

5. Terminology and vocabulary

Standards EN60730 and EN 60335 define, sometimes with differences, the vocabulary to use. However, it is often different from that used in practice.

Usual vocabulary:

Set point: The value set on the temperature control device, corresponding to the temperature to reach

Differential: the temperature difference between the opening and closing of the contact

Snap action: contacts open and close instantly

Manual reset: action to turn on by manual intervention, to heating position contacts opened by a temperature rise that did not automatically return to closed position when the temperature drops

Automatic reset: Contact that is automatically closed when the temperature drops

Sensing control: automatic control in which initiation is by an element sensitive to the activating temperature

Definitions of the different thermostatic systems according to EN60335-1

§3.7.1 Thermostat: temperature sensing system of which the operating temperature may be fixed or adjustable and which, during normal operation, maintains the temperature of the controlled part within certain limits by automatic opening and closing of a circuit

§3.7.2 temperature limiter: temperature-sensing device, the operating temperature of which may be either fixed or adjustable and which during normal operation operates by opening or closing a circuit when the temperature of the controlled part reaches a predetermined value

NOTE A temperature limiter does not make the reverse operation during the normal duty cycle of the appliance. It may or may not require manual resetting.

temperature limiter: temperature sensing control which is intended to keep a temperature below or above one particular value during normal operating conditions and which may have provision for setting by the user

A temperature limiter may be of the automatic or of the manual reset type. It does not make the reverse operation during the normal duty cycle of the appliance.

§3.7.3 Thermal cut-out : device which during abnormal operation limits the temperature of the controlled part by automatically opening the circuit,... and is constructed so that its setting cannot be altered by the user.

thermal cut-out: temperature sensing control intended to keep a temperature below or above one particular value during abnormal operating conditions and which has no provision for setting by the user

A thermal cut-out may be of the automatic, manual reset or non-resettable type.

§3.7.4 self-resetting thermal cut-out: thermal cut-out that automatically restores the current after the relevant part of the appliance has cooled down sufficiently

§3.7.5 non-self-resetting thermal cut-out: thermal cut-out that requires a manual operation for resetting, or replacement of a part, in order to restore the current

NOTE Manual operation includes disconnection of the appliance from the supply mains.

§3.7.6 Protective device: device, the operation of which prevents a hazardous situation under abnormal operation conditions

§3.7.7 Thermal link: thermal cut-out which operates only once and requires partial or complete replacement

Fail safe temperature limiter: the fail safe in a thermostat is defined by the EN60730-2-9 Standard § 6.4.3.101, as a temperature control device wherein a leakage of the filling fluid does not increase the temperature set point. More generally a system is said to be failsafe, when a loss of fluid (including electricity) leads the equipment to a stable safety state. The safety state must be maintained over time.

Thermostats recommended applications:

IEC (EN) 60730-1 Standards « Automatic electrical controls for household and similar use» and especially IEC (EN)

60730-2-9-(2008) : « Particular requirements for temperature sensing controls» are the standards that define the functional characteristics of thermostats. Appendix EE of the latest version of the standard describes all recommended applications for these devices.

5.2 COMMON VOCABULARY USED TO DESIGNATE A THERMOSTAT

Dozens of names are used by the customer to designate thermostats. We can mention:

aquastat, airstat, bimetal sensor, temperature sensor, temperature switch, temperature detector, thermal sensor, thermal switch, temperature limiter, thermal pellet, pellet thermostat, thermal protector, temperature controller, sensor, temperature probe , temperature sensor, thermostat

Some brands have passed into the vocabulary:

Klixon: Texas trademark instrument means a bimetal disc thermostat.

Combistat: Stork trademark refers to a contact thermometer

Vigitherme: Heito trademark refers to a thermostat bimetal disc.

Ipsotherm: Comepa trademark refers to a thermostat bimetal disc.

Calorstat: brand used by Vernet thermostat, refers to an automotive water circuit valve.

