

## CONTROL TERMINOLOGY

Following are some of the terms used in this catalog, as used in the control industry:

**ANTICIPATION, HEATING:** The ability of a thermostat to terminate heating at a lower temperature and in advance of the time that the air temperature at the thermostat would normally cause the thermostat to cycle heating.

**BRITISH THERMAL UNIT (BTU):** A measure of heat quantity. One BTU is the amount of heat required to raise the temperature of one pound of water from 62° to 63°F. BTUH = British Thermal Units per hour.

**CALIBRATION:** The temperature at the cut-in point as measured at the thermostat for a specific scale setting.

**CONTROL POINT:** The mean value of the air temperature at the thermostat under specified operating conditions.

**CURRENT:** The flow of electricity - the flow of electrons in an electrical conductor. **ALTERNATING CURRENT** - current which periodically reverses its flow as the polarity of its source terminals reverse. This is ordinary household current. **DIRECT CURRENT** - current which flows in one direction only, as from a dry cell or storage battery.

**CUT-IN POINT:** The air temperature at which the thermostat initiates action of contacts.

**CYCLE:** The time which elapses between successive cut-in and out points.

**CYCLE RATE:** The number of cycles per hour.

**DESIGN TEMPERATURE:** The outdoor temperature used in designing a heating system for 100% on time - usually 15 degrees higher than the lowest officially recorded local temperature.

**DIFFERENTIAL, MANUAL:** The difference in scale settings between the cut-in and cut-out points determined by manually raising and lowering the thermostat setting with no electrical load.

**DIFFERENTIAL, OPERATING:** The difference between cut-in and cut-out points as measured at the thermostat under specified operating conditions.

**DOUBLE POLE THERMOSTAT:** A thermostat which has two switches. One is a thermostat and the other is an OFF switch. Only in the OFF position are both switches disconnected for a thermal off.

**DROOP:** The deviation in the cut-in point which results from a change in the percentage of on time to total time per cycle.

**FUSIBLE LINK:** A small fuse used in individual heater element circuits. They are designed to break the circuit at a temperature above the setting of the normal operating limit control, thus they act as backup limit devices.

**OFFSET:** The intentional temperature difference between the cut-in point and the scale setting, with no electrical load.

**PARALLEL CIRCUIT:** A circuit offering two or more paths for current flow.

**RELATIVE HUMIDITY:** The ratio of the actual amount of water vapor in the air to the amount it could contain if saturated - the percentage of saturation.

**RATING, ELECTRICAL:** The maximum specified electrical load of the thermostat.

**RELAY, THERMAL:** A switching relay using a resistance heater to warp a bi-metal which provides the force to actuate the load by a switch. Time is required for the bi-metal to heat sufficiently, thus providing a desired time delay before switching ON or OFF.

**RESISTANCE:** The opposition of a conductor to the flow of current through it - often compared to friction which opposes mechanical motion. Both resistance and friction transform energy into heat.

**SERIES CIRCUIT:** A circuit in which the current has only one path to follow.

**SINGLE POLE THERMOSTAT:** A thermostat that has only one switch. Can be used on 120 or 240 Volt. Low setting is typically around 40°. Normally does not have an off position unless you feel a click when rotated completely counterclockwise. Then, the low setting is below zero degrees Fahrenheit.

**THIRD WIRE:** An extra wire used to energize an anticipator, relay or display, creating potential.

**WATT:** In a resistance circuit the product of voltage times current. Watts express the heat output of a resistance - a measure of electrical power. One watt is equivalent to 3.413 BTUH, a measurement of heat output.