FENWAL®

SERIES 12400, 67000 and 68000

MIDGET THERMOSWITCH® TEMPERATURE CONTROLLERS
(Differential Expansion Units)

TYPICAL APPLICATIONS

- Heat Transfer Systems
- Oil Baths
- Motor Bearing Protection
- Gear Box Protection

GENERAL INFORMATION

Midget THERMOSWITCH® units provide accurate control in limited space applications.

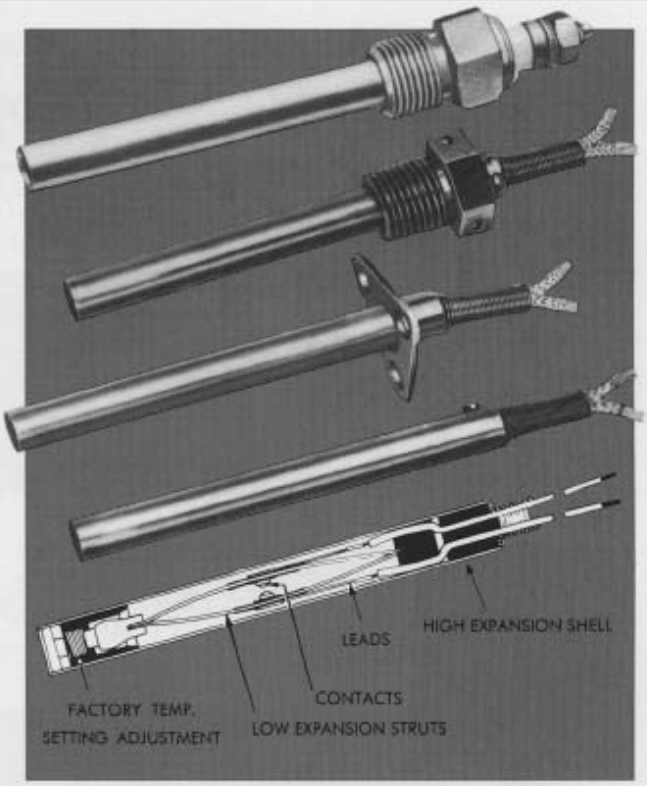
These miniature units operate on a unique differential expansion principle. They need not be heated through before responding to temperature change. Rather, the outer case itself is the activating element. This results in (1) short heat transfer path (2) built-in temperature anticipation (3) inherent thermostat sensitivity of less than 1F°.

If "tight spot" temperature control in the range of 32 to 500°F is your problem, a midget THERMOSWITCH unit is your answer.

VIBRATION CHARACTERISTICS

Two Wire Midgets (Series 67000 and 68000)
No resonant frequency from 5-500 Hz. Control set point is maintained within ±5F° when unit at room temperature is subjected to 10G acceleration (55 Hz) in each of three mutually perpendicular planes for 12 hours.

Single Wire Midgets (Series 12400)
No resonant frequency from 5-500 Hz. Control set point is maintained within ±10F° when unit at room temperature is subjected to 20G acceleration (150 Hz) in each of three perpendicular planes for 36 hours.



MODIFICATIONS

1 Special Marking
Special marking may be made by opaque ink or electro etching. Because of the small size of these units, the amount of marking is limited by the size of the stainless steel shell.

2 Extended Lead Wires

Lead wires may be extended to any length. Wire lengths are specified as portion of lead wire outside of THERMOSWITCH units as indicated by dimension "L".

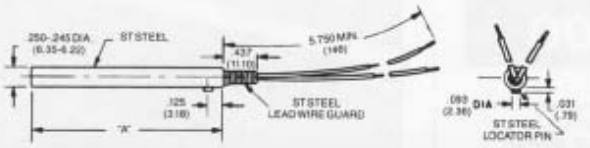
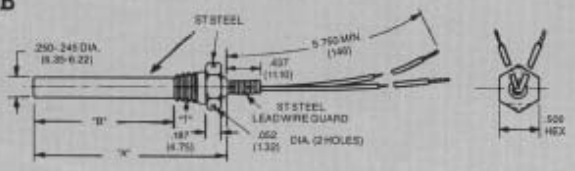
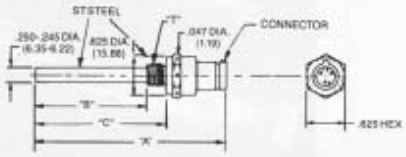
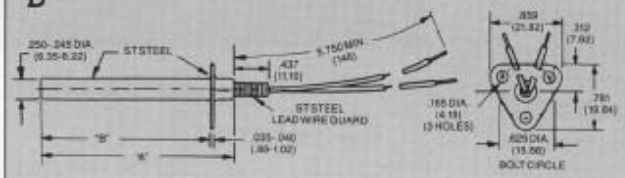
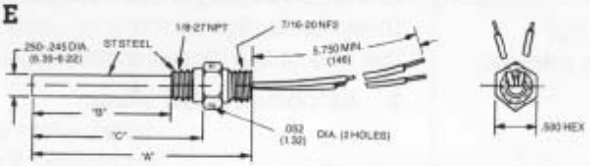
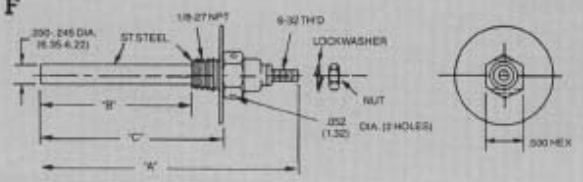
SPECIFICATIONS

Temperature Range 32 to 500°F (0 to 260°C)

Factory Setting Tolerance ±10F° (6C°)

Shell Material 300 Series Stainless Steel, Polish Finish (See Note 1)

Extreme Temperature Exposure Limits
–100°F (–73°C) indefinitely and 100F° (56C°) above set point [550°F (288°C) maximum] for one hour

MIDGET THERMOSWITCH TYPES	DIMENSIONS	Description	Catalog No.	Contact Operation On Temp. Rise
 SERIES 67000	A 	Cartridge Type (2 wire)	67000-0	Opens
			67021-0	Closes
 SERIES 67100	B 	Hex Head Type (2 wire)	67100-0	Opens
			67100-1	
			67101-0	Closes
 SERIES 67100	C 	Amphenol Connector Hex Head Type Hermetically Sealed	67121-14	Closes
 SERIES 67300	D 	Triangle Flange Type (2 wire)	67300-0	Opens
			67321-0	Closes
 SERIES 68000	E 	Coupling Head Type (2 wire)	68021-0	Closes
 SERIES 12400	F 	Hex Head Type (single wire grounded)	12411-0	Closes

Specifications subject to change without notice.

WARNING: *Operation outside specifications could result in failure of the Fenwal product and other equipment with injury to people and property.*

Dimensions inch (mm) "A"	"B"	"C"	Thread "T"	Current Rating (Note 2)	Lead Wire Material	Dielectric Strength (Leads to Case)	Insulation Resistance (Leads to Case)	Applicable Mods.
2.453 ± .031 (62.31 ± .79)				1A 120VAC	#22 AWG Teflon covered 1/4% silver plated copper wire .052 in (1.32 mm) nominal O.D.	1250VAC (60 cycles per minute)	20 megohm minimum	1 and 2
2.343 ± .031 (59.51 ± .79)				1A 120 VAC 1A 32VDC				
2.453 ± .031 (62.31 ± .79)	1.765 ± .015 (44.83 ± .38)		1/8-27NPT 3/8-24NF2	1A 120 VAC				
2.343 ± .031 (59.51 ± .79)	1.687 ± .031 (42.84 ± .79)		1/8-27NPT	1A 120 VAC 1A 32VDC				
3.718 ± .062 (94.44 ± 1.57)	2.093 ± .025 (53.16 ± .64)	2.468 ± .031 (62.69 ± .79)	3/8-24UNF-3A	1A 120 VAC 1A 28VDC				1
2.453 ± .031 (62.31 ± .79)	2.153 ± .045 (54.69 ± 1.14)			1A 120 VAC	#22 AWG Teflon covered 1/4% silver plated copper wire .052 in (1.32 mm) nominal O.D.			1 and 2
2.343 ± .031 (59.51 ± .79)	2.062 ± .015 (52.37 ± .38)			1A 120 VAC 1A 32VDC				
2.640 ± .062 (67.06 ± 1.57)	1.640 ± .045 (41.66 ± 1.14)	2.015 ± .045 (51.18 ± 1.14)	1/8-27NPT 7/16-20NF2	1A 120VAC 1A 32VDC				
3.156 ± .062 (80.16 ± 1.57)	1.906 ± .031 (48.41 ± .79)	2.250 ± .045 (57.15 ± 1.14)	1/8-27NPT	1A 48VAC 1A 32VDC				1

NOTES:

1. *In applications where corrosion or electrolysis is suspect, care should be taken to protect the controller so as to realize optimum performance and maximum life. Consult Fenwal for suggestions.*
2. *All ratings apply to noninductive loads such as heaters or resistors. Tungsten filament lamps have an inrush 10 to 15 times the steady state current. Do not exceed ratings.*
3. *Insulation resistance and dielectric strength tests to be conducted with switch in ambient of 75 to 100F° (42 to 55C°) below set temperature.*

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