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

GB/T 17614.3-2018

**Transmitters for use in industrial-process control systems --
Part 3: Methods for performance evaluation of intelligent
transmitters**

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Foreword

GB/T 17614 "Transmitter for Industrial Process Control System" consists of the following parts.

- Part 1. Performance assessment methods;
- Part 2. Inspection and routine test guidelines;
- Part 3. Smart transmitter performance assessment method.

This part is the third part of GB/T 17614.

This part is drafted in accordance with the rules given in GB/T 1.1-2009.

This part replaces GB/T 17614.3-2013 "Transmitter for industrial process control systems - Part 3.

Method, the main technical changes in this part compared with GB/T 17614.3-2013 are as follows.

--- Added "The structure of this part mainly follows the framework of GB/T 19767. For performance tests, reference should also be made to GB/T 18271 series.

Standards, many of the tests described in this series of standards are still valid for smart transmitters. Recommended further reading GB/T 18272 series

Column standards, because some of the ideas in this section are based on the concepts presented by the series of standards. " (see introduction, introduction to the.2013 edition);

--- There is no longer a "smart level" evaluation method in the "method"; "methodology" clarifies the "communication network" provisions, that is, "communication network"

(see IEC 61158 series or other standards)" (see Chapter 1, Chapter 1 of the.2013 edition);

--- Revised the normative reference document (see Chapter 2, Chapter 2 of the.2013 edition);

---Modified terms and definitions (see Chapter 3, Chapter 3 of the.2013 edition);

--- Replacement of measurement and control data via interface (wired or wireless), instead of "via interface and fieldbus (digital communication chain)

Road), passing measurement and control data,"; added "(SMART)" after "hybrid transmitter"; in "the digital signal is a stack

Added to the analog current signal, "added later" and available at the electrical output subsystem. " (see 4.2.5,.2013 edition)

4.2.5);

--- Added "(or wireless)" after "suitable for connection to the fieldbus" (see 4.2.6, 4.2.6 of the.2013 edition);

--- Added "In wireless applications, you need to specify a specific power supply (eg battery)." (see 4.2.7, 4.2.7 of the.2013 edition);

--- Added "Check if the new version of the transmitter hardware or firmware is compatible with the old version, and whether the changes have been fully documented (manufactured Business statement, etc.). "(See Table 1, Table 1 of the.2013 edition);

--- "Fieldbus compatibility" was changed to "Fieldbus or wireless compatibility", and the right column added "Connect to wireless network (specified

Standard);" (see Table 2, Table 2 of the.2013 edition);

--- The column to the right of the "Configurable Restart Conditions" column adds "For any transmitter with process control function, list any configurable

Restart the condition after power off. "(See Table 2, Table 2 of the.2013 edition);

--- The right column of the "Transmitter Diagnostics" column will change "Fieldbus device may provide the following information." to "Fieldbus and wireless devices

Can provide the following information." (See Table 6, Table 6 of the.2013 edition);

--- Added "or wireless host" to the right of the "Alarm" column listed in "Host connected by fieldbus" (see Table 6,.2013 edition)

Table 6);

--- Added "Prevent unauthorized access" column and added the content of the right column (see Table 6, Table 6 of the.2013 edition);

--- "The manufacturer's maintenance support" column on the right side of the "manufacturer provides maintenance contract?" Added "(or online support)" (see

Table 7, Table 7 of the.2013 edition);

--- Added "Wireless Compatibility" column (see Table 8, Table 8 of the.2013 version);

--- "Transmitter identification" column has added "---specified use" and "---other safety-related information" column items (see Table 9,.2013 edition)

Table 9);

--- "Application Limit" column deleted "EMC" (see Table 9, Table 9 of the.2013 version);

--- Added "Electromagnetic Compatibility EMC (IEC 61326 Series)" (see Table 9, Table 9 of the.2013 edition);

--- Added "(IEC 61508 series)" after "failure rate data" (see Table 9, Table 9 of the.2013 edition);

--- Added a column "Battery Life Specifications (for Wireless Transmitters)" after the "Performance Specifications" column (see Table 9, Table 9 of the.2013 version);

--- Added "document type and its delivery method (printed, on CD, downloaded from the Internet)" (see Table 9,.2013 edition)

Table 9);

--- Deleted "If there is no such information or information is insufficient, it should be stated in the comments and comments column of the report." (See Table 4.4,.2013 Edition

Table 4.4);

--- Added "5.3.2.1 General", followed by number extension (see 5.3.2.1);

--- When used in "dangerous places, the transmitter should be certified by the authority according to the requirements of the relevant standards."

In hazardous locations, smart transmitters shall be certified by an authority in accordance with the relevant requirements of GB 3836. "(See Table 6.1,

Table 6.1 of the.2013 edition);

--- Removed "Note. The credibility test method given in this appendix is only relevant to the following smart transmitters (functions). with self-test work

Ability to, and/or be equipped with, redundant components, and/or to communicate with external systems regarding their status. These tests are for those used in the safety phase.

Smart transmitters for applications are especially important. Manufacturers are strongly encouraged to incorporate the test methods into their design process. "

(See A.1, 2013 edition of A.1).

This section uses the translation method equivalent to IEC 60770-3:2014 "Transmitter for industrial process control systems - Part 3.

Feeder performance evaluation method.

For the documents of our country that have a consistent correspondence with the international documents referenced in this part, see Appendix NA.

This section has made the following editorial changes.

a) Added the consistency of Appendix NA (informative appendix) with the international documents that are normatively cited in this section.

file;

b) IEC 61326-1 has been removed from the "normative references" because IEC 61326 (all parts) has been referenced in a normative manner;

c) modified the sub-items of the obvious errors in the column to the right of the "Configuration Tool" column of Table 2;

d) Table 16 is filled with missing "power supply voltage transients";

e) revised the clause number of the error in Chapter 7, ie. changed 4.2.8 to 4.3.9;

f) Revised the wrong clause number in A.3, ie. changed 4.2.6 to 4.3.7.

This part was proposed by the China Machinery Industry Federation.

This part is under the jurisdiction of the National Industrial Process Measurement Control and Automation Standardization Technical Committee (SAC/TC124).

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