

**General information about**  
**TEMPERATURE CONTROLLERS CLASSIFICATION**  
**according to ERP DIRECTIVE 2009/125/EC**

The European Union has set three energy and climate goals for year 2020 called the 20/20/20 goal. The goal means 20% increase in energy efficiency, 20% reduction of CO<sub>2</sub> emissions, and 20% renewables by 2020.

To be able to fulfil these goals the two following directives are very important:

- Directive 2009/125/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products
- Directive 2010/30/EU of the European Parliament and of the Council of 19 May 2010 on the indication by labelling and standard product information of the consumption of energy and other resources by energy-related products.

**Classification \* of temperature controllers sold under the ESBE brand**

Product type	Class							
	I	II	III	IV	V	VI	VII	VIII
90C-1A			•					
90C-1B			•					
90C-1C							•	
90C-3B			•					
90C-3C							•	
CRB100				•				
CRC100			•					
CRD100							•	
CUA100				•				
TFC100					•			
TMA110	•							
TPx100	•							
TPx200	•							

\* acc. to classification described in The Official Journal of the European Union 2014/C 207/1

**The classification of temperature controllers are described in The Official Journal of the European Union 2014/C 207/1**

Definition of temperature controls classes

**Class I On/off Room Thermostat:**

A room thermostat that controls the on/off operation of a heater. Performance parameters, including switching differential and room temperature control accuracy are determined by the thermostat's mechanical construction.

**Class II Weather compensator control, for use with modulating heaters:**

A heater flow temperature control that varies the set point of the flow temperature of water leaving the heater dependant upon prevailing outside temperature and selected weather compensation curve. Control is achieved by modulating the output of the heater.

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- Class III Weather compensator control, for use with on/off output heaters:**  
 A heater flow temperature control that varies the set point of the flow temperature of water leaving the heater dependant upon prevailing outside temperature and selected weather compensation curve. Heater flow temperature is varied by controlling the on/off operation of the heater.
- Class IV TPI room thermostat, for use with on/off output heaters:**  
 An electronic room thermostat that controls both thermostat cycle rate and in-cycle on/off ratio of the heater proportional to room temperature. TPI control strategy reduces mean water temperature, improves room temperature control accuracy and enhances system efficiency.
- Class V Modulating room thermostat, for use with modulating heaters:**  
 An electronic room thermostat that varies the flow temperature of the water leaving the heater dependant upon measured room temperature deviation from room thermostat set point. Control is achieved by modulating the output of the heater.
- Class VI Weather compensator and room sensor, for use with modulating heaters:**  
 A heater flow temperature control that varies the flow temperature of water leaving the heater dependant upon prevailing outside temperature and selected weather compensation curve. A room temperature sensor monitors room temperature and adjusts the compensation curve parallel displacement to improve room comfort. Control is achieved by modulating the output of the heater.
- Class VII Weather compensator and room sensor, for use with on/off output heaters:**  
 A heater flow temperature control that varies the flow temperature of water leaving the heater dependant upon prevailing outside temperature and selected weather compensation curve. A room temperature sensor monitors room temperature and adjusts the compensation curve parallel displacement to improve room comfort. Heater flow temperature is varied by controlling the on/off operation of the heater.
- Class VIII Multi-sensor room temperature control, for use with modulating heaters:**  
 An electronic control, equipped with 3 or more room sensors that varies the flow temperature of the water leaving the heater dependant upon the aggregated measured room temperature deviation from room sensor set points. Control is achieved by modulating the output of the heater.

**Contribution of temperature controls to seasonal space heating energy efficiency of packages of space heater, temperature control and solar device or of packages of combination heater, temperature control and solar device**

<b>Class No.</b>	<b>I</b>	<b>II</b>	<b>III</b>	<b>IV</b>	<b>V</b>	<b>VI</b>	<b>VII</b>	<b>VIII</b>
Value in %	1	2	1,5	2	3	4	3,5	5