JJG

REGULATION OF METROLOGICAL VERIFICATION OF THE PEOPLE'S REPUBLIC OF CHINA

中华人民共和国国家计量检定规程

JJG 225–2001

Heat Meters

热能表

Issued on December 04, 2001 **Implemented on March 01, 2002**

Issued by General Administration of Quality Supervision (AQSIQ)

Contents

Verification Regulations of Heat Meters

JJG 225—2001 replace JJG 225—1992

This Regulation was approved by General Administration of Quality Supervidion, Inspection and Quarantine of the People's Republic of China on December 4, 2001 and put into effect on March 1, 2002.

Centralized unit: National Flux, Volume and Meterage Technology Commitee

Main draft unit: National Institute of Metrology of People's Republic of China

Draft unit participated in:

Beijing Metrological Measuring Institute

Liaoning Metrological Measuring Institute

Shandong Metrological Measuring Institute

Daqing Lianyi Weihua High Techology Co., Ltd.

Guanzhou Basi Controls Co., Ltd.

Tsinghua Tongfang Co., Ltd.

This Regulation entrusts National Flux, Volume and Meterage Technology Commiteeto interpret it

The main drafters of this Regulation:

Wang Dongwei (National Institute of Metrology of People's Republic of China)

Qiu Ping (National Institute of Metrology of People's Republic of China)

Main drafters participated in:

Zhai Xiuzhen (National Institute of Metrology of People's Republic of China)

Zhang Liqian (Beijing Metrological Measuring Institute)

Zang Lixin (Liaoning Institute of Metrology)

Gu Zukang (Shandong Metrological Measuring Institute)

He Shaowen (Daqing Lianyi Weihua High Techology Co., Ltd.)

Tan Wensheng (Guangzhou Basi Controls Co., Ltd.)

Lv Ruifeng (Tsinghua Tongfang Co., Ltd.)

Verification Regulations of Heat Meters

This regulation refers to OIML-R75 International Recommendations *Heat Meters* (Draft, May, 2001); it is improved according to our national conditions by increasing and decreasing some of the contents.

1 Scope

This regulation applies to the initial verification, subsequent verification, in-service inspection, pattern evaluation as well as prototype testing of heat meters.

Refer to this regulation for the verification of heat meters which is used for metering the absorbed heat.

2 Reference

For this regulation, reference is made to the following documents.

1. OIML R75-2001 Heat meters (Draft)
2. EN1434-1997 Heat Meters
3. GB2423-1989 Basic environmental test for electric and electronic products
4. GB6587-1986 Environmental test for electronic measuring instruments
5. GB/T17626-1998 Electromagnetic compatibility experimentation and measuring technique
6. GB/T8622-1997 Industrial platinum resistance temperature sensor
7. GB/T778.3-1996 Cold water meter, part 3: Test method and test equipment

The currently valid version of the above said documents should be adopted when using this regulation.

3 Terms and definitions

3.1 Heat meter

A measuring instrument which is used for metering and displaying the heat released by the heat transfer fluid in the heat-exchange circuit

3.1.1 Combined heat meter

It is a heat meter which comprises an independent flow sensor, temperature sensor pair as well as a calculator.

3.1.2 Complete heat meter

It comprises a flow sensor, temperature sensor pair as well as a calculator; the constituent heat meter can not be parted partly or wholly.

3.2 Sub-assemblies of a heat meter

3.2.1 Flow sensor

It is a component which is used for generating flow signal for heat transfer fluid in heat-exchange circuit; this signal is the function of heat transfer liquid volume or mass, it also can be the function of the volume flow or mass flow.

3.2.2 Temperature sensor pair

It is used for collecting temperature signal of heat transfer liquid both at the inlet and at the outlet of the heat-exchange circuit synchronously.

3.2.3 Calculator

It is used for receiving the signal of flow sensor and temperature sensor pair, then calculating, accumulating, storing as well as displaying the heat released in heat-exchange circuit.

3.3 Rated operating conditions

3.3.1 Limits of temperature range

3.3.1.1 θ_{max} is the upper limit of the temperature range

The maximum permissible temperature of the heat transfer fluid passing through the heat meter; at this temperature the heat meter is within the maximum permissible error.

3.3.1.2 θ_{min} is the lower limit of the temperature range

The minimum permissible temperature of the heat transfer fluid passing through the heat meter; at this temperature the heat meter is within the maximum permissible error.

3.3.2Limits of temperature difference

3.3.2.1 $\triangle\theta$ is the temperature difference

The difference between the inlet temperature and outlet temperature of the heat transfer fluid within the heat-exchange circuit.

3.3.2.2 $\triangle\theta_{max}$ is the upper limit of the temperature difference

The maximum permissible temperature difference; with this temperature difference and within the upper limit of the thermal power, the heat meter should be within the maximum permissible error.

3.3.2.3 $\triangle\theta_{min}$ is the lower limit of the temperature difference

The minimum permissible temperature, with this temperature difference the heat meter is within the maximum permissible error.

3.3.3Limit of flow-rate

3.3.3.1 q_s is the upper limit of the flow-rate

The maximum flow-rate that a heat meter can bear in a shot time (＜1 hour/day and ＜200 hours /year) when the meter is within the maximum permissible error.

3.3.3.2 q_p is the permanent flow-rate

The maximum flow-rate that a heat meter can continuously operate when the heat meter is within the maximum permissible error.

3.3.3.3 q_i is the lower limit of the flow-rate

The minimum flow-rate that a heat meter can operate when the heat meter is within the minimum permissible error.

3.3.4P_s is the upper limit of the thermal power

The maximum thermal power that a heat meter can operate when the heat meter is within the minimum permissible error.

3.3.5Maximum admissible working pressure(MAP)

The maximum admissible working pressure that the heat meter can bear continuously within the upper limit temperature

3.3.6$\triangle P$ is maximum pressure loss

The pressure loss of the heat transfer fluid when it passes the meter at a permanent flow-rate.

3.3.7Maximum permissible error (MPE)

The limit value of permissible error of the heat meter

3.4 Gross verification

Gross verification: verify the heat value of the heat meter directly

3.5 Component verification

Consider the parameter of the flow sensor, temperature sensor and integrating instrument as the component of the heat; verify the heat component or the component combination separately.

4 Overview

4.1 Working principle

Working principle of the heat meter: Install the temperature sensor pair on the inlet and outlet conduit of heat-exchange circuit separately; install the flow sensor on the inlet or the outlet pipe.

北京文心雕语翻译有限公司
Beijing Lancarver Translation Inc.

完整版本请在线下单

或咨询：

TEL: 400-678-1309

QQ: 19315219

Email：info@lancarver.com

http://www.lancarver.com

对公账户：

单位名称：北京文心雕语翻译有限公司

开 户 行：中国工商银行北京清河镇支行

账　　号：0200 1486 0900 0006 131

支付宝账户：info@lancarver.com

注: 付款成功后，请预留电邮，完整版本将在一个工作日内通过电子 PDF 或 Word 形式发送至您的预留邮箱，如需索取发票，下单成功后的三个工作日内安排开具并寄出，预祝合作愉快！