

HEAT METER INSTALLATION

CEN REPORT

Some guidelines for selecting, installation and operation of Heat Meters

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1 Introduction

1.1 General

When EN1434 was being prepared, much useful information and practical advice concerning the choice and installation of heat meters was received. Though unsuitable for inclusion in the standard it is given here to help heat meter users.

1.2 Explanations of terms

For the purposes of this report, in addition to the definitions in EN1434, the following terms and symbols apply

1.2.1 *DH (network)*

District heating systems

1.2.2 *Meter*

Heat (energy) meter

1.2.3 *Water*

Sanitary water

1.2.4 *Warm water*

Sanitary warm water

1.2.5 *Make up liquid*

Liquid for refilling leakage of heat conveying liquid

1.2.6 *Liquid*

Heat conveying liquid in a DH system

2 Selection of meters

2.1 General

A heat meter is composed of three parts, a flow sensor, a temperature sensor pair and a calculator.

The calculator is a unit which calculates volumes and energy consumption using the values from the temperature sensors and the flow sensor.

The most common type of temperature sensor is a resistance thermometer of platinum type Pt 100, Pt 500 or Pt 1000. The sensors measure the temperature difference between the incoming and outgoing liquid.

The flow sensor is probably the most troublesome assembly of the heat meter. Despite an accuracy requirement of only 4-10% it is very easy to fall outside these limits. In order to counter these effects as far as possible, there follows a summary of the various types of flow sensor and their advantages and disadvantages.

The sizing of meters to match their required duty frequently turns out to have been incorrectly estimated when the heating plant commences operation. In most cases heat meters that are too large for their