YTA610 and YTA710
NEPSI Certification
[Option code: /NS2, /NS25 and /NF2]
1. **INTRODUCTION**

Thank you for purchasing the YTA610 and YTA710 Temperature transmitters. This manual contains important note and handling cautions for the YTA Temperature Transmitters with NEPSI certification, option code /NS2, NS25 and /NF2. Refer to the following user’s manuals for standard specifications, functions, handling cautions, and operations, etc.

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2. **NEPSI Certification**

(1) **Technical Data**

a) **NEPSI Intrinsically Safe Type**

Caution for NEPSI Intrinsically safe type

Note 1. Certification information

- **4-20mA type**
  - Model YTA610 and YTA710 with /NS2 temperature transmitters for potentially explosive atmospheres:
    - Certificate No.: GYJ16.1423X
    - Applicable Standard: GB3836.1-2010, GB3836.4-2010, GB3836.20-2010
    - Type of Protection and Marking code: Ex ia IIC T4/T5 Ga
    - Ambient Temperature: –40 to 70°C for T4, –40 to 50°C for T5
    - Enclosure: IP66/IP67 in accordance with only IEC 60529
  - Electrical Data
    - [Supply/Output circuit]
      - Ui = 30 V
      - li = 200 mA
      - Pi = 1.0 W
      - Ci = 22 nF
      - Li = 0 mH
    - [Sensor circuit]
      - Uo = 6.0 V
      - Io = 90 mA
      - Po = 135 mW
      - Co = 10 μF
      - Lo = 3.9 mH

- **Dielectric strength**: 500 V a.c.r.m.s., 1 min
  - [+,-, C, 1, 2, 3, 4, 5] to Earth terminal
  - [+,-, C] to [1, 2, 3, 4, 5]

b) **Fieldbus type**

Model YTA610 and YTA710 with /NS25 temperature transmitters for potentially explosive atmospheres:

- **Certificate No.:** GYJ16.1423X
- **Applicable Standard:** GB3836.1-2010, GB3836.4-2010, GB3836.20-2010
- **Type of Protection and Marking Code:** Ex ia IIC T4 Ga
- **Ambient Temperature:** –55 to 60°C for T4
- **Enclosure:** IP66/IP67 in accordance with only IEC 60529
- **FISCO field Device**
- **Electrical parameters**
  - [Supply/output circuit]
    - Ui = 30 V
    - li = 300 mA
    - Pi = 1.2 W
    - Ci = 2.2 nF
    - Li = 0 mH
  - [Sensor input circuit]
    - Uo = 6.0 V
    - Io = 90 mA
    - Po = 135 mW
    - Co = 10 μF
    - Lo = 3.9 mH

- **Dielectric strength**: 500 V a.c.r.m.s., 1 min
  - [+,-, 1, 2, 3, 4, 5] to Earth terminal
  - [+,-] to [1, 2, 3, 4, 5]

Note 2. Special condition for safe use

![WARNING]

- When the enclosure of the Temperature Transmitter is made of aluminum alloy, if it is mounted in an area where the use of EPL Ga equipment is required, it must be installed such that, even in the event of rare incidents, an ignition source due to impact and/or friction sparks is excluded.
- Precautions shall be taken to minimize the risk from electrostatic discharge of the painted parts.
- The dielectric strength of 500V r.m.s between the intrinsically safe circuit and the enclosure of the Temperature Transmitter is limited, only by the removable surge absorber F9220AR. When the surge absorber is used, the earthing facility should be in accordance with Clause 12.2.4 of GB3836.15-2000.
• WARNING: ELECTROSTATIC CHARGE MAY CAUSE AN EXPLOSION HAZARD. AVOID ANY ACTIONS THAT CAUSE THE GENERATION OF ELECTROSTATIC CHARGE, SUCH AS RUBBING WITH A DRY CLOTH ON COATING FACE OF THE PRODUCT.

Note 3. Control Drawing

1. 4-20mA

Hazardous Area

Intrinsically Safe apparatus or Simple apparatus

Temperature Transmitter

Sensor Input

Supply/Output

1

2

3

4

5

C

Model YTAxxx - J or - D

Sensor Input:

Uo = 6.0 V

Io = 90 mA

Po = 135 mW

Co = 10 μF

Lo = 3.9 mH

Supply/Output:

Ui = 30 V

Ii = 200 mA

Pi = 1.0 W

Ci = 22 nF

Li = 0 mH

Non-Hazardous Area

Associated Apparatus

Hazardous Area

Temperature Transmitter

Sensor Input

Supply/Output

1

2

3

4

5

C

Model YTAxxx - F or - G

Sensor Input:

Uo = 6.0 V

Io = 90 mA

Po = 135 mW

Co = 10 μF

Lo = 3.9 mH

Supply/Output:

Ui = 30 V

Ii = 300 mA

Pi = 1.2 W

Ci = 2.2 nF

Li = 0 mH

Linear source of FISCO power supply

Fieldbus

Hazardous Area

Intrinsically Safe apparatus or Simple apparatus

Model YTAxxx - F or - G

Temperature Transmitter

Sensor Input

Supply/Output

1

2

3

4

5

C

Model YTAxxx - F or - G

Sensor Input:

Uo = 6.0 V

Io = 90 mA

Po = 135 mW

Co = 10 μF

Lo = 3.9 mH

Supply/Output:

Ui = 30 V

Ii = 300 mA

Pi = 1.2 W

Ci = 2.2 nF

Li = 0 mH

FISCO field device

Field Device

Associated Apparatus

Non-Hazardous Area

Terminator

Field Device

FISCO field device

F01.ai

F02.ai
Note 4. Conditions for safe use

- Cable entry should be applied when installation in hazardous location and redundant holes for cable entry should be closed by blanking elements. The IP code should be IP66/IP67.
- This product should be used in explosive gas atmospheres together with associated apparatus, follow the instruction manual of this product and the associated apparatus when connecting the wiring. Connect the wiring terminals correctly.
- It is forbidden to change the configuration except for the removable surge arrester, to ensure the equipment's explosion protection performance.
- When installation, use and maintenance of Temperature Transmitter, observe following standards
  GB3836. 13-2013 “Explosive atmospheres - Part 13: Equipment repair, overhaul and reclamation”
  GB3836.15-2000 “Electrical apparatus for explosive gas atmospheres Part 15: Electrical installations in hazardous area (other than mines)”
  GB3836.16-2006 “Electrical apparatus for explosive gas atmospheres Part 16: Inspection and maintenance of electrical installation (other than mines)”
  GB3836.18-2010 “Explosive atmospheres - Part 18: Intrinsically safe system”
  GB50257-2014 “Code for construction and acceptance of electric equipment on fire and explosion hazard electrical equipment installation engineering”

b) NEPSI Flameproof Type

Caution for NEPSI Flameproof Type

Note 1. Model YTA610/NF2 and YTA710/NF2 temperature transmitters for potentially explosive atmospheres:
- Applicable Standard: GB3836.1-2010, GB3836.2-2010, GB12476.1-2013, GB12476.5-2013
- Certificate No.: GYJ16.1396X
- Type of Protection and Marking Code: Ex d IIC T6/T5 Gb, Ex tD A21 IP66/IP67 T70°C/T90°C
- Temperature Class: T5, T6
- Ambient Temperature for Gas Atmospheres: –40 to 80°C for T5, –40 to 75°C for T6
- Ambient Temperature for Dust Atmospheres: –30 to 65°C for T70°C, –30 to 80°C for T90°C
- Enclosure: IP66/IP67

Note 2. Electrical Data
- Supply voltage: 42 V dc max. (4 to 20 mA type) : 32 V dc max. (Fieldbus type)
- Output signal: 4 to 20 mA : 24 mA dc max. (Fieldbus type)

Note 3. Installation
- All wiring shall comply with local installation Requirements.
- When the one type of protection is installed, tick the box of the selected type of protection on the label when the transmitter is installed to avoid confusion.
  e.g. In case of selecting “db”, not “tD”
  ☑ Ex d IIC T6/T5 Gb
  ☐ Ex tD A21 IP66/IP67 T70°C/T90°C

Note 4. Operation
- Keep strictly the “WARNING” on the label on the transmitter.
  WARNING: AFTER DE-ENERGIZING, DELAY 10 MINUTES BEFORE OPENING. WHEN THE AMBIENT TEMP. ≥70°C, USE THE HEAT-RESISTING CABLE & CABLE GLANDS ≥90°C. POTENTIAL ELECTROSTATIC CHARGING HAZARD. SEE USER’S MANUAL BEFORE USE.
- Take care not to generate mechanical spark when access to the instrument and peripheral devices in hazardous location.

Note 5. Conditions for safe use
- The external earth connection facility shall be connected reliably.
- M20X1.5 or 1/2-14NPT thread type cable entry, adapters and/or blanking elements, certified by notified body with type of protection Ex d IIC Gb in accordance with GB3836.1-2010 and GB3836.2-2010, should be applied when installation in explosive gas atmosphere.
• M20×1.5 or 1/2-14NPT thread type cable entry, adapters and/or blanking elements, certified by notified body with type of protection Ex tD A21 in accordance with GB12476.1-2013 and GB12476.5-2013, should be applied when installation in combustible dust atmosphere. At least IP6X should be guaranteed after the assembly.
• Forbid end user to change the configuration to ensure the equipment’s explosion protection performance.
• When installation, use and maintenance of Temperature Transmitter, observe following standards
  GB3836.13-2013 “Explosive atmospheres - Part 13: Equipment repair, overhaul and reclamation”
  GB3836.15-2000 “Electrical apparatus for explosive gas atmospheres Part 15: Electrical installations in hazardous area (other than mines)”
  GB3836.16-2006 “Electrical apparatus for explosive gas atmospheres Part 16: Inspection and maintenance of electrical installation (other than mines)”
  GB50257-2014 “Code for construction and acceptance of electric equipment on fire and explosion hazard electrical equipment installation engineering”
  GB15577-2007 “Safety regulations for dust explosion prevention and protection”
  GB12476.2-2010 “Electrical apparatus for use in the presence of combustible dust-Part 2: Selection and installation

Note 6. Special condition for safe use

WARNING

The suffix “X” placed after the certificate number indicates that this product is subject to special conditions for safe use:
• The values of the flamepaths are different from the standard values given in GB3836.2-2010. Repair of the equipment is only allowed when done by the manufacturer or authorized representative.
• When used in hazardous location, electrostatic discharge should be avoided.

Revision Record

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