

Product Bulletin

15AM

Motor Protector/Thermal Cut-out

As world market leader in appliance motor protection Texas Instruments builds the 15AM motor protector to meet almost any application in this field. The 15AM is designed to provide locked rotor and overload protection in a wide variety of motors for industrial and domestic appliances. The 15AM is the leader in the European AC motor protection market.

Design & operating principles

In the 15AM design the nickel plated shell holds and protects the inner components against varnish penetration and mechanical forces. The heart of the device is the calibrated Klaxon™ bimetal disc, responding to current and temperature changes. It is supported by a slug and a contact welded on the disc. The fixed contact is placed on the opposite nickel-zinc coated plated steel shell, separated by a coated gasket for insulating and sealing. The 15AM can be supplied as a basic device with leads and other integrated quick connectors or automated connection systems. Customized lead configurations are available on request. The 15AM can be fitted in the best possible mounting location in combination with the optimum assembly operation. As the 15AM is a metal device it may be necessary to insulate the device from other conductive parts, an insulating sleeve is available on request.

The operating principle of the 15AM is both simple and effective. A current flows through the resistive Klaxon™ bimetal disc. When a fault condition occurs, the increased current and shell temperature heats up the bimetal disc which opens the contacts. As the device cools down to a safe temperature, the contacts will automatically reset.

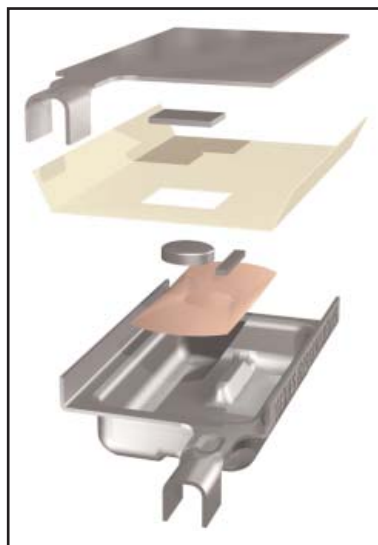
Applications

The 15AM operates as an incorporated thermal sensitive protector in electric motors for pumps, washing machines, dish washers, dryers and in several other applications like vacuum cleaners, fans, battery chargers, transformers for lighting (EN 61558) and microwave ovens.

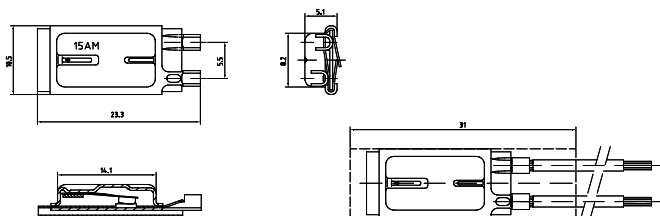


Key Benefits

- Texas Instruments Engineering knowledge base
- Provides mounting flexibility
- European supply
- Competitive price
- Local Engineering



Dimensions (mm)



Coding System

15AM	345	A	034	A	
		Sealing		Sleeve coding	
		Code	Type	Code	Type
		A	Standard	A	Standard
		B	Hotmelt sealed		No sleeve
		Standard Lead coding			
			Length (mm)	Code	
			55	031	
			60	032	
			65	033	
			70	034	
			75	035	
			80	036	
			90	037	
			100	038	
			110	039	
			125	040	
			140	041	
			160	042	
			180	043	
			210	044	
			240	045	
		Others on request			

Standard opening temperature													
Specific Bimetal resistivity		30		70		100		250		500		850	
Nominal differential**		20 K	45 K	20 K	45 K	20 K	45 K	20 K	45 K	20 K	45 K	20 K	45 K
Opening Temp*	65°C	006		305		007		008		009			
	70°C	011		310		012		013		014			
	75°C	016		315		017		018		019			
	80°C	021		320		022		023		024			
	85°C	026		325		027		028		029			
	90°C	036		335		037		038		039			
	95°C	046		345		047		048		049		050	
	100°C	056	061	355	360	057	062	058	063	059	064	060	065
	105°C	071	076	370	375	072	077	073	078	074	079	075	080
	110°C	086	091	385	390	087	092	088	093	089	094	090	095
	115°C		106		405		107		108		109		110
	120°C		121		420		122		123		124		125
	125°C		136		435		137		138		139		140
	130°C		151		450		152		153		154		155
135°C		166		465		167		168		169		170	
140°C		181		480		182		183		184		185	
145°C		196		495		197		198		199		200	
150°C		211		510		212		213		214		215	
155°C				520		222		223		224			
160°C				530		232		233		234			
165°C				540		242		243		244			
170°C				550		252		253		254			

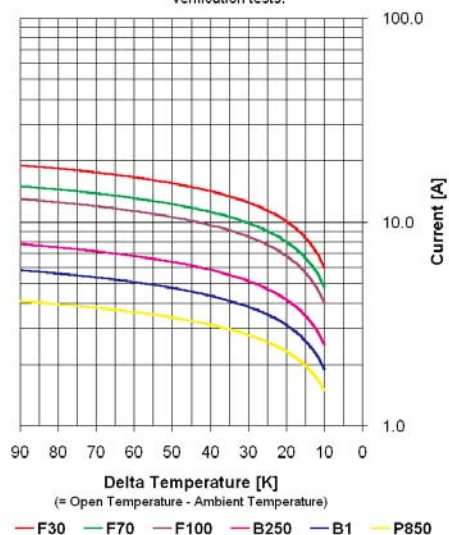
* Opening temperature tolerance $\pm 5K$

** Nominal differential equals nominal opening temp. minus nominal closing temp.

Tolerance on closing temperature: 20K differential $\pm 10K$
45K differential $\pm 15K$

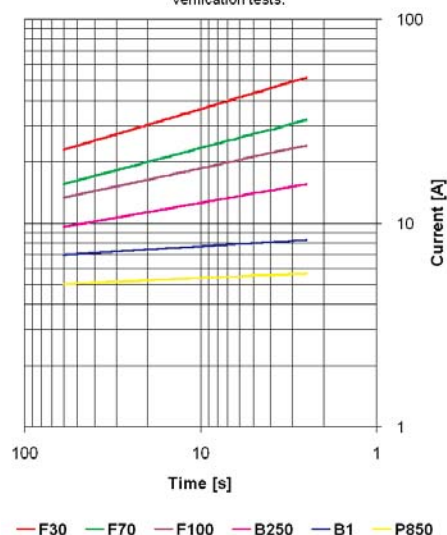
Ultimate Trip Current vs. Ambient Temperature (non-circulating air)

Approx. to be used for selecting samples for verification tests.



Average First Cycle Tripping Time vs. Current (ambient is 25°C)

Approx. to be used for selecting samples for verification tests.



Declarations

Declarations to EN60730-2-9		Declarations to EN60730-2-2	
Purpose of the control.....	Thermal cut-out	Purpose of the control.....	Thermal Motorprotector
Construction.....	Incorporated, non-electronic		
Degree of protection.....	IP00		
Terminals for ext. conductors.....	For internal conductors only		
Temperature limits of the switchhead.....	180°C		
PTI of insulation materials.....	PTI 175	PTI of insulation materials.....	PTI 175
Method of mounting.....	Inserting, clamping, bracketing or the like	Method of mounting.....	Inserting, clamping, bracketing or the like
Operating time.....	For continuous operation		
Type of action.....	Type 2C (T - open) Type 1C (T - close)	Type of action.....	Type 3C
Reset characteristic.....	Automatic	Reset characteristic.....	Automatic
Extent of sensing element.....	Whole control		
Control pollution degree.....	Normal	Control pollution degree.....	Normal

Specifications

Standard operating temperature range	from 65°C - 170°C
Tolerance on open temperature	$\pm 5K$
Maximum Ambient temperature	180°C
Maximum terminal temperature	185°C

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