IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	IECEx TUN 04.0015X	Issue No: 7	Certificate history:
			Issue No. 7 (2016-03-18)
Status:	**Current**	Page 1 of 5	Issue No. 6 (2014-05-07)
			Issue No. 5 (2012-06-29)
Date of Issue:	**2016-03-18**		Issue No. 4 (2008-12-01)
			Issue No. 3 (2008-09-02)
Applicant:	**ABB Automation Products GmbH** Schillerstraße 72 32425 Minden **Germany**		Issue No. 2 (2008-07-16) Issue No. 1 (2007-10-24) Issue No. 0 (2004-07-29)
Electrical Apparatus:	**Positioner type TZIDC-xxx**		
Optional accessory:			
Type of Protection:	**Intrinsic safety "i", Type of protection "n" electrical apparatus**		
Marking:	Ex ia IIC T6 resp. T4 Gb, Ex ib IIC T6 resp. T4 Gb, Ex ic IIC T6 resp. T4 Gc, Ex nA IIC T6 resp. T4 Gc		

Approved for issue on behalf of the IECEx Certification Body: Karl-Heinz Schwedt

Position: Head of IECExCB

Signature:
(for printed version)

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

TÜV NORD CERT GmbH
Hanover Office
Am TÜV 1
30519 Hannover
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Manufacturer:

ABB Automation Products GmbH
Schillerstraße 72
32425 Minden
Germany

Additional Manufacturing location(s):

ABB
Automation Products GmbH
Schillerstraße 72
32425 Minden
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 electrical apparatus 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 : 2011 Edition:6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-11 : 2011 Edition:6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-15 : 2010 Edition:4	Explosive atmospheres - Part 15: Equipment protection by type of protection "n"

*This Certificate **does not** indicate compliance with electrical 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

IECEx ATR:	File Reference:
DE/TUN/ExTR08.0040/03	14 217 168752
IECEx QAR: DE/TUN/QAR06.0012/03	IEC Ex QAR: DE/TUN/QAR06.0012/04

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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The Positioner type TZIDC-xxx is used for the control resp. closed loop control of pneumatic driven valves. The Positioner type TZIDC resp. TZIDC-200 transfers the reference value by means of an impressed signal current of 4…20 mA. The Positioner type TZIDC-110, TZIDC-210, TZIDC-120 resp. TZIDC-220 transfers the reference value via a field bus signal. An integrated distance sensor measures the current position of the valve drive. An integrated current/pressure transformer (I/P) is used for the pneumatic auxiliary power.

Additional technical data see "Attachment to IECEx TUN 04.0015X Issue_7.pdf".

CONDITIONS OF CERTIFICATION: YES as shown below:

Special conditions for the safe use of intrinsically safe Positioners:

The "Local communication interface (LKS)" of the TZIDC and TZIDC-200 may only be used outside of the explosion hazardous area with U_m ≤ 30 V DC.

Special conditions for safe use of Positioners marked Ex nA IIC:

Only devices which are suitable for the operation in explosion hazardous areas declared as zone 2 and the conditions available at the place of operation are allowed to be connected to circuits in the zone 2.

The connecting and disconnecting as well as the switching of circuits under voltage are only permitted during installation, for maintenance or repair purposes.
Note: The temporal coincidence of explosion hazardous atmosphere and installation, maintenance resp. repair purposes is assessed as improbably.

For the circuit “Mechanical digital feedback” measures have to be taken outside the device that the rated voltage is exceeded not more than 40% by transient disturbances.

Only non combustible gases are allowed to be used as pneumatic auxiliary energy.

Only suitable cable entries which meet the requirements of IEC 60079-15 are allowed to be used.

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

The modifications refer to the construction of the PCB for the types TZIDC and TZIDC-200.

The electronic circuit is modified. A new feedback potentiometer with conductive plastic can be used.

The analogue feedback is modified and the I.S. parameter for this unit are reduced.

The range of ambient temperature is unified.

A communication interface is defined.

The other electrical data, the special conditions and all other data apply unchanged for this issue.

The mechanical construction is modified in small parts. For EPL Gb the indicator dome and the LC-Display can be used; for EPL Db and Gc no windows are used.

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Additional information:

Annex:

Attachment to IECEx TUN 04.0015X_ Issue_7.pdf

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The Positioner type TZIDC-xxx is used for the control resp. closed loop control of pneumatic driven valves.
The Positioner type TZIDC resp. TZIDC-200 transfers the reference value by means of an impressed signal current of 4…20 mA.
The Positioner type TZIDC-110, TZIDC-210, TZIDC-120 resp. TZIDC-220 transfers the reference value via a field bus signal.
An integrated position sensor measures the current position of the valve drive. An integrated current/pressure transformer (I/P) is used for the pneumatic auxiliary power.

The permissible ambient temperature range in dependence on the type, the type of protection and the Temperature Classes has to be taken from the following table:

Type and marking	TZIDC resp. TZIDC-200 Ex ia IIC resp. Ex ib IIC	TZIDC-110/-210/ -120/-220 Ex ia IIC resp. Ex ib IIC resp Ex ic IIC	TZIDC resp. TZIDC-110/-120 Ex nA IIC
Temperature Class	Ambient temperature range		
T4	-40 °C to +85 °C	-40 °C to +85 °C	-40 °C to +85 °C
T6	-40 °C to +40 °C	-40 °C to +40 °C	-40 °C to +50 °C

For use with „ Plug-In module for digital feed back“ in the temperature class T6, the permissible ambient temperature range is -40 °C to +35 °C.

Electrical data for type TZIDC resp. TZIDC-200 with marking Ex ia IIC resp. Ex ib IIC

Signal circuit (terminals 11(+), 12(-)	in type of protection “Intrinsic Safety” Ex ia IIC resp. Ex ib IIC only for the connection to a certified intrinsically safe circuit with the following maximum values: U_i = 30 V I_i = 320 mA P_i = 1.1 W effective internal capacitance: C_i = 6.6 nF The effective internal inductance is negligibly small.
Switch input (terminals 81(+), 82(-)	in type of protection “Intrinsic Safety” Ex ia IIC resp. Ex ib IIC only for the connection to a certified intrinsically safe circuit with the following maximum values: U_i = 30 V I_i = 320 mA P_i = 1.1 W effective internal capacitance: C_i = 4.2 nF The effective internal inductance is negligibly small.
Switch output (terminals 83(+), 84(-)	in type of protection “Intrinsic Safety” Ex ia IIC resp. Ex ib IIC only for the connection to a certified intrinsically safe circuit with the following maximum values: U_i = 30 V I_i = 320 mA P_i = 500 mW effective internal capacitance: C_i = 4.2 nF The effective internal inductance is negligibly small.
Local interface for communication (LKS)	Only for connection to a programmer outside of the explosive hazardous area. (Look also to the “conditions of certification”)

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Optionally the following modules are allowed to be used:	
Plug-In module for digital feedback (terminals +51, -52 resp. +41, -42)	in type of protection "Intrinsic Safety" Ex ia IIC resp. Ex ib IIC only for the connection to a certified intrinsically safe circuit with the following maximum values: U_i = 30 V I_i = 320 mA P_i = 250 mW effective internal capacitance: C_i = 3.7 nF The effective internal inductance is negligibly small.
Plug-In module for analogue feedback (terminals +31, -32)	in type of protection "Intrinsic Safety" Ex ia IIC resp. Ex ib IIC only for the connection to a certified intrinsically safe circuit with the following maximum values: U_i = 30 V I_i = 320 mA P_i = 1.1 W effective internal capacitance: C_i = 6.6 nF The effective internal inductance is negligibly small.
Plug-In module for shutdown-function (terminals +51, -52 resp. +85, -86)	in type of protection "Intrinsic Safety" Ex ia IIC resp. Ex ib IIC only for the connection to a certified intrinsically safe circuit with the following maximum values: U_i = 30 V I_i = 320 mA P_i = 1.1 W effective internal capacitance: C_i = 3.7 nF The effective internal inductance is negligibly small.
Electrical data for type TZIDC-110, TZIDC-210, TZIDC-120 resp. TZIDC-220 with marking Ex ia IIC resp. Ex ib IIC resp. Ex ic IIC	
Input circuit (terminals +11, -12 resp. +, -)	only for the connection to a certified FISCO-Power supply resp. a Barrier or Power Supply with a linear characteristic line and following maximum values:
Voltage	24 V
Current	250 mA
Power	1.2 W
Characteristic line	Linear
Optionally the following modules are allowed to be used:	
Plug-In module for shutdown-function (terminals +51, -52 resp. +85, -86)	in type of protection "Intrinsic Safety" Ex ia IIC resp. Ex ib IIC only for the connection to a certified intrinsically safe circuit with the following maximum values: U_i = 30 V I_i = 320 mA P_i = 1.1 W effective internal capacitance: C_i = 3.7 nF The effective internal inductance is negligibly small.

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Electrical data for type TZIDC, TZIDC-110 resp. TZIDC-120 with marking Ex nA II	
Type TZIDC	
Signal circuit (terminals 11(+), 12(-)	U = 9.7 VDC; 4...20 mA, max. 21.5 mA
Switch input (terminals 81(+), 82(-)	U = 12…24 VDC; 4 mA
Switch output (terminals 83(+), 84(-)	U = 11 VDC
Optionally the following modules are allowed to be used with type TZIDC:	
Plug-In module for digital feedback (terminals +51, -52 resp. +41, -42)	U = 5…11 VDC
Plug-In module for analogue feedback (terminals +31, -32)	U = 10…30 VDC; 4…20 mA, max. 21.5 mA
Type TZIDC-110	
Input circuit (terminals +11, -12)	U = 9..32 VDC; 10.5 mA
Type TZIDC-120	
Input circuit (terminals +11, -12)	U = 9..32 VDC; 11.5 mA
Additionally the following modules are allowed to be used with all types:	
Plug-In module for shutdown-function (terminals +51, -52 resp. +85, -86)	U = 20…30 VDC
Mechanical digital feedback (terminals Limit1 +51, -52 resp. Limit2 +41, -42)	U = 5…11 VDC

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CONDITIONS OF CERTIFICATION:

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Special conditions for safe use of Positioners marked Ex nA IIC:

Only devices which are suitable for the operation in explosion hazardous areas declared as zone 2 and the conditions available at the place of operation are allowed to be connected to circuits in the zone 2.

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Note: The temporal coincidence of explosion hazardous atmosphere and installation, maintenance resp. repair purposes is assessed as improbably.

For the circuit “Mechanical digital feedback” measures have to be taken outside the device that the rated voltage is exceeded not more than 40% by transient disturbances.

Only non combustible gases are allowed to be used as pneumatic auxiliary energy.

Only suitable cable entries which meet the requirements of IEC 60079-15 are allowed to be used.