

# THERMOSWITCH® TEMPERATURE CONTROLLERS

Series 15000, 16000, 17000 and 18000

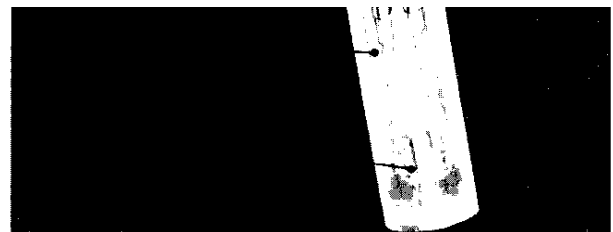
# FENWAL®

## SERIES 15000, 16000, 17000



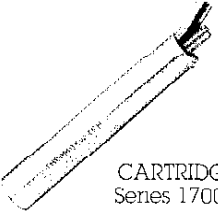
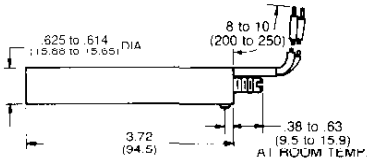

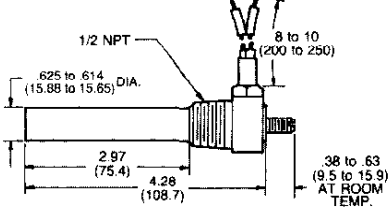
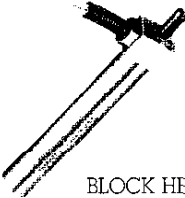
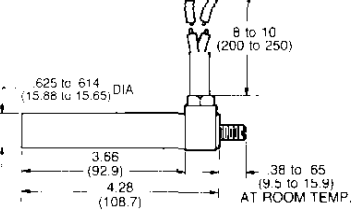

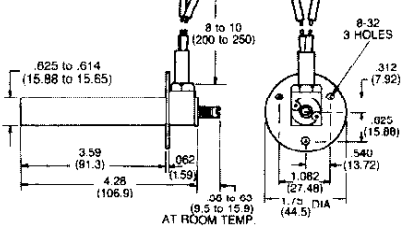

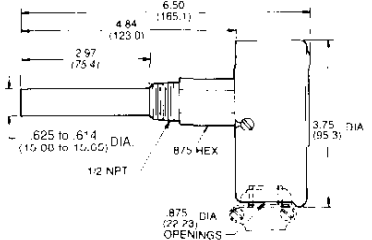

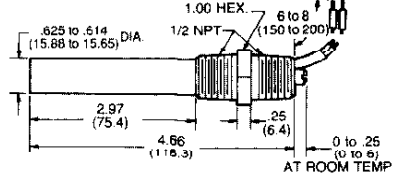
The THERMOSWITCH controller is a strut-and-tube type thermostat comprised of two basic parts: the outer shell, made of high-expanding metal and the strut assembly made of low-expanding metal.

A pair of electrical contacts is mounted on the strut assembly and installed in the shell under tension or compression. Because each end of the strut assembly is mechanically connected to the ends of the shell, a net change in force is produced on the low-expanding strut assembly as the high expanding shell expands or



no matter how small, causes a corresponding change

# THERMOSWITCH Controllers

THERMOSWITCH UNIT TYPE	DIMENSIONS	DESCRIPTION	CATALOG NUMBER
 <p>CARTRIDGE Series 17000</p>	 <p>.625 to .614 (15.88 to 15.65) DIA 8 to 10 (200 to 250) 3.72 (94.5) .38 to .63 (9.5 to 15.9) AT ROOM TEMP.</p>	<p>The basic element of all THERMOSWITCH controllers. Has all the desirable features of the ideal thermostat - high sensitivity, wide adjustment range, small size, rugged construction, vibration resistance, and low cost.</p> <p>This unit can be inserted into a .625 in (15.88 mm) reamed hole.</p>	<p>17000-0 ● 17021-0 ● 17002-0 ● 17023-0 ●</p>
 <p>HEX HEAD Series 17100</p>	 <p>1/2 NPT .625 to .614 (15.88 to 15.65) DIA 8 to 10 (200 to 250) 2.97 (75.4) 4.28 (108.7) .38 to .63 (9.5 to 15.9) AT ROOM TEMP.</p>	<p>Has all the internal features of the Cartridge Type above plus the addition of a pipe thread for mounting purposes.</p>	<p>17100-0 ● 17121-0 ● 17102-0 ● 17123-0 ●</p>
 <p>BLOCK HEAD Series 17200</p>	 <p>.625 to .614 (15.88 to 15.65) DIA 8 to 10 (200 to 250) 3.66 (92.9) 4.28 (108.7) .38 to .63 (9.5 to 15.9) AT ROOM TEMP.</p>	<p>This unit has the same mounting characteristics as the Cartridge Type but is designed so modifications may be included. It also can be inserted into a .625 in (15.88 mm) reamed hole.</p>	<p>17200-0 ● 17221-0 ● 17202-0 ● 17223-0 ●</p>
 <p>FLANGE HEAD Series 17300</p>	 <p>.625 to .614 (15.88 to 15.65) DIA 8 to 10 (200 to 250) 3.59 (91.3) 4.28 (106.9) .062 (1.59) 8-32 3 HOLES .312 (7.92) .025 (15.88) .540 (13.72) .062 (27.48) 1.62 (44.5) .38 to .63 (9.5 to 15.9) AT ROOM TEMP.</p>	<p>Has all the features of the Block Head Type except a mounting flange has been provided for easy mounting.</p>	<p>17300-0 ● 17321-0 ● 17302-0 ● 17323-0 ●</p>
 <p>JUNCTION BOX IMMERSION Series 17800</p>	 <p>6.50 (165.1) 4.84 (123.0) 2.97 (75.4) .625 to .614 (15.88 to 15.65) DIA 1/2 NPT 875 DIA (22.23) OPENINGS 3.75 (95.3)</p>	<p>Has electric conduit junction box containing terminal block and temperature adjusting dial and knob. Extended hexagonal section with pipe thread permits easy mounting. Dial and knob can be provided outside of box (See Modifications Section).</p>	<p>17800-0 ● 17821-0 ● 17802-0 ● 17823-0 ●</p>
 <p>COUPLING HEAD Series 18000</p>	 <p>.625 to .614 (15.88 to 15.65) DIA 1.00 HEX 1/2 NPT 6 to 8 (150 to 200) 2.97 (75.4) 4.66 (118.3) 25 (6.4) 0 to .25 (0 to 6) AT ROOM TEMP.</p>	<p>The Coupling Head Type has a hexagonal mounting section with pipe threads at each end, either of which may be used for mounting. This unit may be directly attached to electrical conduit.</p>	<p>18000-0 ● 18021-0 ● 18002-0 ● 18023-0 ●</p>

inch  
(mm)

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**-100 to +600°F/-73 to +316°C**

TEMPERATURE RANGE	CONTACT OPERATION ON TEMP. RISE	SHELL AND HEAD MATERIAL	STANDARD LEAD WIRE LENGTH (INCHES)	APPROX. DEGREES CHANGE PER FULL TURN OF ADJUSTING SLEEVE	EXTREME TEMPERATURE EXPOSURE	CURRENT RATING	FACTORY TEMPERATURE SETTING TOLERANCE (MOD. #3)	APPLICABLE MODIFICATIONS <i>(See Modifications and Special Features Section)</i>	APPLICABLE SPECIAL FEATURES																			
-100 to +400°F/ -73 to +204°C Ⓡ Ⓢ	Opens	Brass	8 to 10	90°/50°	<p>Unless otherwise specified, 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.</p> <p><b>UNITS THAT OPEN ON TEMPERATURE RISE</b> -100°F/-73°C indefinitely and 100°F/55°C above set point for one hour maximum</p> <p><b>UNITS THAT CLOSE ON TEMPERATURE RISE</b> -100 to +400°F/-73 to +204°C indefinitely and 500°F/260°C for one hour maximum</p> <p>-100 to +600°F/-73 to +316°C indefinitely and 700°F/370°C for one hour maximum</p>	<p>* <b>AC</b> 10 amps 120 volts</p> <p>5 amps 240 volts (non-inductive)</p> <p>DC ratings consult Fenwal</p>	<p><b>UNITS THAT OPEN ON TEMPERATURE RISE</b> (Indicated by the 4th and 5th digits of Catalog Number, i.e. 00 or 02)</p> <p>±5F° from +32 to +100°F</p> <p>±3F° or 2% of Setting Value (whichever is greater) From 100° to 600°F</p> <p><b>UNITS THAT CLOSE ON TEMPERATURE RISE</b> (Indicated by the 4th and 5th digits of Catalog Number, i.e. 21 or 23)</p> <p>±5F° or 3% of Setting Value (whichever is greater)</p>	1 2 3 4 14	31 34 35																			
	Closes			80°/45°																								
-100 to +600°F/ -73 to +316°C	Opens	300 Series S.S. Shell		110°/60°																								
	Closes			100°/55°																								
-100 to +400°F/ -73 to +204°C Ⓡ Ⓢ	Opens	Brass	8 to 10	80°/45°				<p><b>Temperature Offsets Due To Pressure (approx. only)</b></p> <table border="1"> <thead> <tr> <th>Pressure psi</th> <th>Set Point Offset</th> </tr> </thead> <tbody> <tr><td>100</td><td>+ 3F°/2C°</td></tr> <tr><td>200</td><td>+ 6F°/3C°</td></tr> <tr><td>300</td><td>+ 9F°/5C°</td></tr> <tr><td>400</td><td>+12F°/7C°</td></tr> <tr><td>500</td><td>+15F°/8C°</td></tr> </tbody> </table> <p>Collapsing pressure (brass shell) 1400 psi at room temp. Collapsing pressure (S.S. shell) 3500 psi at room temp.</p>	Pressure psi	Set Point Offset	100	+ 3F°/2C°	200	+ 6F°/3C°	300	+ 9F°/5C°	400	+12F°/7C°	500	+15F°/8C°	<p>* <b>AC</b> 10 amps 120 volts</p> <p>5 amps 240 volts (non-inductive)</p> <p>DC ratings consult Fenwal</p>	<p><b>UNITS THAT OPEN ON TEMPERATURE RISE</b> (Indicated by the 4th and 5th digits of Catalog Number, i.e. 00 or 02)</p> <p>±5F° from +32 to +100°F</p> <p>±3F° or 2% of Setting Value (whichever is greater) From 100° to 600°F</p> <p><b>UNITS THAT CLOSE ON TEMPERATURE RISE</b> (Indicated by the 4th and 5th digits of Catalog Number, i.e. 21 or 23)</p> <p>±5F° or 3% of Setting Value (whichever is greater)</p>	1 thru 14, 27	31 34 35				
	Pressure psi			Set Point Offset																								
100	+ 3F°/2C°																											
200	+ 6F°/3C°																											
300	+ 9F°/5C°																											
400	+12F°/7C°																											
500	+15F°/8C°																											
Closes	75°/40°																											
-100 to +600°F/ -73 to +316°C	Opens	300 Series S.S. Shell Brass Head	8 to 10	100°/55°					<p><b>UNITS THAT OPEN ON TEMPERATURE RISE</b> -100 to +400°F/-73 to +204°C indefinitely and 500°F/260°C for one hour maximum</p> <p>-100 to +600°F/-73 to +316°C indefinitely and 700°F/370°C for one hour maximum</p>	<p>* <b>AC</b> 10 amps 120 volts</p> <p>5 amps 240 volts (non-inductive)</p> <p>DC ratings consult Fenwal</p>	<p><b>UNITS THAT OPEN ON TEMPERATURE RISE</b> (Indicated by the 4th and 5th digits of Catalog Number, i.e. 00 or 02)</p> <p>±5F° from +32 to +100°F</p> <p>±3F° or 2% of Setting Value (whichever is greater) From 100° to 600°F</p> <p><b>UNITS THAT CLOSE ON TEMPERATURE RISE</b> (Indicated by the 4th and 5th digits of Catalog Number, i.e. 21 or 23)</p> <p>±5F° or 3% of Setting Value (whichever is greater)</p>	1 thru 14, 27	31 34															
	Closes			90°/50°																								
-100 to +400°F/ -73 to +204°C Ⓡ Ⓢ	Opens	Brass		8 to 10	80°/45°	<p><b>UNITS THAT OPEN ON TEMPERATURE RISE</b> -100 to +400°F/-73 to +204°C indefinitely and 500°F/260°C for one hour maximum</p> <p>-100 to +600°F/-73 to +316°C indefinitely and 700°F/370°C for one hour maximum</p>	<p>* <b>AC</b> 10 amps 120 volts</p> <p>5 amps 240 volts (non-inductive)</p> <p>DC ratings consult Fenwal</p>					<p><b>UNITS THAT OPEN ON TEMPERATURE RISE</b> (Indicated by the 4th and 5th digits of Catalog Number, i.e. 00 or 02)</p> <p>±5F° from +32 to +100°F</p> <p>±3F° or 2% of Setting Value (whichever is greater) From 100° to 600°F</p> <p><b>UNITS THAT CLOSE ON TEMPERATURE RISE</b> (Indicated by the 4th and 5th digits of Catalog Number, i.e. 21 or 23)</p> <p>±5F° or 3% of Setting Value (whichever is greater)</p>	1 thru 14, 27	31 34														
	Closes				70°/40°																							
-100 to +600°F/ -73 to +316°C	Opens	300 Series S.S. Shell Brass Head	8 to 10		100°/55°								<p><b>UNITS THAT OPEN ON TEMPERATURE RISE</b> -100 to +400°F/-73 to +204°C indefinitely and 500°F/260°C for one hour maximum</p> <p>-100 to +600°F/-73 to +316°C indefinitely and 700°F/370°C for one hour maximum</p>	<p>* <b>AC</b> 10 amps 120 volts</p> <p>5 amps 240 volts (non-inductive)</p> <p>DC ratings consult Fenwal</p>	<p><b>UNITS THAT OPEN ON TEMPERATURE RISE</b> (Indicated by the 4th and 5th digits of Catalog Number, i.e. 00 or 02)</p> <p>±5F° from +32 to +100°F</p> <p>±3F° or 2% of Setting Value (whichever is greater) From 100° to 600°F</p> <p><b>UNITS THAT CLOSE ON TEMPERATURE RISE</b> (Indicated by the 4th and 5th digits of Catalog Number, i.e. 21 or 23)</p> <p>±5F° or 3% of Setting Value (whichever is greater)</p>	1 thru 14, 27	31 34											
	Closes				90°/50°																							
-100 to +400°F/ -73 to +204°C Ⓢ Ⓣ	Opens	Brass		Terminal Block	125°/70°			<p><b>UNITS THAT OPEN ON TEMPERATURE RISE</b> -100 to +400°F/-73 to +204°C indefinitely and 500°F/260°C for one hour maximum</p> <p>-100 to +600°F/-73 to +316°C indefinitely and 700°F/370°C for one hour maximum</p>								<p>* <b>AC</b> 10 amps 120 volts</p> <p>5 amps 240 volts (non-inductive)</p> <p>DC ratings consult Fenwal</p>	<p><b>UNITS THAT OPEN ON TEMPERATURE RISE</b> (Indicated by the 4th and 5th digits of Catalog Number, i.e. 00 or 02)</p> <p>±5F° from +32 to +100°F</p> <p>±3F° or 2% of Setting Value (whichever is greater) From 100° to 600°F</p> <p><b>UNITS THAT CLOSE ON TEMPERATURE RISE</b> (Indicated by the 4th and 5th digits of Catalog Number, i.e. 21 or 23)</p> <p>±5F° or 3% of Setting Value (whichever is greater)</p>	1 3 16	31 34									
	Closes				75°/40°																							
-100 to +600°F/ -73 to +316°C	Opens	300 Series S.S. Shell Brass Head	Terminal Block		160°/90°													<p><b>UNITS THAT OPEN ON TEMPERATURE RISE</b> -100 to +400°F/-73 to +204°C indefinitely and 500°F/260°C for one hour maximum</p> <p>-100 to +600°F/-73 to +316°C indefinitely and 700°F/370°C for one hour maximum</p>	<p>* <b>AC</b> 10 amps 120 volts</p> <p>5 amps 240 volts (non-inductive)</p> <p>DC ratings consult Fenwal</p>	<p><b>UNITS THAT OPEN ON TEMPERATURE RISE</b> (Indicated by the 4th and 5th digits of Catalog Number, i.e. 00 or 02)</p> <p>±5F° from +32 to +100°F</p> <p>±3F° or 2% of Setting Value (whichever is greater) From 100° to 600°F</p> <p><b>UNITS THAT CLOSE ON TEMPERATURE RISE</b> (Indicated by the 4th and 5th digits of Catalog Number, i.e. 21 or 23)</p> <p>±5F° or 3% of Setting Value (whichever is greater)</p>	1 3 16	31 34						
	Closes				90°/50°																							
-100 to +400°F/ -73 to +204°C Ⓡ Ⓢ	Opens	Brass		6 to 8	80°/45°																<p><b>UNITS THAT OPEN ON TEMPERATURE RISE</b> -100 to +400°F/-73 to +204°C indefinitely and 500°F/260°C for one hour maximum</p> <p>-100 to +600°F/-73 to +316°C indefinitely and 700°F/370°C for one hour maximum</p>	<p>* <b>AC</b> 10 amps 120 volts</p> <p>5 amps 240 volts (non-inductive)</p> <p>DC ratings consult Fenwal</p>	<p><b>UNITS THAT OPEN ON TEMPERATURE RISE</b> (Indicated by the 4th and 5th digits of Catalog Number, i.e. 00 or 02)</p> <p>±5F° from +32 to +100°F</p> <p>±3F° or 2% of Setting Value (whichever is greater) From 100° to 600°F</p> <p><b>UNITS THAT CLOSE ON TEMPERATURE RISE</b> (Indicated by the 4th and 5th digits of Catalog Number, i.e. 21 or 23)</p> <p>±5F° or 3% of Setting Value (whichever is greater)</p>	1 2 3 4 14 27	31 34 35			
	Closes				75°/40°																							
-100 to +600°F/ -73 to +316°C	Opens	300 Series S.S. Shell Brass Head	6 to 8		100°/55°																			<p><b>UNITS THAT OPEN ON TEMPERATURE RISE</b> -100 to +400°F/-73 to +204°C indefinitely and 500°F/260°C for one hour maximum</p> <p>-100 to +600°F/-73 to +316°C indefinitely and 700°F/370°C for one hour maximum</p>	<p>* <b>AC</b> 10 amps 120 volts</p> <p>5 amps 240 volts (non-inductive)</p> <p>DC ratings consult Fenwal</p>	<p><b>UNITS THAT OPEN ON TEMPERATURE RISE</b> (Indicated by the 4th and 5th digits of Catalog Number, i.e. 00 or 02)</p> <p>±5F° from +32 to +100°F</p> <p>±3F° or 2% of Setting Value (whichever is greater) From 100° to 600°F</p> <p><b>UNITS THAT CLOSE ON TEMPERATURE RISE</b> (Indicated by the 4th and 5th digits of Catalog Number, i.e. 21 or 23)</p> <p>±5F° or 3% of Setting Value (whichever is greater)</p>	1 2 3 4 14 27	31 34 35
	Closes				90°/50°																							

U.L. File No. E18974

Ⓡ Recognized under the Component Program of Underwriters Laboratories, Inc. (XAPX2)

Ⓢ Underwriters Laboratories Listed (XAPX)

CSA File No. LR7378

Ⓣ Certified by Canadian Standards Association (Class 4813.02)

\* Ⓡ, U.L. and CSA units rated for AC operation only.

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## 200 to 1100°F/93 to 593°C

TEMPERATURE RANGE	CONTACT OPERATION ON TEMP. RISE	SHELL AND HEAD MATERIAL	STANDARD LEAD WIRE LENGTH (INCHES)	APPROX. DEGREES CHANGE PER FULL TURN OF ADJUSTING SLEEVE	EXTREME TEMPERATURE EXPOSURE	CURRENT RATING	FACTORY TEMPERATURE SETTING TOLERANCE (MOD. #3)	APPLICABLE MODIFICATIONS AND SPECIAL FEATURES <i>(See Modifications and Special Features Section)</i>
300 to 1100°F/ 149 to 593°C	Opens	S.S. Shell Brass Head	18	165°F/ 90°C	-100°F/-73°C indefinitely, and 100°F/55°C above set point for 1/2 hour maximum.	AC 25 amps 120 volts  12.5 amps 240 volts	±4% of setting	1 2 3 5 11 12 13  <b>NOTE: Mod. 4 is standard with this unit.</b>
300 to 1100°F/ 149 to 593°C	Opens  Closes	All S.S.	8		Ambient temperature surrounding switch shell should not exceed 600°F/315°C	DC ratings consult Fenwal		1 2 3 14  <b>NOTE: Mod. 4 is standard with this unit.</b>

## -100 to +600°F/-73 to +316°C

-100 to +500°F/ -73 to +260°C	Opens  Closes	All Type 316 S.S.	6 to 8	100°F/ 55°C	-100°F/-73°C indefinitely, and 100°F/55°C above set point for one hour maximum.	AC 10 amps 120 volts  5 amps 240 volts	±5°F from -100 to 100°F  ±3°F or 2% of Setting Value (whichever is greater) from 100 to 600°F	1 2 3 4 14
-100 to +600°F/ -73 to +316°C					-100°F/-73°C indefinitely, and 700°F/370°C for one hour maximum.	DC ratings consult Fenwal	±5°F or 3% of Setting Value (whichever is greater)	<b>SPECIAL FEATURE</b> 31

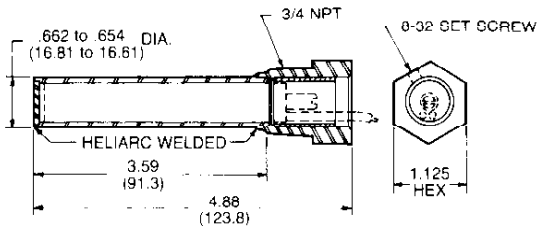
**TOLERANCES:** Decimal dimensions ±.015 unless otherwise specified.

### RATINGS

Unless otherwise specified, all ratings apply to noninductive loads, such as heaters or resistors. Tungsten filament lamps have an inrush of 10 to 15 times the steady state current. Do not exceed switch ratings at any time.

## PROTECTIVE WELLS

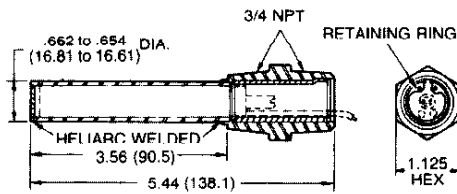
### For use with 170XX Cartridge Type THERMOSWITCH Controllers



**Catalog No. 11201-0**  
**Hex Head Well**  
(321 Stainless Steel Well & Head)

**Applicable Modifications:**  
1 Special Marking

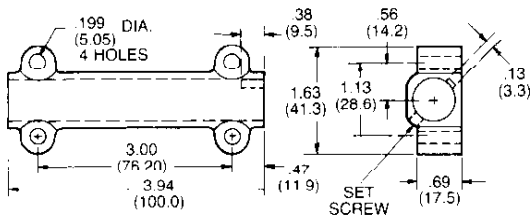
**Applicable Special Features:**  
31A Extended Shell



**Catalog No. 11204-0**  
**Coupling Head Well**  
(321 Stainless Steel Well & Head)

**Applicable Modifications:**  
1 Special Marking

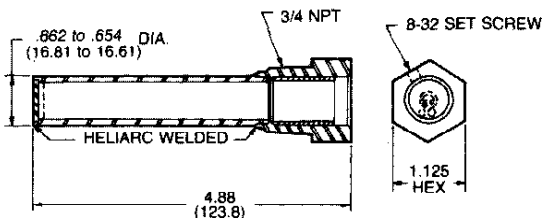
**Applicable Special Features:**  
31A Extended Shell



**Catalog No. 11100-2**  
**Aluminum Surface Mounting Well**

For use with  
5/8 inch diameter Cartridge  
THERMOSWITCH Controller  
Series 17000

### For use with 172XX and 173XX THERMOSWITCH Controllers



**Catalog No. 11208-0**  
**Low Pressure Hex Head Well**  
(321 Stainless Steel Well & Head)

**Applicable Modifications:**  
1 Special Marking

**Applicable Special Features:**  
31A Extended Shell

In many applications involving the control of liquids and gases, the use of a well is recommended.

When the removal of a Hex or Coupling Head THERMOSWITCH controller would require draining of the container, the use of a well assembly permits removal of the controller at any time without other disturbances.

When surrounding ambients are subject to extreme changes affecting THERMOSWITCH control, the well makes it possible to insert the THERMOSWITCH controller completely into the medium being controlled thereby eliminating these ambient temperature effects or "head effect."

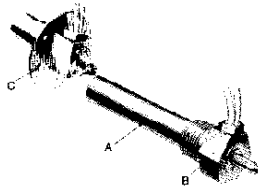
A well also offers protection in applications where fluids have a corrosive effect on the brass shell of the THERMOSWITCH controller.

**NOTE:** Certain gases or liquids (including water at elevated temperatures) could be corrosive and/or cause electrolytic action, which could severely shorten the life of the controller. Where corrosion or electrolysis is suspect, the use of stainless steel heliarc welded thermowells or various platings or coatings may increase controller life. The rate of corrosion or electrolysis is influenced by a great many system parameters such as chemical makeup and temperature of the solution, stray electric currents, etc. Consult the supplier of your chemicals or Fenwal for suggestions.

In addition, use a well to protect the THERMOSWITCH controller from external forces or blows which could affect its operation.

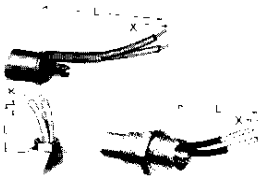
# MODIFICATIONS

## 1 SPECIAL MARKING



Special marking may be rubber stamped in indelible ink at points A, B, or C. Amount of marking is limited to the space available. Specify location of marking desired.

## 2 EXTENDED LEAD WIRES

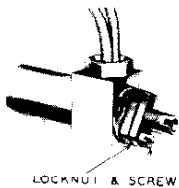


Lead wires may be extended to any length. Wire lengths are specified at that portion of lead wire outside of THERMOSWITCH controller, indicated by dimension "L". Special lead wire stripping may also be obtained by specifying length shown as dimension "X".

## 3 FACTORY TEMPERATURE SETTING

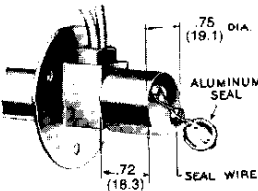
The controller may be preset at Fenwal to any temperature within its listed range to a minimum of 32°F (0°C). Unless this modification is specified, units are preset at approximately 75°F (25°C). Modification 4 is recommended when ordering a factory set unit to preclude a possible shift in set point due to mishandling.

## 4 TEMPERATURE RESTRAINING DEVICE



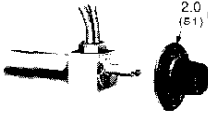
A restraining device may be added to the THERMOSWITCH controller to secure the temperature adjustment sleeve after the controller has been calibrated. This modification deters tampering with the setting. It also minimizes the possibility of a shift in calibration under conditions of severe vibration.

## 5 TAMPER-PROOF CAP

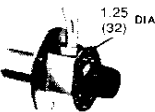


A tamper-proof cap can be furnished to prevent tampering with a THERMOSWITCH controller equipped with Modification 4 above.

## 6 DIAL AND KNOB

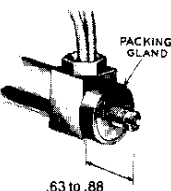


**6A** A large dial and knob may be added to certain THERMOSWITCH controllers. Graduations on dial are marked from "1" to "7" for adjustment to higher or lower temperature. Controllers may be ordered unset or factory preset. Dial will be set on NO. 4 position unless otherwise specified.



**6B** Same as 6A above except small dial and knob.

## 8 MOISTURE RESISTANT SEAL



**8A** Under certain conditions where there is excessive moisture or vapor, a moisture resistant seal may be added to protect the interior of the THERMOSWITCH controller from seepage. Modification 13 should be ordered in conjunction with this modification.

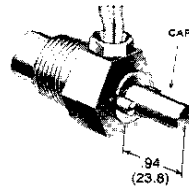
63 to 88  
(15.8 to 22.2)

**8B** Same as 8A above except seal is four hole type so dial and knob may be used. Modification 13 should be ordered in conjunction with this modification.

## MODIFICATIONS WHICH CANNOT BE COMBINED.

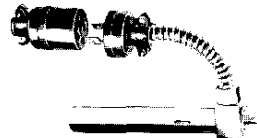
MOD	4	5	6	8	10	14
4						
5						
6						
8						
10						
14						

## 10 MOISTURE RESISTANT TAMPER-PROOF CAP



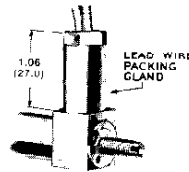
To seal a THERMOSWITCH controller against moisture and tampering, a Moisture Resistant tamper-proof cap may be mounted over the temperature adjusting sleeve. It may be used with unset or factory preset units.

## 12 CONNECTOR



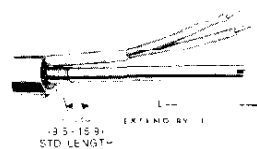
A terminal plug connector may be added to the end of the wires. Connector may be ordered with or without armored cable (Modification 11) as shown.

## 13 PACKING GLAND ON LEAD WIRES



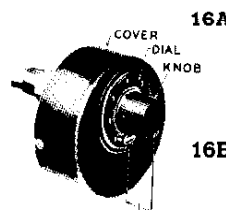
In installations where moisture may enter THERMOSWITCH controller around lead wires, a packing gland is recommended. Modification 8 should be used in conjunction with this modification.

## 14 EXTENDED TEMPERATURE ADJUSTING SLEEVE



Adjustment sleeve extensions are available only in multiples of one inch. When ordering, the length specified is the "extended by" length "L". For example, if the standard adjusting sleeve length for the controller ordered is 3/8 to 5/8 inch, and a 4 inch extension is ordered, the overall length will be 4-3/8 to 4-5/8 inches. Minimum ordering quantities apply.

## 16 DIAL AND KNOB OUTSIDE COVER



**16A** A dial and knob may be added to the outside of junction box on non-UL listed Series 178XX units. Refer to Modification 6A for further information.

**16B** A Dial and Knob may be added to the outside of junction box on UL listed Series 178XX units.

Specify THERMOSWITCH unit catalog number to obtain appropriate adjusting screw.

Minimum order quantities apply.

## SERIES 15000, 16000, 17000 and 18000

### SPECIAL FEATURES

When Special Features are specified, THERMOSWITCH controllers are assigned a special catalog number. As a result, THERMOSWITCH controllers as received may bear a different catalog number than the one specified on the customer order.

#### 31 EXTENDED SHELL THERMOSWITCH CONTROLLERS

In applications where a standard THERMOSWITCH controller is too short to reach the medium to be controlled, the shell length may be extended. Extension must be ordered in increments of 1 inch beyond standard length.

#### 31A EXTENDED SHELL PROTECTIVE WELLS

Wells may be extended in increments of one inch. The THERMOSWITCH controller selected must also be extended equally in length.

#### 34 PLATING OF ALL EXPOSED BRASS PARTS

To overcome certain corrosive conditions, all exposed brass parts may be plated with tin, zinc, or nickel. Specify S.F. 34 and plating material.

**NOTE:** Plating restricts the maximum temperature of the controllers as follows.

Tin	300°F (149°C)
Nickel	600°F (316°C)
Zinc	400°F (204°C)

#### 35 POLYVINYL CHLORIDE (PVC) LEAD WIRES

PVC insulated wire can be supplied as a moisture-resistant lead wire for those applications where the operating temperature does not exceed 175°F (80°C).

#### ARMORED CABLE

SF 01-982122-XXX 5/8 diameter units  
SF 01-982123-XXX 13/16 diameter units

Armored Cable provides protection for the leadwires. (Cable is not moisture resistant.) Leadwires will be 2 inches longer than cable if cable is over 12 inches unless otherwise specified. Specify cable length "L". This feature includes a ground wire provision as required by approval agencies.

#### HOW TO ORDER

Order desired controller and/or protective well by catalog number. Specify applicable Modifications and/or Special Features of each by number.

*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

This literature is provided for informational purposes only. KIDDE-FENWAL, INC. assumes no responsibility for the product's suitability for a particular application. The product must be properly applied to perform as described herein.

If you need more information on this product, or if you have a question, contact KIDDE-FENWAL, INC. Ashland, MA 01721. (508) 881-2000

# FENWAL®

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