The EE300Ex-xT intrinsically safe transmitter measures reliably temperature (T) in explosion hazard areas. It complies with the classifications for Europe (ATEX), International (IECEx), USA / Canada (FM) and China (NEPSI) for flammable gas and dust applications.

The entire device can be placed in the explosion endangered area. The remote sensing probe allows for classification up to T6.

**Measurement performance**

EE300Ex-xT stands for highly accurate and long term stable measurement over the full range -70...200 °C (-94...392 °F), with pressure rating up to 20 bar (300 psi).

**Supply and outputs**

The device can be powered by any intrinsically safe supply unit or via Zener barriers. The measured data is available on a 4…20 mA, 2-wire output and on the LCD display.

**Robust, functional design**

EE300Ex-xT is available for wall mount and with remote probe up to 10 m (32.8 ft) The stainless steel enclosure and probe are suitable for harsh environment in challenging industrial applications. The EE300Ex-xT design facilitates the installation as well as the replacement of the measuring section (electronics and probe) without time consuming wiring for both models.

**Typical Applications**

- process control
- chemical and pharmaceutical industry
- hazardous storage rooms
- oil and gas industry

**Features**

- approved for gas and dust installation in zone 0 / 20 and Div. 1
- stainless steel enclosure and probe
- highest accuracy up to 200°C (392°F)
- pressure rating 20bar (300psi)
remote probe 0.1...20 bar (1.5...300 psi) with cut-in fitting

Enclosure

70 (2.8) 60 (2.4) 151 (6.0) 179 (7)

1/2 ISO or NPT code „cable length“

Technical Data

Measurand

Temperature

Temperature sensor: Pt1000 (Tolerance class A, DIN EN 60751)
Measuring range:
- wall mount: -40...60 °C (-40...140 °F)
- remote probe: -70...200 °C (-94...392 °F)

Accuracy

Accuracy statement includes the uncertainty of the factory calibration with an enhancement factor k=2 (2-times standard deviation). The accuracy was calculated in accordance with EA-4/02 and with regard to GUM (Guide to the Expression of Uncertainty in Measurement).

Temperature dependence of electronics typ. 0.005 °C/°C

Outputs

Scalable analogue output 4-20 mA (2-wire) \( R_L = \frac{(V_{cc} - 9 \text{ V})}{20 \text{ mA}} \)

General

Supply voltage \( V_{cc\ min} = (9 + R_L \times 0.02) \text{ VDC} \) \( V_{cc\ max} = 28 \text{ VDC} \) \( R_L \): load resistor
Current consumption max 20 mA
Temperature range probe according measuring range
- wall mount: -40...60 °C (-40...140 °F)
- remote probe: -70...200 °C (-94...392 °F)

Material

- enclosure stainless steel 1.4404
- probe stainless steel 1.4541
- probe cable PTFE

Protection class of housing IP65 / Nema 4

Cable gland

- M16 for cable diameter 5 - 10 mm (0.2 - 0.4")
- M20 for cable diameter 10 - 14 mm (0.4 - 0.6")

Electrical connection

- screw terminals max. 1.5 mm² (AWG 16)

Electromagnetic compatibility according

- EN61326-1
- EN61326-2-3
- ICES-003 Class B
- Industrial Environment
- FCC Part15 Class B

Storage temperature range electronics and probe -20...60 °C (22...140 °F)

Dimensions in mm (inches)

Enclosure

179 (7) 151 (6.0) 98 (3.9) 60 (2.4)

code „cable length“

remote probe 0.1...20 bar (1.5...300 psi) with cut-in fitting

JLC International, Inc.
Phone: 215-340-2850
Fax: 215-340-3870

958 Town Center, New Britain, PA 18901
jlcusa@jlcinternational.com
www.jlcinternational.com
Ex - Classifications

Europe (ATEX)

Certificate: TPS 13 ATEX 38892 003 X by TÜV SÜD Product Service GmbH
Safety factors: $U_i = 28V; I_i = 100mA; P_i = 700mW; C_i = 2.2nF; L_i = 0mH$

Ex-Designation:
- Transmitter without display: II 1 G Ex ia IIC T4 Ga / II 1 D Ex ia IIIC T80°C Da
- Transmitter with display: II 2 G Ex ia IIC T4 Gb / II 1 G Ex ia IIB T4 Ga
- Remote probe: II 1 G Ex ia IIC T6-T1 Ga / II 1 D Ex ia IIIC T80°C...220°C Da

International (IECEx)

Certificate: IECEx FMG 14.0017 X by FM Approvals
Safety factors: $6.4 \text{ Vdc} \leq U_i \leq 28\text{Vdc}; I_i = 100mA; P_i = 700mW; C_i = 2.2nF; L_i = 0mH$

Ex-Designation:
- Transmitter without display: Ex ia IIC T4 Ta = -40°C to 60°C Ga / Ex ia IIIC T131°C Da
- Transmitter with display: Ex ia IIC T4 Ta = -40°C to 60°C Gb / Ex ia IIB T4 Ta = -40°C to 60°C Ga
- Remote probe: Ex ia IIC T6-T1 Ta = -70°C to 200°C Ga / Ex ia IIIC T80°C Da

China (NEPSI)

Certificate: Cert NO. GYJ16.1417X by NEPSI
Safety factors: $U_i = 28\text{Vdc}; I_i = 100mA; P_i = 700mW; C_i = 2.2nF; L_i = 0mH$

Ex-Designation:
- Transmitter without display: Ex ia IIC T4 Ga, Ex iaD 20 T131
- Transmitter with display: Ex ia IIC T4 Gb, Ex ia IIB T4 Ga
- Remote probe: Ex ia IIC T1~T6 Ga, Ex iaD 20 T80

USA (FM)

Certificate: No. FM17US0302X by FM Approvals
Safety factors: $6.4 \text{ Vdc} \leq V_{\text{max}} (or U_i) \leq 28\text{Vdc}; I_{\text{max}} (or I_i) = 100mA; P_i = 700mW; C_i = 2.2nF; L_i = 0mH$

Ex-Designation:
- Equipment Group I: EE300Ex without display
  - Class I, II, III, Division 1, Groups A, B, C, D, E, F and G; T4 Ta = -40°C to +60°C; Entity – M1_139080; IP65
  - Class I, II, III, Division 2, Groups A, B, C, D, E, F and G; T4 Ta = -40°C to +60°C
  - Class I, Zone 0, AEx ia IIC T4 Ta = -40°C to +60°C Ga; Entity – M1_139080; IP65
  - Zone 20, AEx ia IIC T131°C Ta = -40°C to +60°C Da; Entity – M1_139080; IP65
- Remote Probe:
  - Class I, II, III, Division 1, Groups A, B, C, D, E, F and G; T6…T1; Entity – M1_139080; IP65
  - Class I, II, III, Division 2, Groups A, B, C, D, E, F and G; T6…T1
  - Class I, Zone 0, AEx ia IIC T6…T1 Ga, Entity – M1_139080; IP65
  - Zone 20, AEx ia IIIC T80°C Da; Entity – M1_139080; IP65
- Equipment Group II: EE300Ex with display
  - Class I, Division 1, Groups C, and D; T4 Ta = -40°C to +60°C; Entity – M1_139080
  - Class I, Division 2, Groups A, B, C and D; T4 Ta = -40°C to +60°C; Entity – M1_139080
  - Class I, Zone 0, AEx ia IIB T4 Ta = -40°C to +60°C Ga; Entity – M1_139080
  - Class I, Zone 1, AEx ia IIC T4°C Ta = -40°C to +60°C Gb; Entity – M1_139080
- Remote Probe:
  - Class I, II, III, Division 1, Groups A, B, C, D, E, F and G; T6…T1; Entity – M1_139080; IP65
  - Class I, II, III, Division 2, Groups A, B, C, D, E, F and G; T6…T1
  - Class I, Zone 0, AEx ia IIC T6…T1 Ga; Entity – M1_139080; IP65
  - Zone 20, AEx ia IIC T80°C Da; Entity – M1_139080; IP65

JLC International, Inc.
Phone: 215-340-2850
Fax: 215-340-3670
jlcusa@jlcinternational.com
www.jlcinternational.com
CANADA (FM)

Certificate: No. FM17CA0154X by FM Approvals
Safety factors: 6.4 Vdc ≤ Vmax (or Ul) ≤ 28Vdc; Imax (or Ii) = 100mA; Pi = 700mW; 
Ci = 2.2nF; Li = 0mH

Ex-Designation:

Equipment Group I: EE300Ex without display
- Class I, II, III, Division 1, Groups A, B, C, D, E, F and G; T4 Ta = -40°C to +60°C; Entity – M1_139080; IP65
- Class I, II, III, Division 2, Groups A, B, C, D, E, F and G; T4 Ta = -40°C to +60°C
- Zone 0, Ex ia IIC T4 Ta = -40°C to +60°C Ga; Entity – M1_139080; IP65
- Zone 20, Ex ia IIC T131°C Ta = -40°C to +60°C Da; Entity – M1_139080; IP65

Remote Probe:
- Class I, II, III, Division 1, Groups A, B, C, D, E, F and G; T6…T1; Entity – M1_139080; IP65
- Class I, II, III, Division 2, Groups A, B, C, D, E, F and G; T6…T1
- Zone 0, Ex ia IIC T6…T1 Ga; Entity – M1_139080; IP65
- Zone 20, Ex ia IIC T80°C Da; Entity – M1_139080; IP65

Equipment Group II: EE300Ex with display
- Class I, Division 1, Groups C, and D; T4 Ta = -40°C to +60°C; Entity – M1_139080
- Class I, Division 2, Groups A, B, C and D; T4 Ta = -40°C to +60°C; Entity – M1_139080
- Zone 0, Ex ia IIB T4 Ta = -40°C to +60°C Ga; Entity – M1_139080
- Zone 1, Ex ia IIB T4 Ta = -40°C to +60°C Gb; Entity – M1_139080

Remote Probe:
- Class I, II, III, Division 1, Groups A, B, C, D, E, F and G; T6…T1; Entity – M1_139080; IP65
- Class I, II, III, Division 2, Groups A, B, C, D, E, F and G; T6…T1
- Zone 0, Ex ia IIC T6…T1 Ga; Entity – M1_139080; IP65
- Zone 20, Ex ia IIC T80°C Da; Entity – M1_139080; IP65

The USA and Canada approvals are valid for air and gas measurement only.
**Ordering Guide**

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1) No display possible for environments with combustible dust, fibers and flyings and in gases with EPL Ga IIC (Groups A, B)

**Order Examples**

**EE300Ex-xT6SHDBHEIAT/MTx005**

- **Model:** remote probe
- **Display:** with display
- **Electrical Connection:** 2 x M16 cable gland
- **Probe Cable:** 10 m (32.8 ft)
- ** Probe Length:** 150 mm (5.9")
- **Feedthrough:** 1/2" ISO - cut-in fitting
- **Ex-Certification:** ATEX (Europe)
- **Units:** metric [°C]
- **Output:** temperature
- **Scaling Output:** 0...100 °C

**EE300EX-xT6SAxBxxxFM/NTx083**

- **Model:** wall mount
- **Display:** without display
- **Electrical Connection:** 2 x M16 cable gland
- **Probe Cable:** wall mount
- **Probe Length:** wall mount
- **Feedthrough:** without probe fitting
- **Ex-Certification:** FM (USA)
- **Units:** non metric
- **Output:** temperature
- **Scaling Output:** -40...140 °F

**Accessories**

- Blank cover: HA011401
- Safety Barrier, 1-channel, STAHL 9002/13-280-093-001: HA011410
- Intrinsically safe Transmitter Supply Unit, 1-channel, STAHL 9160/13-11-11: HA011405
- Intrinsically safe Transmitter Supply Unit, 2-channel, STAHL 9160/23-11-11: HA011406
- Sealing plug for unused M16 cable glands: HA011402
- Sealing plug for unused M20 cable glands: HA011404

**JLC International, Inc.**

Phone: 215-340-2850  
Fax: 215-340-3870  
958 Town Center, New Britain, PA 18901  
jlusa@jlcinternational.com  
www.jlcinternational.com