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

GB/T 42567.2-2023

**Reference conditions and procedures for testing industrial and
process measurement transmitters - Part 2: Specific
procedures for pressure transmitters**

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foreword

This document is in accordance with the provisions of GB/T 1:1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules for Standardization Documents"

drafting:

This document is part 2 of GB/T 42567 "Reference Conditions and Procedures for Testing Transmitters for Industrial Process Measurement": GB/T 42567 has

The following parts have been published:

- Part 1: General procedures for all types of transmitters;
- Part 2: Specific procedures for pressure transmitters;
- Part 3: Specific procedures for temperature transmitters:

This document is equivalent to IEC 62828-2:2017 "Reference conditions and procedures for testing of industrial process measurement transmitters Part 2: Pressure

Transmitter Specific Procedures":

The following minimal editorial changes have been made to this document:

- The general test configuration of the transmitter with optional HART digital output in 6:1 is

shown in Figure 3: "In Figure 3

Shown" is corrected to "as shown in Figure 2", and the number of figures mentioned in the text is reduced by 1, such as "Figure 4" is corrected to "Figure 3" (original text

editorial error);

--- In 6:2:2:3, "All measurement errors should be expressed in tables (see Table 1) and graphics (see Figure 6):" in "See Figure 6" is corrected to

"See Figure 3" (editorial error in the original text);

---In Figure 4, "Mspan---maximum range", "pti---pressure at time ti" and "pti 1---specified PN, unit

Pa/100" is corrected to "Mspan --- output range", "pti --- zero output at time ti" and "pti 1 --- time ti 1

zero point output", the formula is corrected as: $F_w =$

$\max_{pti\ 1-pti}$

M_{span}

$\times 100\%$ (original editorial error);

---Correct "I/1, I/2, I/3" in Figure 5 to "V1, V2, V3" (original editorial error);

---In Figure 6, "Mspan---maximum range", "pti---pressure at time ti" and "pti 1---specified PN, unit

Pa/100" is corrected to "Mspan --- output range", "pti --- zero output at time ti" and "pti 1 --- time ti 1

The zero point output of ", at the same time, the "pN" mark is added in the figure, and the formula is corrected as: $p_{KN} =$

$\max_{pti\ 1-pti}$

M_{span}

$\times 100\%$ (Original text

editorial error);

---In Figure 7, "Mspan---maximum range", "pti---pressure at time ti" and "pti 1---specified PN, unit

Pa/100" is corrected to "Mspan---output range" "pti---output range at time ti" and "pti 1---time ti 1

output range", at the same time, the "pN" mark is added in the figure, and the formula is corrected as:

pKS=

maxpti 1-pti

Mspan

x100% (original editorial error):

Please note that some contents of this document may refer to patents: The issuing agency of this document assumes no responsibility for identifying patents:

Introduction

Most of the current standards for industrial process measurement transmitters are relatively old and based on analog transmitters: same

At the same time, many industrial process measurement transmitters are also developing, and they are very different from analog transmitters: they are usually digital, and in the computing department

Part (mainly digital electronic circuits) and measurement part (mainly mechanical structure), both include more functions and newer interfaces: currently saved

There are relevant standards for measuring digital transmitters in some processes, but there is still a lack of suitable test methods for some performance aspects:

Existing test standards for industrial process measurement transmitters are scattered documents, so identifying and selecting

Selecting all transmitter standards for measuring a specific process quantity (pressure, temperature, flow, level, etc.) is difficult, impractical and time consuming:

In order to solve the above problems, so as to be better used by manufacturers and users, and to provide systematically for different types of industrial process measurement transmitters

For a comprehensive test method, GB/T 42567 is proposed to consist of the following 5 parts:

--- Part 1: General procedures for all types of transmitters: The purpose is to provide measurement and control systems for industrial processes and machinery

All types of transmitters used provide the reference conditions and procedural framework for the experiments:

--- Part 2: Specific procedures for pressure transmitters: Intended for use in measurement and control systems for industrial processes and machinery

The pressure transmitter provides specific test reference conditions and procedures:

--- Part 3: Specific procedures for temperature transmitters: Intended for use in measurement and control systems for industrial processes and machinery

The temperature transmitter provides specific test reference conditions and procedures:

--- Part 4: Specific procedures for level transmitters: Intended for use in measurement and control systems for industrial processes and machinery

The level transmitter provides specific test reference conditions and procedures:

--- Part 5: Specific procedures for flow transmitters: Intended for use in measurement and control systems for industrial processes and machinery

The flow transmitter provides specific test reference conditions and procedures:

In the process of formulating GB/T 42567 series standards, many test procedures in IEC 61298 were adopted, and necessary

Improve:

Reference conditions and conditions for testing transmitters for industrial process measurement

Procedures Part 2: Specific procedures for pressure transmitters

1 Scope

This document specifies process pressure measurement transmitters (PMT, as hereinafter referred to as pressure transmitter or transmitter) specific test procedures:

The pressure transmitter can use the remote seal to lead the process variable to the sensing element of the pressure transmitter: When not available from the pressure transmitter

When the remote seal is separated, the entire pressure transmitter needs to be tested:

For general test procedures, please refer to GB/T 42567:1-2023, which applies to all types of industrial process measurement transmitters:

NOTE: In industrial process applications, the term "industrial transmitter" or "process transmitter" is often also used to indicate a process measurement transmitter:

2 Normative references

The contents of the following documents constitute the essential provisions of this document through normative references in the text: Among them, dated references, only

The version corresponding to this date applies to this document; for undated references, the latest version (including all amendments) applies to this document: