MID - Current Reading	**Suggestion from WELMEC WG 13 "Water meters and thermal energy meters"and the drafting group MI-004 Thermal energy meters (cooling)**	**Rationale / Notes**
Definition		
A thermal energy meter is an instrument designed to measure the thermal energy which, in a thermal energy exchange circuit, is given up by a liquid called the thermal energy-conveying liquid.	A thermal energy meter is an instrument intended for measuring the energy which in a heat-exchange circuit is absorbed (cooling) and/or given up (heating) by a liquid called the thermal energy-conveying liquid.	A thermal energy meter is either a complete instrument or a combined instrument consisting of the sub-assemblies, flow sensor, temperature sensor pair, and calculator, as defined in Article 4(2), or a combination thereof Solution: Include the term **„or absorbed"** and the term **„for heating and Δθ ≤ 0 for cooling"** in the definitions part. Self-explanatory Taken and slightly modified from EN 1434-1
Δθ = the temperature difference θ_{in} — θ_{out} with **Δθ ≥ 0**;"	Δθ = the temperature difference θ_{in} — θ_{out} with **Δθ > 0 for heating and Δθ < 0 for cooling**	Self-explanatory
1.1. For the temperature of the liquid: θ max , θ min , — for the temperature differences: Δθ max , Δθ min , subject to the following restrictions: Δθ max /Δθ min ≥ 10; Δθ min = 3 K or 5 K or 10 K.	1.1. For the temperature of the liquid: θ max , θ min , — for the temperature differences: Δθ max , Δθ min , subject to the following restrictions: Δθ max /Δθ min ≥ 10 with the exception of cooling applications; Δθ min is a whole number in the range of 1 K and 10 K	1.There might be conditions where other temperature difference values are technically needed, for example in asymmetric built-in situations of temperature sensor pairs. 2. Temperature differences in cooling systems might be lower than 3 K. Manufacturers of temperature sensors develop new sensors and should not be inhibited in their work of pushing the state of the art. Nevertheless, there are currently high requirements that have to be fulfilled when measuring at lower temperature differences than 3 K. Therefor, one could add a respective recommendation.

1.3. For the flow rates of the liquid: q s , q p , q i , where the values of q p and q i are subject to the following restriction: q p /q i ≥ 10.	1.3. For the flow rates of the liquid: q s , q p , q i , where the values of q p and q i are subject to the following restriction: q p /q i ≥ 5	1. The differences between EN 1434 and MID have been noticed. 2. There might be conditions where other flow rate ratios are technically needed, for example in asymmetric built-in situations of temperature sensor pairs. 3. Considering the wider range of viscosity of usual coolants in comparison to water the permission of ratio of q p /q i ≥ 5 shall be granted.