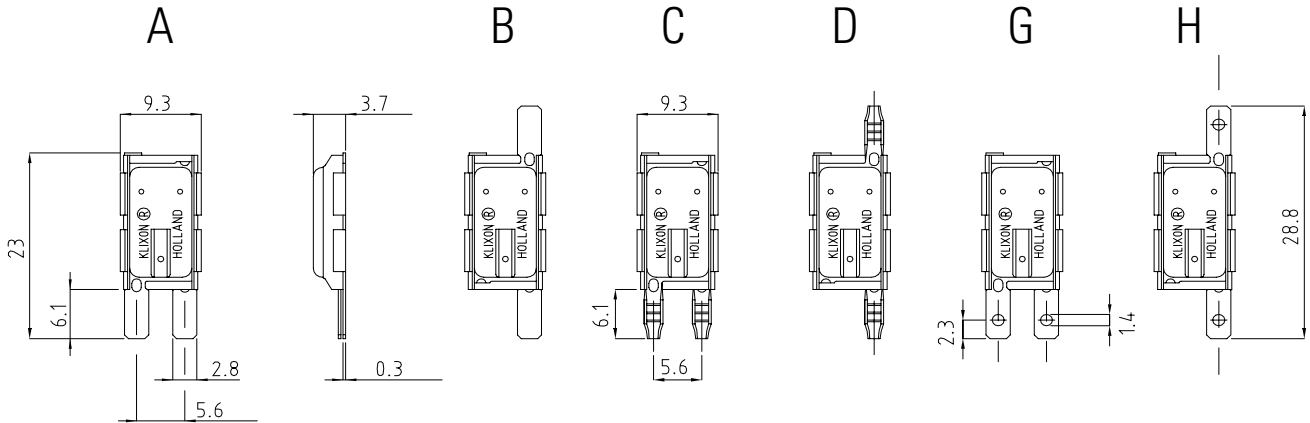




DIMENSIONS (mm)

Dimensions in mm [Inch]

Terminal Configurations





AGENCY APPROVALS & CERTIFICATIONS



Agency	File Number	Standard
ENEC	2014531.07	EN60730-2-2 Thermal motor protector
ENEC	2014531.07	EN60730-2-9 Thermal cut-out
UL / C-UL	E15962	UL / C-UL E15962 UL2111/ CSA-C22.2 No. 0-M91

Revised 01/25/18

Sensata Technologies, Inc. ("Sensata") data sheets are solely intended to assist designers ("Buyers") who are developing systems that incorporate Sensata products (also referred to herein as "components"). Buyer understands and agrees that Buyer remains responsible for using its independent analysis, evaluation and judgment in designing Buyer's systems and products. Sensata data sheets have been created using standard laboratory conditions and engineering practices. Sensata has not conducted any testing other than that specifically described in the published documentation for a particular data sheet. Sensata may make corrections, enhancements, improvements and other changes to its data sheets or components without notice.

Buyers are authorized to use Sensata data sheets with the Sensata component(s) identified in each particular data sheet. HOWEVER, NO OTHER LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE TO ANY OTHER SENSATA INTELLECTUAL PROPERTY RIGHT, AND NO LICENSE TO ANY THIRD PARTY TECHNOLOGY OR INTELLECTUAL PROPERTY RIGHT, IS GRANTED HEREIN. SENSATA DATA SHEETS ARE PROVIDED "AS IS". SENSATA MAKES NO WARRANTIES OR REPRESENTATIONS WITH REGARD TO THE DATA SHEETS OR USE OF THE DATA SHEETS, EXPRESS, IMPLIED OR STATUTORY, INCLUDING ACCURACY OR COMPLETENESS. SENSATA DISCLAIMS ANY WARRANTY OF TITLE AND ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, QUIET ENJOYMENT, QUIET POSSESSION, AND NON-INFRINGEMENT OF ANY THIRD PARTY INTELLECTUAL PROPERTY RIGHTS WITH REGARD TO SENSATA DATA SHEETS OR USE THEREOF.

All products are sold subject to Sensata's terms and conditions of sale supplied at www.sensata.com SENSATA ASSUMES NO LIABILITY FOR APPLICATIONS ASSISTANCE OR THE DESIGN OF BUYERS' PRODUCTS. BUYER ACKNOWLEDGES AND AGREES THAT IT IS SOLELY RESPONSIBLE FOR COMPLIANCE WITH ALL LEGAL, REGULATORY AND SAFETY-RELATED REQUIREMENTS CONCERNING ITS PRODUCTS, AND ANY USE OF SENSATA COMPONENTS IN ITS APPLICATIONS, NOTWITHSTANDING ANY APPLICATIONS-RELATED INFORMATION OR SUPPORT THAT MAY BE PROVIDED BY SENSATA.

Mailing Address: Sensata Technologies, Inc., 529 Pleasant Street, Attleboro, MA 02703, USA.

CONTACT US

Americas

+1 (508) 236-2551
electrical-protection-sales@
sensata.com

Europe, Middle East & Africa

+31743578156
info-sse@list.sensata.com

Asia Pacific

sales.isasia@list.sensata.com

China +86 (21) 2306 1500

Japan +81 (45) 277 7117

Korea +82 (31) 601 2004

India +91 (80) 67920890

Rest of Asia

+886 (2) 27602006 ext 2808