



# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.:	<b>IECEx BVS 23.0009X</b>	Page 1 of 3	<a href="#">Certificate history:</a>
Status:	<b>Current</b>	Issue No: 0	
Date of Issue:	2023-06-19		
Applicant:	<b>WIKA Alexander Wiegand SE &amp; Co. KG</b> Alexander-Wiegand-Straße 63911 Klingenberg/Main Germany		
Equipment:	<b>Temperature transmitter type T38.*-****</b>		
Optional accessory:			
Type of Protection:	<b>Intrinsic Safety "i", Increased Safety "e"</b>		
Marking:	<b>Type</b>	<b>Ex marking</b>	
	T38.H-*I**	Ex ia IIC T6...T4 Ga	
	T38.R-*I**	Ex ia [ia Ga] IIC T6...T4 Gb	
	T38.*-*C**	Ex ic IIC T6...T4 Gc	
	T38.H-*I**	Ex ia IIIC T135°C Da	
	T38.R-*I**	Ex ia [ia Da] IIIC T135°C Db	
	T38.*-*E**	Ex ec IIC T6...T4 Gc	

Approved for issue on behalf of the IECEx  
Certification Body:

**Dr Franz Eickhoff**

Position:

**Senior Lead Auditor, Certification Manager and officially  
recognised expert**

Signature:  
(for printed version)

Date:  
(for printed version)

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**DEKRA Testing and Certification GmbH**  
Certification Body  
Dinnendahlstrasse 9  
44809 Bochum  
Germany





# IECEx Certificate of Conformity

Certificate No.: **IECEx BVS 23.0009X**

Page 2 of 3

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Manufacturer: **WIKA Alexander Wiegand SE & Co. KG**  
Alexander-Wiegand-Straße  
63911 Klingenberg/Main  
**Germany**

Manufacturing locations: **WIKA Alexander Wiegand SE & Co. KG**  
Alexander-Wiegand-Straße  
63911 Klingenberg/Main  
**Germany**

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

## STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

[IEC 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements  
Edition:7.0

[IEC 60079-11:2011](#) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"  
Edition:6.0

[IEC 60079-7:2017](#) Explosive atmospheres - Part 7: Equipment protection by increased safety "e"  
Edition:5.1

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

## TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

[DE/BVS/ExTR23.0014/00](#)

Quality Assessment Report:

[DE/BVS/QAR07.0010/18](#)



# IECEx Certificate of Conformity

Certificate No.: **IECEx BVS 23.0009X**

Page 3 of 3

Date of issue: 2023-06-19

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## EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

### Subject and Type

Temperature transmitter series T38.\*-\*\*\*\*

Type code:

T38.H-abcd Head version

T38.R-abcd Rail version

(may be followed by additional numbers or letter maybe separated by "-")

ATEX / IECEx applied for a = A or c = A or d = A

(may be another character than 'A' possible, which has then no ex relevance)

b = type of protection

I = Ex ia

C = Ex ic

E = Ex ec

### Description

The series T38\* temperature transmitter is a universal transmitter, configurable via HART® protocol, for use with resistance thermometers (RTD), thermocouples (TC), resistance and voltage sources as well as potentiometers. The transmitters use the 4..20 mA current loop for output signalling and supply.

The head mount version T38.H-\*I\*\* is designed for installation inside a suitable enclosure or connection head in areas requiring EPL Ga, Gb or Da, Db.

The head mount version T38.H-\*C\*\* and T38.H-\*E\*\* is designed for installation inside a suitable enclosure or connection head in areas requiring EPL Gc.

The PCB of the head mount version transmitters is placed inside a plastic enclosure and is fully encapsulated.

The connection terminals for the supply and signal circuit and for the sensor circuit are placed at the top of the enclosure.

Optionally the display type TND is permitted to be connected to the head version transmitters with type of protection intrinsic safety (types T38.H-\*I\*\* and T38.H-\*C\*\*).

The DIN rail version T38.R-\*I\*\* has a plastic enclosure for installation on a DIN rail in areas requiring EPL Gb or Db.

The DIN rail versions T38.R-\*C\*\* and T38.R-\*E\*\* have a plastic enclosure for installation on a DIN rail in areas requiring EPL Gc.

The PCB of the DIN rail versions is placed in a plastic enclosure and is partly encapsulated.

### Parameters

See Annex

### SPECIFIC CONDITIONS OF USE: YES as shown below:

See Annex

### Annex:

[BVS\\_23\\_0009X\\_WIKA\\_Annex\\_.pdf](#)



# IECEx Certificate of Conformity



**Certificate No.:** IECEx BVS 23.0009X  
**Annex**  
**Page 1 of 4**

## Parameters

### 1. Type T38.\*-I\*\* or T38.\*-C\*\*

#### 1.1 Intrinsically safety parameters supply and signal circuit (4 - 20 mA Current loop) Terminals + and -

Maximum input voltage	$U_i$	DC	30	V
Maximum input current	$I_i$		130	mA
Maximum input power (refer to table 1)	$P_i$		550...800	mW
Maximum internal capacitance	$C_i$		1.7	nF
Maximum internal inductance	$L_i$			negligible

#### 1.2 Intrinsically safety parameters sensor circuit Terminals 1 to 6

Maximum output voltage	$U_o$	DC	6.32	V
Maximum output current	$I_o$		25	mA
Maximum output power (linear characteristics)	$P_o$		39	mW

For use in Zone 0, Zone1, Zone 20 or Zone 21 (Ex ia IIC/IIB/IIA and Ex ia IIIC):

Maximum external capacitance	$C_o$		24	$\mu$ F
Maximum external inductance	$L_o$		50	mH
Maximum inductance /resistance ratio	$L_o/R_o$		0.8	mH/ $\Omega$

For use in Zone 2 (Ex ic IIC/IIB/IIA)

Maximum external capacitance	$C_o$		325	$\mu$ F
Maximum external inductance	$L_o$		120	mH
Maximum inductance /resistance ratio	$L_o/R_o$		1.55	mH/ $\Omega$

Remarks:  $U_o$ : maximum voltage of any wire versus the other five wires  
 $I_o$ : maximum current of five wires in parallel versus the sixth wire or any other combination  
 $P_o$ : maximum power of five wires in parallel versus the sixth wire or any other combination

The intrinsically safe supply- and signal-circuit and the intrinsically safe sensor circuit shall be considered as being galvanically connected to each other.

#### 1.3 Intrinsically safety parameters programming circuit T38.R-\*\*\*\* DIN rail mount versions Terminals PU + and -

Maximum input voltage	$U_i$	DC	30	V
Maximum input current	$I_i$		130	mA
Maximum input power (refer to table 1)	$P_i$		550...800	mW

The use of the connector PU + and - is only allowed, when ex-atmosphere is excluded and the terminals + and - are not connected.

### 2. Types T38.\*-E\*\*

#### 2.1 Increased safety parameters supply and signal circuit Terminal + and -

Nominal input voltage	$U_n$	DC	40	V
Nominal input current	$I_n$		22.5	mA



# IECEx Certificate of Conformity



**Certificate No.:** IECEx BVS 23.0009X  
**Annex**  
**Page 2 of 4**

## 2.2 Increased safety parameters sensor circuit

### Terminals 1 to 6

Nominal output voltage	$U_n$	DC	3	V
Nominal output current	$I_n$		0.66	mA
Nominal output power	$P_n$		2	mW

## 2.3 Increased safety parameters mechanical requirements

Tightening torque for screw terminals	0.5	Nm
Minimum wire cross-section	0.14	mm <sup>2</sup>

## 3. Ambient Temperature Range and maximum input Power $P_i$

Type	EPL	Ambient temperature range	Temperature class / Surface temperature
T38.*-****	Group II	-50 °C ≤ $T_a$ ≤ +50 °C -50 °C ≤ $T_a$ ≤ +60 °C -50 °C ≤ $T_a$ ≤ +75 °C -50 °C ≤ $T_a$ ≤ +85 °C	T6 ( $P_i$ = 800 mW) T6 ( $P_i$ = 600 mW) T5 ( $P_i$ = 800 mW) T4 ( $P_i$ = 800 mW)
only T38.H-****	Group II	-50 °C ≤ $T_a$ ≤ +105 °C	T4 ( $P_i$ = 600 mW)
T38.*-****	Group III	-50 °C ≤ $T_a$ ≤ +100 °C -50 °C ≤ $T_a$ ≤ +70 °C -50 °C ≤ $T_a$ ≤ +40 °C	T135 °C ( $P_i$ = 550 mW) T135 °C ( $P_i$ = 650 mW) T135 °C ( $P_i$ = 750 mW)

**Table 1**



# IECEx Certificate of Conformity



**Certificate No.:** IECEx BVS 23.0009X  
**Annex**  
**Page 3 of 4**

## **Specific Conditions of Use:**

### **1. For all transmitter models:**

The permissible ambient temperature range depends on the maximum input power and the temperature class, see parameters.

### **2. Transmitter models T38.H-\*I\*\* (head mount version, Ex ia)**

#### **2.1 Installation in the save area or areas with EPL Gb requirements:**

- The transmitter shall be mounted inside an enclosure providing as a minimum degree of protection IP20 according to IEC 60529.
- During the installation internal wiring, clearances, creepage distances and separations have to be considered according to IEC 60079-11.

#### **2.2 Installation in areas with EPL Ga requirements:**

- The transmitter shall be mounted inside an enclosure providing as a minimum degree of protection IP20 according to IEC 60529 and wherein electrostatic charge effects are excluded.
- During the installation internal wiring, clearances, creepage distances and separations have to be considered according to IEC 60079-11.

#### **2.3 Installation in areas with EPL Da or Db-requirements:**

- Dependent on the application, the transmitter shall be mounted inside an enclosure, suitable for installation in EPL Da or EPL Db area, providing degree of protection IP6X according to IEC 60079-0 and wherein electrostatic charge effects are excluded.
- During the installation internal wiring, clearances, creepage distances and separations have to be considered according to IEC 60079-11.

### **3. Transmitter models T38.H-\*C\*\* (head mount version, Ex ic)**

#### **Installation in the save area or in areas with EPL Gc requirements:**

- The transmitter shall be mounted inside an enclosure providing as a minimum degree of protection IP20 according to IEC 60529.
- During the installation internal wiring, clearances, creepage distances and separations have to be considered according to IEC 60079-11.

### **4. Transmitter models T38.H-\*E\*\* (head mount version, Ex ec)**

#### **Installation in the save area or in areas with EPL Gc requirements:**

- The transmitter shall be mounted inside an enclosure providing as a minimum degree of protection IP54 according to IEC 60079-0.
- The equipment has to be installed in an area providing at least pollution degree 2.
- During the installation internal wiring, clearances, creepage distances and separations have to be considered according to IEC 60079-7.

### **5 Transmitter models T38.R-\*I\*\* (DIN rail mount version, Ex ia)**

The use of the connector PU + and - is only allowed when ex-atmosphere is excluded and the terminals + and - are not connected.

#### **5.1 Installation in areas with Gb-requirements:**

The transmitter shall be installed in such a way that electrostatic charging is excluded.

#### **5.2 Installation in areas with Db-requirements:**

The transmitter shall be mounted inside an enclosure, suitable for installation in EPL Db area, providing degree of protection IP6X according to IEC 60079-0 and wherein electrostatic charge effects are excluded.



# IECEx Certificate of Conformity



**Certificate No.:** IECEx BVS 23.0009X  
**Annex**  
**Page 4 of 4**

**6 Transmitter models T38.R-\*C\*\* (DIN rail mount version, Ex ic)**

- The transmitter shall be installed in such a way that electrostatic charging is excluded.
- The use of the connector PU + and - is only allowed, when ex-atmosphere is excluded and the terminals + and – are not connected.

**7 Transmitter models T38.R-\*E\*\* (DIN rail mount version, Ex ec)**

- The transmitter shall be mounted inside a suitable enclosure providing as a minimum degree of protection IP54 according to IEC 60079-0 and wherein electrostatic charge effects are excluded.
- The equipment has to be installed in an area providing at least pollution degree 2.
- The use of the connector PU + and – is only allowed, when ex-atmosphere is excluded and the terminals + and – are not connected.