7AM Series Thermal Protectors

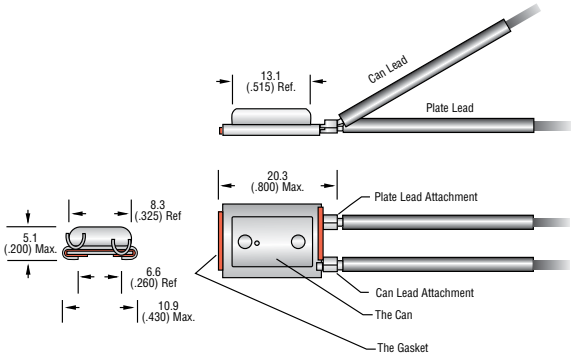
FEATURES

- Miniature size
- Current rating up to 22 Amps
- Individually temperature calibrated and checked
- Positive make and break with Klixon® snap-action disc
- Reliable temperature performance over life of protector
- Gasketed steel case suitable for impregnation processes
- Current and temperature sensitivity for maximum design flexibility
- Same side or opposite side terminations
- ROHS compliant ratings available

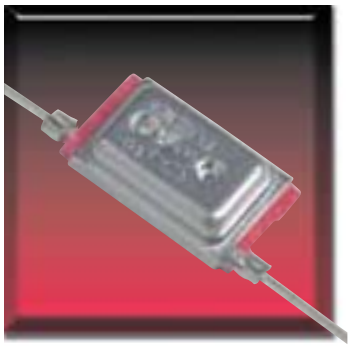
APPLICATIONS

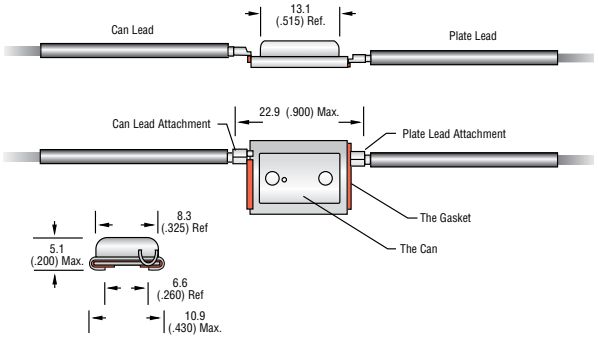
- Battery packs
- Battery chargers
- Permanent split capacitor motors
- Shaded pole motors
- HID ballasts
- Fluorescent lighting ballasts
- Transformers
- Vacuum cleaners
- Recessed lighting fixtures
- Automotive accessory motors, solenoids, etc...
- PC boards

The Klixon® 7AM thermal protector prevents overheating in a variety of consumer, industrial and commercial products. It is a miniature, snap-acting, thermally operated device that is a proven performer in protection technology. It is the right choice for ap-plications where available space is at a premium. Mod-Tronic can provide these units with a variety of leads, terminations and insulating sleeves to meet specific require-ments, including nickel strip leads for NI-CAD battery packs.



Type A, Radial Lead Configuration

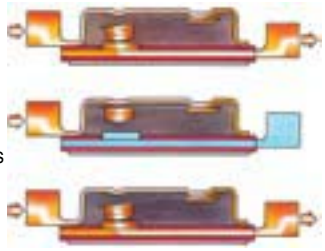




Type B, Axial Lead Configuration

Here's how the 7AM protects against overheating. . .

- Current flows through your lead connection into the can crimp terminal, through the can member, bimetal disc, and mating contacts. The current completes its path by exiting through the plate member and the integral plate crimp terminal to your lead connection.
- As the temperature rises, the heat is transferred to the bimetal disc. The disc then snaps open at the factory-calibrated opening temperature, thus breaking the current path.
- The bimetal disc snaps closed when the reset temperature level is achieved.



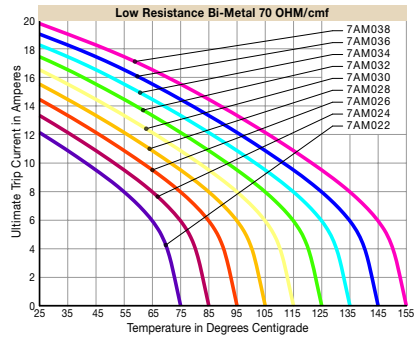
All dimensions mm (in.)

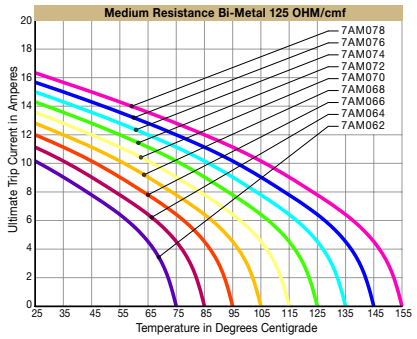
Bi-Metal Options

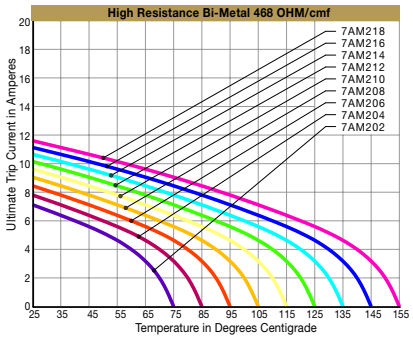
7AM performance is dependent upon the applied current, as well as temperature. Different Bi-metals are incorporated to achieve various performance characteristics. In applications where temperature rise is less than 2°C per second, use low-resistance ratings. High-resistance Bi-Metal is recommended for applications with 2°-5°C per second rates of temperature rise. Contact Mod-Tronic for additional application consideration if the rate of temperature rise exceeds 5°C per second. Use these curves to determine which Bi-Metal may trip in the manner required for your application.

Ultimate Trip Current vs. Protector Ambient Temperature

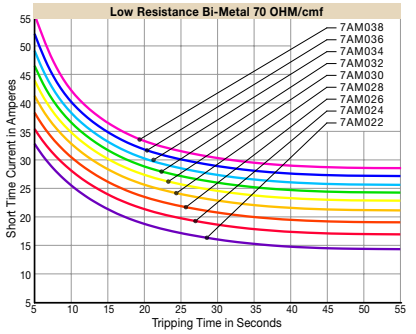
Approximate: to be used for selecting samples only

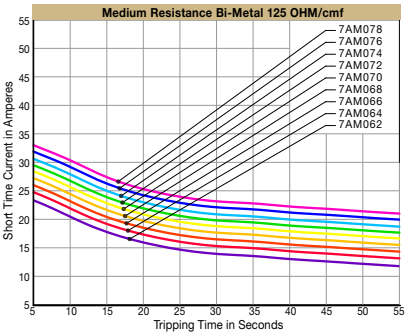


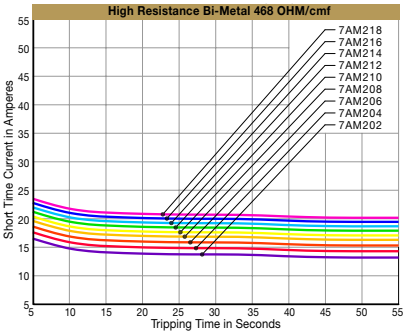




Average First Cycle Tripping vs. Current in 25°C Ambient







Leads

Our state-of-the-art automated lead processing equipment can produce lead wires to meet customer application needs for overall length, wire type, wire size, terminated connection and stripped length requirements. Standard lead size is 18AWG. 20AWG-14AWG is also available.

Leads

Unless otherwise specified, the following tolerances apply to all assemblies.

Lead Lengths		Minimum Pull Strength		
		AWG	Lead to Thermostat	Lead to AMP Terminal
0" to 2"	±0.062"	20 ga.	20 lbs.	20 lbs.
2.1" to 6"	±0.125"	18 ga.	20 lbs.	20 lbs.
6.1" to 12"	±0.250"	16-14 ga.	20 lbs.	50 lbs.
12.1" to 36"	±0.500"			
36.1" to 120"	±0.750"			

Sleeving

In order to achieve optimum heat transfer from the protected medium or ambient to the thermostat, the 7AM has been designed with the case connected to the bimetallic disc. This feature makes it necessary to electrically insulate the 7AM from the mounting surface. Typically, this is accomplished with a Mylar sleeve marked with the part number. Custom markings and other sleeve materials can also be provided.

UL Approvals

Applications	Approved Ratings	Approved Values		UL/CUL Approval	
		Temp. Code	Temp.(°C)	File No.	Standard
Appliance	120Vac/15FLA 85LRA	021-050, 061-070, 081-090, 101-110, 121-130, 141-150, 161-170, 181-190, 201-214, 219, 316-318, 325-336, 008, 805	70-175	E19340 Vol. 1 Sec. 4	UL873 & C22.2 No. 74 (CUL)
Flourescent Ballast Protector	120Vac/5.5Amp				
	200Vac & 240Vac/2Amp				
	277Vac/1.75Amp				
	600Vac/1Amp				
Incandescent Lamp Progector	600 Watts Tungsten 120V	021-039	70-160		
Motor	120Vac, 240Vac	020-036, 061-079, 134, 201-216	65-145 70-160 135 70-145	E40044 Vol. 1, Sec. 5	UL2111

Contact Ratings

16Vdc	20 Amps
115Vac	22 Amps
277Vac	8 Amps
600Vac	4 Amps

Ensure maximum contact needs do not exceed these voltage/current combinations. These ratings are applicable for 10,000 cycles.

Numbering System

7AM	202	A	5	-XXX-5
	Select Code for Low, Medium or High Resistance	*Select A or B*	*Opening Temperature Tolerance is ± 5°C*	*Use Only if High Seal Gasket is Required*

Standard Opening Temp. Code

Opening Temp. °C	Low Resistance Bi-Metal 70 /cmf	Medium Resistance Bi-Metal 125 /cmf	High Resistance Bi-Metal 468 /cmf
65	020	—	—
70	021	061	201
75	022	062	202
80	023	063	203
85	024	064	204
90	025	065	205
95	026	066	206
100	027	067	207
105	028	068	208
110	029	069	209
115	030	070	210
120	031	071	211
125	032	072	212
130	033	073	213
135	034	074	214
140	035	075	215
145	036	076	216
150	037	077	217
155	038	078	218
160	039	079	219
165	040	—	220
170	336	—	—
175	316	403	—

High-Seal Gasket

Designate this special order, high seal gasket for applications subjected to over-molding, dipping, or varnishing. Otherwise leave this space blank.

Terminal Configuration

A	Type A Radial Leads
B	Type B Axial Leads

Note: Unless otherwise requested, samples will be produced with 6" long, #18 gauge, XLPE 125C 600V (UL3173) leads. Thermtrol will apply Mylar insulation to electronically isolate the protector body.

Nonstandard opening temperatures and bimetal resistances are available.