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Magnetostrictive Liquid Level Meter

磁致伸缩液位计

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Contents

Foreword

The Annex A of the standard is the normative annex.

The standard is proposed by the China Machinery Industry Federation.

The standard is under the administration of the First Technical Branch of National Technical Committee on Industrial Process Measurement and Control Standardization.

Drafting Units of This Standard: Beijing Shenzhou Aerospace Control Instrument Co., Ltd., Shanghai Institute of Industrial Automation Instrumentation, Shenyang Academy of Instrumentation Science, Machinery Industry Economic Research Institute of Instrumentation Technology, and Beijing Institute of Aerospace Testing Measurement.

Main Drafters of This Standard: Pan Nianmao, Cheng Yanfeng, Li Yongqing, Xu Qiuling, Li Jingwu, Feng Xiaosheng, Jin Lihui, Pan Yan, Miao Yinxiao and Pan Shuping.

The standard is established for the first time.

Introduction

The standard is established in accordance with the current technology status and development direction of domestic and foreign magnetostrictive liquid level meters, and in the full consideration of the premise of the domestic market demands. The level meter is characterized in the high precision, which can be used as the general sensor, as well as the metering instrument. For this reason, in the preparation of the standard, the above two application directions are both considered, and the standard is kept consistent to the Verification Regulation of the Liquid Level Measuring Devices (JJG 971-2002) as much as possible.

Magnetostrictive Liquid Level Meter

1 Scope

In the standard, the product classification, basic parameters, technical requirements, testing methods, inspection rules, signs, operating manual, packaging, storage and transport of magnetostrictive liquid level meters are specified.

The standard applies to the magnetostrictive liquid level meter (hereinafter referred to as "level meter").

2 Normative References

The articles contained in the following documents have become this standard when they are quoted herein. For the dated documents so quoted, all the modifications (excluding corrections) or revisions made thereafter shall not be applicable to this Standard. For the undated documents so quoted, the latest editions shall be applicable to this Standard.

GB 3836.1 Electrical Apparatus for Explosive Gas Atmospheres Part 1: General Requirements (GB 3836.1-2000，eqv IEC 60079-0:1938)

GB 3836.2 Electrical Apparatus for Explosive Gas Atmospheres Part 2: Flameproof Enclosure "d" (GB 3836.2-2000，eqv IEC 60079-1:1990)

GB 3836.4 Electrical Apparatus for Explosive Gas Atmospheres Part 4: Intrinsic Safety "i" (GB 3836.4-2000，eqv IEC 60079-11:1999)

GB 4208 Protection Level of Outer Casing (IP Code) (GB 4208-1993，eqv IEC 60529:1989)

GB 9969.1 Instructions for Use of Industrial Products General Principles

GB/T 15464 General Specifications for Packaging of Instrumentation

GB/T 15479-1995 Technical Requirements and Test Methods of Insulation Resistance and Insulating Strength for Use in Industrial Process Measurement and Control Instruments

GB/T 17626.2-1998 Electromagnetic Compatibility Testing and Measurement Techniques Electrostatic Discharge Immunity Test (idt IEC 61000-4-2:1995)

GB/T 17626.3-1998 Electromagnetic Compatibility Testing and Measurement Techniques Radiated Radio-frequency Electromagnetic Field Immunity Test (idt IEC 61000-4-3:1995)

GB/T 17626.4-1998 Electromagnetic Compatibility Testing and Measurement Techniques Electrical Fast Transient Burst Immunity Test (idt IEC 61000-4-4:1995)

GB/T 17626.5-1999 Electromagnetic Compatibility Testing and Measurement Techniques Surge Immunity (Impact) Test (idt IEC 61000-4-5:1995)

GB/T 17626.6-1998 Electromagnetic Compatibility Testing and Measurement Techniques Tests on Immunity to Conducted Disturbances Included by Radio-Frequency Fields (idt IEC 61000-4-

6:1996)

GB/T 17626.8-1998 Electromagnetic Compatibility Testing and Measurement Techniques Power Frequency Magnetic Field Immunity Test (idt IEC 61000-4-8:1993)

GB/T 18268-2000 Electrical Equipment for Measurement, Control and Laboratory Use EMC Requirements (idt IEC 61326-1:1997，Amd.1:1998)

GB/T 18271.1-2000 Process Measurement and Control Devices General Methods and Procedures for Evaluating Performance Part 1: General Principles (idt IEC 61298-1:1995)

GB/T 18271.3-2000 Process Measurement and Control Devices General Methods and Procedures for Evaluating Performance Part 3: Tests for Effects of Influence Quantities (idt IEC 61298-3:1998)

GB/T 18271.4-2000 Process Measurement and Control Devices General Methods and Procedures for Evaluating Performance Part 4: Evaluation Report Content (idt IEC 61298-4:1995)

JB/T 9329-1999 Basic Environmental Conditions and Testing Methods for Instruments Transportation and Storage in the Transportation

3 Terms and Definitions

The following terms and definitions apply to the standard.

3.1

Magnetostriction

The change of the magnetization direction in the ferromagnetic material will cause the change of the medium lattice spacing, therefore to obtain change phenomenon to the length and volume of the ferromagnetic material.

3.2

Magnetostrictive Liquid Level Meter

A device used for measuring the fluid level or fluid-fluid interface position, which internal sensing elements are designed and manufactured on the basis of the magnetostrictive principle.

4 Product Classification

4.1 The products are classified in accordance with the measuring rod structure of the level meter

a) Rigid rod. The whole measuring rod is of the rigid structure, and has a certain supporting strength, to guarantee the straight line state;

b) Flexible rod. The measuring rod can be bent in the transport and installation process, and the modes of heavy hammer, magnet steel, lifting hook, protective jacket, etc. shall be adopted in use, to ensure the straight line state required in the work.

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