VDMA Services GmbH

Scheme

TELL - Thermostatic Efficiency Labelling

Classification scheme for energy efficiency labelling of thermostatic radiator valves
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Contents

Introduction

In Europe and elsewhere, climate protection is increasingly among the most prominent political objectives. The many legislative initiatives at European level that are directed at that objective (ERP, EPBD and the Labelling Directive, to name a few) provide evidence of this. Increasing efficiency in energy-driven products and giving information on energy consumption to promote greater consumer awareness are examples of things that can be done to achieve this objective.

In this context, various product manufacturing groups of energy-driven and consumption-relevant products are increasingly developing optional energy label award schemes (energy efficiency labelling).

The manufacturers of thermostatic radiator valves support this development:

- The assessment system should set European standards.
- The assessment system fulfils the desire of the consumer in Europe for assistance regarding information and guidance in making an informed purchasing decision.
- The consumer has access to assistance regarding the selection of energy efficient products.
- The heating specialist has access to “on-site” help regarding decisions that can also be used convincingly in negotiations with customers.
- The assessment system makes a substantial contribution to the overall energy assessment of heating systems. The specialist takes the necessary measures with regard to system technology, such that the individual components function together in the system in a coordinated and efficient way.

Well-known European manufacturers have developed an optional energy labelling system to supplement the European conformity tests of thermostatic radiator valves according to EN 215.

For this, the introduction of a simple and market-orientated energy efficiency labelling system is planned (on the basis of labelling in the areas of refrigerators, pumps and other products). This should earn the consumer’s trust that independent and neutral parties (accredited test laboratories) have examined and confirmed compliance with the testing criteria.

All manufacturers and distributors (either natural persons and/or legal entities) in the European Economic Area can use the classification system if they recognise the regulations of the classification in writing (see form in the annex).

1. Scope

This classification scheme is applicable to thermostatic radiator valves in line with EN 215. As well as the basic concept for testing listed below, it also includes all requirements on issuing energy efficiency labelling.

The relevant test report from one of the known test laboratories[1)] approved and accredited by CEN Certifying Committee (CCC3/Keymark) serves as the basis for labelling and classifying a thermostatic radiator valve into the appropriate energy efficiency class. From the first retesting at the latest, the relevant test laboratory automatically confirms compliance of the product values (Chapter 4) required for a particular energy efficiency class in the context of testing in line with EN 215. This is done in an informative annex or additional statement responding to the test report. Market monitoring is carried out by the manufacturers themselves (as with pumps and refrigerators).

[1)] List of test laboratories: www.cert-trv.cenorm.be

2. Terms

Thermostatic radiator valve	Combination made up of a two-way valve and a thermostatic head or a valve core (in case of a radiator with an integrated valve) and a thermostatic head. The thermostatic radiator valve allows the through-flow of water between pipes and radiator to be controlled, depending on the measured ambient temperature.
Test laboratory	An organisation accredited according to EN ISO/IEC 17025 carrying out the necessary testing in line with EN 215 and condensing the results into a test report. The test laboratory confirms the actual energy efficiency class with the corresponding energy label. With retesting according to EN 215 the test laboratory confirms compliance in an informative annex or additional statement responding to the test report.

3. Basic concept for testing

The standard below in its current version forms the basis for testing.

EN 215 Thermostatic radiator valves – requirements and test methods

4. Product requirements

In order to achieve energy conservation in buildings and to maintain a comfortable ambient atmosphere (thermal comfort), measures implemented include the installation of thermostatic radiator valves that regulate the through-flow of water between pipes and radiator, depending on measured room temperature and the previously given target value.

4.1 Control by thermostatic radiator valves

4.1.1 Basic requirements for granting the right to use the trademark

The right to use energy efficiency labelling on thermostatic radiator valves can only be granted to products that fulfil the minimum requirements in line with EN 215.

4.1.2 Energy efficiency of thermostatic radiator valves

Classification into the appropriate energy efficiency class (I - VI) is carried out by evaluating the Energy Efficiency Indicator (EEI) according to the following equation.

$$EEI = (C/1.0 + W/1.5^{a)} + D/1.0 + Z/40) / 4$$

C	Hysteresis in line with EN 215 in K
W	Influence of water temperature in line with EN 215 in K
D	Influence of differential pressure in line with EN 215 in K
Z	Response time in min in line with EN 215

The reference values of the variables in the formula inside the brackets correspond with the relevant limit values in Kelvin and in minutes given in EN 215.

a) 1.5 for integrated sensors; 0.75 for remote sensors

The EEI value is rounded up/down to the second decimal place (e. g. 0,53 instead of 0,5342).

All values needed for the calculation of EEI are provided by the manufacturers and verified by the test laboratories. They are taken from the informative annex of the test report or from a separate confirmation of the test laboratory.

Test basis for thermostatic heads is an angle valve DN 15 (1/2").

4.1.3 Energy efficiency classes for thermostatic radiator valves

Table 1 contains the possible energy efficiency classes for thermostatic radiator valves.

Table 1: Energy Efficiency Indicator (EEI) and energy efficiency classes for thermostatic radiator valves

Energy efficiency class	VI	V	IV	III	II	I
EEI	≤ 1.00	≤ 0.90	≤ 0.80	≤ 0.70	≤ 0.60	**≤ 0.50**

5. Label design

Only bars, colours and letters are used in external communication. No figures are used (see example below).