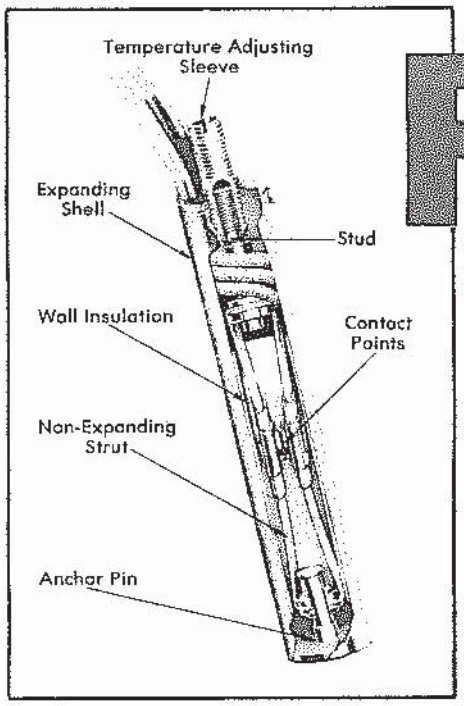

FENWAL

THERMOSWITCH® TEMPERATURE CONTROLLERS

INSTRUCTIONS

GENERAL INFORMATION

The shell of each THERMOSWITCH unit contains the catalog number, the current rating, the temperature range and the contact arrangement.

The fifth digit of the catalog number describes whether contacts open or close on temperature rise. If contacts open on temperature rise (regular unit), the fifth digit of the catalog number is an even number such as 17000, 17102, etc. If contacts close on temperature rise (universal unit), the fifth digit is an odd number such as 17021, 17023, etc.

UL Component recognized units will either have a "4" as the first digit (47002, etc.) or will bear the UL logo and utilize a 17000 series catalog number (17021, etc.).

If the fourth digit is other than "2" or "7" (such as 17000, 17050, etc.) it is tension operated. Tension operated units may be subjected to momentary temperature exposure of 100°F above their set point within their temperature range, or subjected to any temperature below their set point without damage.

If the fourth digit is "2" or "7" (such as 17021, 17071, etc.) it is compression operated. Inverse compression units are recommended if overshoots are to be encountered. Low temperature units can be overshot to 500°F and high temperature units (−100 to 600°F) overshot to 700°F for intervals not exceeding one hour.

INSTALLATION

Fenwal THERMOSWITCH® units are supplied in five basic head configurations — Cartridge, Block Head, Hex Head, Coupling Head and Circular Flange.

To avoid restricting shell expansion when making installations in solid metal blocks, a 5/8" diameter reamed hole for 5/8" diameter units or a 13/16" diameter reamed hole for 13/16" diameter heavy duty units, is recommended. See specific controller style listing for additional installation instructions.

Cartridge [Style 1] (Includes moisture resistant high and low temperature units, A and C.) Hole should have short spline to receive the 1/8" diameter locating pin. This prevents the unit from rotating when the adjusting sleeve is turned. It may also be used for surface control if inserted into a Fenwal surface mounting block (Cat. No. 11100-2).

Block Head [Style 2] — is mounted in a similar manner to the cartridge type. If the unit is to be inserted into a reamed hole, two short pins should be mounted on either side of the hole. The pins should rest against the sides of the block head to prevent rotation of the unit.

Hex and Coupling Head [Styles 3 and 4] (includes hex-head moisture resistant high and low temperature units, B and D) — can be installed like any pipe fitting.

Circular Flange [Style 5]— Three holes in flange allow for easy mounting on any flat surface.

If the threaded units are installed in a pipe tee, the tee should be large enough to allow adequate circulation of the fluid around the temperature sensitive section of the unit.

MOUNTING STYLES

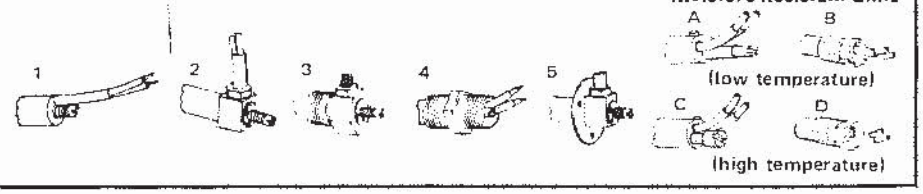

TABLE I — TORQUE

Max. Torque	THERMOSWITCH® Controller types
35 ft. lbs.	5/8" Dia. Standard with N.P.T. *
70 ft. lbs.	13/16" Dia. Heavy Duty with N.P.T. **

* 4 ft. lbs.	When Teflon tape Lubricant is used.
**8 ft. lbs.	

WARNING: *Excessive torque may change temp. settings.*

CAUTIONS!

DO connect THERMOSWITCH controller leads in series with the load and power supply.

DO be certain that there is sufficient but not excess room for the installed THERMOSWITCH unit to expand in diameter and length.

DO use stainless steel heliarc welded thermowells, (Series 11100, 11200) or various platings or coatings which may increase controller life where corrosion or electrolysis is suspect.

DO insulate head of the THERMOSWITCH unit where large external temperature variation may occur. This precaution is not necessary on the junction box type. (Series 17700, 17800).

DO prevent internal damage by mechanically presetting regular tension units (those with catalog number containing fourth digit other than 2 or 7) to approximate required elevated temperature before inserting into process. Preset by turning adjusting sleeve counterclockwise following the adjustment rate information shown on Page 2, Table II.

DON'T immerse your unit in liquids or vapors unless it was specified for that job.

DON'T seal head with silicone materials.

DON'T exceed the ratings indicated on THERMOSWITCH unit shell.

DON'T thermally shield unit from medium being controlled.

DON'T *remove adjusting screw or turn adjusting screw in further than necessary for desired operation. This action may permanently damage the unit and may void standard Fenwal warranty!*

DON'T oil your unit. Oil around adjusting screw will flow inside, contaminating contacts.

DON'T allow moisture buildup in head cavity area of 37X0X0-000 Moisture Resistant Units. Where excessive moisture is a problem, specify Special Feature 01-982039-00X when ordering.

DON'T try to repair unit yourself.

DON'T handle unit with pliers or force it into position either by hand or tools, or apply excessive torque in tightening threaded units.

DON'T subject shell of unit to deformation.

DON'T over-torque threaded units.

NOTE: *Certain gases or liquids including water at elevated temperature could be corrosive and may also cause electrolytic action, which could severely shorten the life of the controller.*

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 the factory for suggestions.