

ACCESSORIES *air / oil heat exchangers*

ELECTRICAL TEMPERATURE CONTROLLER WITH BULB WELL ASSEMBLY (for Air/Oil Coolers)

SPECIFICATIONS:

- A) Material: Stainless Steel
 B) Power Limits:
 1) For three phase motor operation, use only with a magnetic starter, 125 VA max. (VA =volts x amps)
 2) For pilot duty, 125 VA max.
 120v AC/8.0 amps max 230v AC/5.1 amps max
 277v AC/4.2 amps max 460v AC/2.0 amps max
 3) Temperature operating range: -40°F to 212°F.

Part Number	Description
310-4011 (old part number 310-4001)	TC-511 with 6-Foot Capillary Tube & Bulb Well
310-4002 Discontinued	TC-511 with 20-Foot Capillary Tube & Bulb Well
310-2025 (old part number 310-2005)	Replacement Bulb Well TC-511

APPLICATIONS (Temperature Controller)

The A421 Series Electronic Temperature Controls are single-stage, electronic temperature controls with a single-pole, double-throw (SPDT) output relay. A421 controls feature a backlit LCD with adjustable brightness and three-button touchpad interface that can be set up to restrict user adjustments. An LED indicates the output relay's On/Off status. A421 controls have simple On and Off temperature settings for heating or cooling, an adjustable anti-short cycle delay, temperature setback, and sensor offset capability.

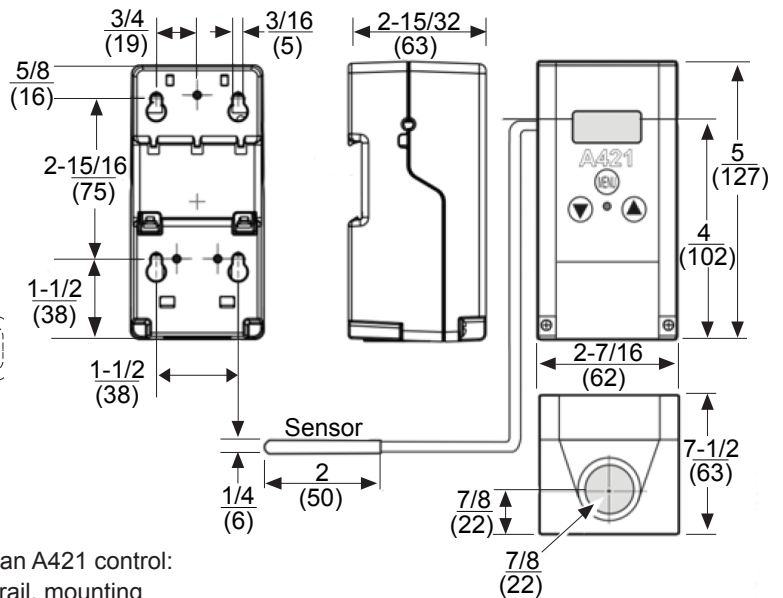
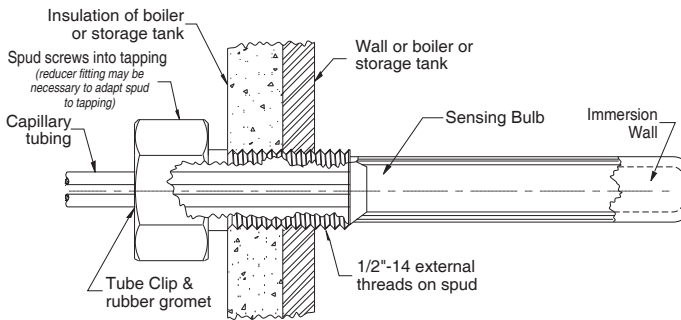
INSTALLATION

When installing this product:

1. Read instructions carefully. Failure to follow the instructions could damage the product or cause a hazardous condition.
2. Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.
3. Installer must be a trained, experienced service technician.
4. After installation is complete, check out product operation as provided in the instructions.

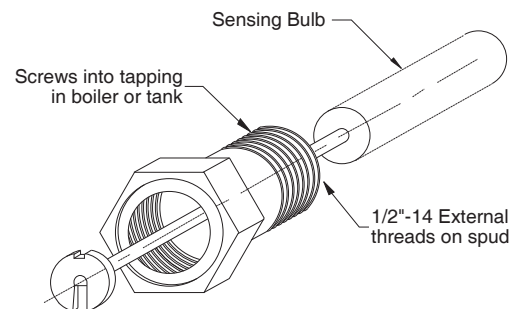
ELECTRICAL RATINGS:

See Installation Instruction Manual



LOCATION AND MOUNTING.

- Observe the following guidelines when locating and mounting an A421 control:
- Ensure that the mounting surface can support the control, DIN rail, mounting hardware, and any (user-supplied) panel or enclosure.
 - Mount the control in a vertical, upright orientation wherever possible. DIN rail mounting is strongly recommended for Type 1 controls.
 - In direct-mount applications, mount the control on a flat and even surface.
 - Mount the control in a location free of corrosive vapors and observe the ambient operating conditions listed in Technical Specifications for both the A421 control and the A99 sensor.
 - Allow sufficient space for connecting and routing wires, viewing the LCD, and using the touchpad.
 - Do not mount the control on surfaces that are prone to vibration or in a location where high-voltage relays, motor starters, other sources of electromagnetic emissions, or strong radio frequency may cause interference.
 - Do not install the control in an airtight enclosure.
 - Do not install heat generating devices with the control in an enclosure that may cause the ambient temperature to exceed 150°F (66°C).



OPERATION

See Installation Instruction Manual

“3-Way” Thermostatic Valve

Thermostatic valves utilize the principle of expanding wax, which in the semi-liquid state undergoes large expansion rates within a relatively narrow temperature range. The self contained power element activates a stainless steel sliding valve which provides positive three-way actions. All thermostatic valves are factory set at predetermined temperatures; no further adjustments are necessary. A wide range of temperatures are available for water and oil temperature control applications.

On starting, the total fluid flow is in a by-pass mode. As fluid temperature rises to the control range some fluid is diverted to the cooling system. As fluid temperature continues to increase, more flow is diverted, and when in a fully stroke condition all fluid flow is positively directed to the cooling system. Thermostatic valves may be used for either mixing or diverting applications. In normal operation fluid temperatures are controlled to within a few degrees.

Standard thermostatic valve housings are made from high quality grey iron castings.



Part Number	Description		Part Number	Description	
	Temp. Setting	Size NPT		Temp. Setting	Size NPT
310-7029	100 °F	1/2"	310-7014	100 °F	1-1/2"
310-7023	110 °F		310-7034	110 °F	
310-7030	120 °F		310-7035	120 °F	
310-7043	140 °F		310-7012	140 °F	
310-7006	160 °F		310-7001	160 °F	
310-7031	100 °F	3/4"	310-7002	100 °F	2"
310-7032	110 °F		310-7024	110 °F	
310-7022	120 °F		310-7036	120 °F	
310-7042	140 °F		310-7020	140 °F	
310-7007	160 °F		310-7010	160 °F	
310-7033	100 °F	1"	310-7037	100 °F	3"
310-7026	110 °F		310-7038	110 °F	
310-7028	120 °F		310-7039	120 °F	
310-7021	140 °F		310-7041	140 °F	
310-7008	160 °F		310-7040	160 °F	

Adjustable Electrical Temperature Switch (see page 224)

Part Number	Description
310-4011	TC-511 with 6-Foot Capillary Tube & Bulb Well
310-4002	TC-511 with 20-Foot Capillary Tube & Bulb Well
310-2025	Replacement Bulb Well TC-511