

2.4 CONTROL ACTIONS

2.4.1 TEMPERATURE CONTROL

This the first function of a thermostat. A temperature control action contact is a contact that will cycle periodically, by opening and closing an electrical circuit. This is not a safety device. Contacts must withstand a high number of cycles.

2.4.2 THE AUTOMATIC RESET

The automatic reset is a temperature limiter function that does not require, in case of tripping, the intervention of an operator. This type of contact is intended to warn of a malfunction and avoid product destruction if the control device is not working or broken. It resets when the temperature returns to permitted limits.

The current number of cycles of operation of this type of action is between 300 and 10 000.

2.4.3 THE MANUAL RESET

A manual reset is a temperature limiting function, which requires, in case of tripping, the intervention of an operator to reset the device. This type of contact is intended to warn of a malfunction and protect the product by shut off the electrical power. The reset can be done when the temperature is returned to the authorized limits. Manual reset can be accessed or hidden. In general, they cannot be reset without using a tool or without removing a cover or a cap.

The current number of cycles of operation of this type of action is between 300 and 10 000.

2.4.4 ELECTRICAL RESET

This is the same function as above, but there is no reset button. It automatically resets after disconnection of the power supply.

2.4.5 RESET BY TEMPERATURE DROP

Temperature drop reset is an automatic reset after a significant drop in temperature, generally close to the ambient temperature. This solution is very little used.

2.4.6 THE "ONE SHOT"

The "one shot" is a type of contact that can only be opened once. Its use is typically that of ultimate safety device, which definitely cut the power supply. Restarting the application needs a full replacement of it. Its number of operating cycles is 1. This function can be performed by metal alloy melting, plastic pellet melting, glass bead break, triggering of a bimetal disc whose return to the starting position is not possible even in the coldest ambient temperatures

2.4.7 FAIL SAFE

Fail safe is a positive auto control of the device. Any leakage or breakage of the temperature sensing device causes the electrical power shut-off. This function is difficult to define in bimetal thermostats (discs, rod, bimetal), but for thermostat using a bulb and capillary assembly, it defines the mode of operation when it leaks.

The fail-safe mechanisms in bulb and capillary thermostats

