

DIN EN 1434-1:2016-02 (E)

Heat meters - Part 1: General requirements

Contents		Page
European foreword		4
1	Scope	6
2	Normative references	6
3	Terms and definitions	6
4	Types of instruments	11
4.1	General	11
4.2	Complete instrument	11
4.3	Combined instrument	11
4.4	Hybrid instrument	11
4.5	Sub-assemblies of a heat meter, which is a combined instrument	11
4.5.1	General	11
4.5.2	Flow sensor	12
4.5.3	Temperature sensor pair	12
4.5.4	Calculator	12
4.6	Equipment under test (EUT)	12
5	Rated operating conditions	12
5.1	Limits of temperature range	12
5.2	Limits of temperature differences	12
5.3	Limits of flow rate	12
5.4	Limit of thermal power	13
5.5	Limits of working pressure (PS and Pmin)	13
5.6	Nominal pressure (PN)	13
5.7	Limits in ambient temperature	13
5.8	Limits in deviations in supply voltage	13
5.9	Maximum pressure loss	13
5.10	Specific requirements on registration devices	13
5.10.1	General	13
5.10.2	Suitability	13
5.10.3	Rated operated conditions	14
5.10.4	Indication	14
5.10.5	MPE	15
6	Technical characteristics	15
6.1	Materials and construction	15
6.2	Requirements outside the limiting values of the flow rate	16
6.3	Display	16
6.4	Protection against fraud	16
6.5	Supply voltage	17
6.6	Qualifying immersion depth of a temperature sensor	17
6.7	The influence on a temperature sensor pair caused by mounting in pockets	17
6.8	Reproducibility	17
6.9	Repeatability	17
6.10	Software	18
7	Specified working range	18
7.1	General	18
7.2	Temperature difference	18

7.3	Flow rate	18
8	Heat transmission formula	18
9	Metrological characteristics (Maximum Permissible Error, MPE)	19
9.1	General	19
9.2	Values of maximum permissible errors	19
9.2.1	Maximum permissible relative errors of complete heat meters	19
9.2.2	Maximum permissible relative error of sub-assemblies	19
9.3	Application of maximum permissible errors	20
10	Environmental classification	20
10.1	General	20
10.2	Environmental class A (Domestic use, indoor installations)	21
10.3	Environmental class B (Domestic use, outdoor installations)	21
10.4	Environmental class C (Industrial installations)	21
10.5	Mechanical classes M1 to M3	21
11	Heat meter specification	21
11.1	General	21
11.2	Flow sensor	21
11.3	Temperature sensor pair	23
11.4	Calculator	23
11.5	Complete meters	25
12	Information to be made available by the manufacturer or supplier	26
12.1	Installation instructions	26
12.2	Parameter setting instructions	27
12.3	Adjustment instructions	28
12.4	Maintenance instructions	28
12.5	Hints for disposal instructions	29
	Annex A (normative) Heat coefficient equations	30
	Annex B (normative) Flow conditioner package	32
	Annex C (normative) Fast response meters	34
	Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2004/22/EC, MID	35
	Bibliography	37