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JJG

**INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

JJG 1121-2015

Replacing JJG 198-1994

**Verification Regulation of Vortex Precession Flowmeters
(English Translation)**

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7.4 Verification cycle (6)

Appendix A Certificate of Verification/Verification Result Page Format (7)

Appendix B Using Gas Flowmeter K Factor to Calculate the Accumulated Error of the Model Condition (8)

Introduction

This procedure replaces the JJG 198-1994 part of the precession vortex flowmeter.

This procedure in accordance with JJF1002-2010 "national measurement procedures for the preparation of rules", according to JJF1004 "flow Metrological terminology and definitions ", GB 3836.1-2010 " Explosive atmospheres Part 1. General requirements for equipment GB 3836.2-2010 "Explosive atmospheres Part 2. Equipment protected by flameproof enclosure" d " GB 3836.3-2010 "Explosive atmospheres Part 3. Equipment protected by increased safety" e ", GB 4208-2008 "enclosure protection class (IP code)", GB 50251 "gas pipeline engineering design specifications", GB/T 13609 "Natural Gas Sampling Guidelines", GB/T 13610 "Composition Analysis of Natural Gas Gas Chromatography", GB/T 17747.2-2011 "Calculation of natural gas compression factor Part 2. Calculation by molar composition", International Organization of Legal Metrology (OIML) International Recommendation R137-1 Eddy current meter technical level and industry status to be revised. And JJG 198-1994 "speed flowmeter" in the the "precession vortex flowmeter" section compared to the main changes are as follows.

- Added "Introduction, reference documents, terms and units of measurement";
- cancel the "0.1, 0.2, 0.5 and 4.0 level of accuracy";
- introduced the "boundary flow q_t " concept, in the same accuracy level, respectively, by $q_t \leq q \leq q_{max}$ and $q_{min} \leq$
- cancel 0.7 q_{max} test flow point;
- Amend the "Verification Certificate/Verification Result Notice Page Format" appendix.

Prerequisites of this Code Release.

- "JJG 198-1994" speed flowmeter "in the" precession vortex flowmeter "part;
- JJG 464-1986 "Rotary vortex flow transmitter" (Trial).

Test procedure for rotary vortex flowmeter

1 Scope

This procedure applies to the first test of the precession vortex flowmeter (hereinafter referred to as flowmeter), subsequent verification and use an examination.

2 reference file

The provisions contained in the following documents constitute the provisions of this Code by reference.

JJF1004 flow meter noun terms and definitions Electrical equipment for explosive atmospheres GB 3836 GB 4208 enclosure protection class (IP code) Code for design of gas transmission pipeline GB 50251 Guide for sampling of natural gas GB/T 13609 GB/T 13610 Natural Gas Component Analysis - Gas Chromatography GB/T 17747.2-2011 Calculation of natural gas compression factor - Part 2. Calculation of molar composition Natural gas OIMLR137-1 any reference to the date of the document, only the date of the

version of the application of this procedure; those who do not note the date of the reference file, the latest version (including all amendments) applies to this procedure.

3 terms and units of measurement 3.1 terminology in addition to the terms and definitions of JJF1004, this procedure uses the following terms.

3.1.1 Piezoelectric Sensors piezoelectricsensor Sensitive elements that detect vortex precession frequencies.

3.1.2 body body of the body Install the vortex generator, piezoelectric sensors and rectifiers and other components, and with the contraction and diffusion section of the pipe section.

3.1.3 K-factor K-Coefficient when the volume of fluid flows through the flow meter, the number of pulses emitted by the flowmeter.

3.1.4 standard volume flow normalized volumetricflowrate the temperature is 20 °C, the pressure is 101.325kPa standard state of the volume flow.

3.2 Units of measurement Flowmeter shows the cumulative flow unit. cubic meter, symbol m^3 ; l, symbol L (dm^3).

Flowmeter shows instantaneous flow unit. cubic meter per hour, symbol m^3/h .

4 Overview

4.1 Use and working principle Flow meter for gas, liquid flow measurement.