



Translation

(1) **EC-TYPE EXAMINATION CERTIFICATE**

(2) Equipment and protective systems intended for use in potentially explosive atmospheres - **Directive 94/9/EC**

(3) EC-Type Examination Certificate Number



**TÜV 04 ATEX 2702 X**

(4) Equipment: Positioner type TZIDC

(5) Manufacturer: ABB Automation Products GmbH

(6) Address: Schillerstrasse 72  
D-32425 Minden

(7) This equipment or protective system and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) The TÜV NORD CERT GmbH & Co. KG, TÜV CERT-Certification Body, notified body number N° 0032 in accordance with Article 9 of the Council Directive of the EC of March 23, 1994 (94/9/EC), certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential report N° 04YEX551733.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

**EN 50 014:1997+A1+A2**

**EN 50 020:2002**

**EN 50281-1-1:1998**

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-type examination certificate relates only to the design, examination and tests of the specified equipment in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment or protective system must include the following:



**II 2 G EEx ib IIC T6 resp. II 2 D IP 6X T 46 °C**

TÜV NORD CERT GmbH & Co. KG  
TÜV CERT-Certification Body  
Am TÜV 1  
D-30519 Hannover  
Tel.: 0511 986-1470  
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Hanover, 2004-12-21



**TÜV NORD CERT**

Head of the  
Certification Body

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Excerpts or changes shall be allowed by the TÜV NORD CERT GmbH & Co. KG

(13)

## SCHEDULE

(14) **EC-TYPE EXAMINATION CERTIFICATE N° TÜV 04 ATEX 2702 X**

(15) Description of equipment

The positioner type TZIDC is used for the control resp. closed-loop control of pneumatically driven valves using an impressed current of 4 to 20 mA. An integrated position sensor determines the actual position of the valve drive. An integrated current/pressure transducer (I/P) is used for the control of the pneumatic auxiliary power.

The permissible ambient temperature ranges in dependence of the temperature class resp. enclosure surface temperature have to be taken from the following table:

Temperature class	Ambient temperature range (II G)
T4	- 40 °C to + 85 °C
T5	- 40 °C to + 50 °C
T6	- 40 °C to + 35 °C

Enclosure surface temperature	Ambient temperature range (II D)
T81 °C	- 40 °C to + 70 °C
T61 °C	- 40 °C to + 50 °C
T46 °C	- 40 °C to + 35 °C

### Electrical Data

Signal circuit  
(Terminal +11, -12)

in the type of protection Intrinsic Safety EEx ib IIC  
only for the connection to a certified intrinsically safe  
circuit

Maximum values:

$$U_i = 30 \text{ V}$$

$$I_i = 320 \text{ mA}$$

$$P_i = 1.1 \text{ W}$$

$$C_i = 6.6 \text{ nF}$$

$L_i$  negligibly small

Switching input  
(Terminal +81, -82)

in the type of protection Intrinsic Safety EEx ib IIC  
only for the connection to a certified intrinsically safe  
circuit

Maximum values:

$$U_i = 30 \text{ V}$$

$$C_i = 3.7 \text{ nF}$$

$L_i$  negligibly small



Switching output  
(Terminal +83, -84)

in the type of protection Intrinsic Safety EEx ib IIC  
only for the connection to a certified intrinsically safe  
circuit

Maximum values:

$$U_i = 30 \text{ V}$$

$$P_i = 500 \text{ mW}$$

$$C_i = 3.7 \text{ nF}$$

$L_i$  negligibly small

Mechanical digital feed back  
(Terminals Limit1 +51, -52  
resp. Limit2 +41, -42)

Maximum values see EC-Type Examination Certificate  
No. PTB 00 ATEX 2049 X

(Slot-type initiators of the company Pepperl & Fuchs)

Cartridge for digital feed back  
(Terminals +51, -52  
resp. +41, -42)

in the type of protection Intrinsic Safety EEx ib IIC  
only for the connection to a certified intrinsically safe  
circuit

Maximum values:

$$U_i = 30 \text{ V}$$

$$P_i = 500 \text{ mW}$$

$$C_i = 3.7 \text{ nF}$$

$L_i$  negligibly small

Plug-In module for  
analogue feed back  
(Terminals +31, -32)

in the type of protection Intrinsic Safety EEx ib IIC  
only for the connection to a certified intrinsically safe  
circuit

Maximum values:

$$U_i = 30 \text{ V}$$

$$P_i = 1.1 \text{ W}$$

$$C_i = 6.6 \text{ nF}$$

$L_i$  negligibly small

Plug-In module for  
shutdown-function  
(Terminals +51 and -52  
resp. +85 and -86)

in the type of protection Intrinsic Safety EEx ib IIC  
only for the connection to a certified intrinsically safe  
circuit

Maximum values:

$$U_i = 30 \text{ V}$$

$$C_i = 3.7 \text{ nF}$$

$L_i$  negligibly small

Local communication  
interface (LKS)

for connection to a programmer outside of the explosion  
hazardous area



(16) Test documents are listed in the test report No.: 04YEX551733.

(17) Special conditions for safe use

The "Local communication interface (LKS)" may only be used outside of the explosion hazardous area.

For use as II 2 D apparatus the equipment may only be used in areas with low risk of mechanical danger.

Cable entries which meets the requirements of EN 50281-1-1:1998 for category 2 D as well as the ambient temperature range have to be used.

(18) Essential Health and Safety Requirements

no additional ones

Translation

1. SUPPLEMENT to

EC-TYPE EXAMINATION CERTIFICATE No. TÜV 04 ATEX 2702 X

Equipment: **Positioner type TZIDC**  
Manufacturer: **ABB Automation Products GmbH**  
Address: **Schillerstrasse 72**  
**D-32425 Minden**

Amentments:

In the future the positioner type TZIDC may also be manufactured according to the test documents listed in the test report. The modifications refer to the internal construction. With the modifications refer to the internal construction the requirement of the category ia are reached.

The marking of the positioner type TZIDC will be in the future also: II 2 G EEx ia IIC T6.

Electrical Data

Signal circuit (Terminal +11, -12)	in the type of protection Intrinsic Safety EEx ib IIC resp. EEx ia IIC only for the connection to a certified intrinsically safe circuit Maximum values: $U_i = 30 \text{ V}$ $I_i = 320 \text{ mA}$ $P_i = 1.1 \text{ W}$ $C_i = 6.6 \text{ nF}$ $L_i$ negligibly small
Switching input (Terminal +81, -82)	in the type of protection Intrinsic Safety EEx ib IIC resp. EEx ia IIC only for the connection to a certified intrinsically safe circuit Maximum values: $U_i = 30 \text{ V}$ $C_i = 3.7 \text{ nF}$ $L_i$ negligibly small
Switching output (Terminal +83, -84)	in the type of protection Intrinsic Safety EEx ib IIC resp. EEx ia IIC only for the connection to a certified intrinsically safe circuit Maximum values: $U_i = 30 \text{ V}$ $P_i = 500 \text{ mW}$ $C_i = 3.7 \text{ nF}$ $L_i$ negligibly small

## 1. Supplement to EC-Type Examination Certificate No. TÜV 04 ATEX 2702 X

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<p>Mechanical digital feed back (Terminals Limit1 +51, -52 resp. Limit2 +41, -42)</p>	<p>Maximum values see EC-Type Examination Certificate No. PTB 00 ATEX 2049 X (Slot-type initiators of the company Pepperl &amp; Fuchs)</p>
<p>Cartridge for digital feed back (Terminals +51, -52 resp. +41, -42)</p>	<p>in the type of protection Intrinsic Safety EEx ib IIC resp. EEx ia IIC only for the connection to a certified intrinsically safe circuit Maximum values: <math>U_i = 30 \text{ V}</math> <math>P_i = 500 \text{ mW}</math> <math>C_i = 3.7 \text{ nF}</math> <math>L_i</math> negligibly small</p>
<p>Plug-In module for analogue feed back (Terminals +31, -32)</p>	<p>in the type of protection Intrinsic Safety EEx ib IIC resp. EEx ia IIC only for the connection to a certified intrinsically safe circuit Maximum values: <math>U_i = 30 \text{ V}</math> <math>P_i = 1.1 \text{ W}</math> <math>C_i = 6.6 \text{ nF}</math> <math>L_i</math> negligibly small</p>
<p>Plug-In module for shutdown-function (Terminals +51 and -52 resp. +85 and -86)</p>	<p>in the type of protection Intrinsic Safety EEx ib IIC resp. EEx ia IIC only for the connection to a certified intrinsically safe circuit Maximum values: <math>U_i = 30 \text{ V}</math> <math>C_i = 3.7 \text{ nF}</math> <math>L_i</math> negligibly small</p>
<p>Local communicationinterface (LKS)</p>	<p>for connection to a programmer outside of the explosion hazardous area</p>

All other data apply unchanged for this Supplement.

The equipment according to EC-Type Examination Certificate TÜV 04 ATEX 2702 X incl. of this 1. supplement also meets the requirements of

**EN 50 014:1997+A1+A2      EN 50 020:2002      EN 50281-1-1:1998**

(16) The test documents are listed in the test report N° 05 YEX 552236.

(17) Special conditions for safe use  
no additional ones

## 1. Supplement to EC-Type Examination Certificate No. TÜV 04 ATEX 2702 X

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(18) Essential Health and Safety Requirements

no additional ones

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Hannover, 2005-06-02

A handwritten signature in blue ink, appearing to read "Strodel".

Head of the  
Certification Body

Translation

**2. SUPPLEMENT**

to Certificate No. TÜV 04 ATEX 2702 X

Equipment: Positioner type TZIDC und TZIDC-200

Manufacturer: ABB Automation Products GmbH  
Address: Schillerstraße 72  
32425 Minden  
Germany

Order number: 8000553774

Date of issue: 2007-07-16

Amendments:

In the future the positioner type TZIDC may also be manufactured according to the test documents listed in the test report. The modifications refer to the internal construction of the item. Further the type TZIDC is supplemented by the type TZIDC-200. The marking of the positioner type TZIDC-200 will be: II 2 G EEx ia IIC T6.

The equipment incl. of this supplement meets the requirements of these standards:

Type TZIDC:

**EN 50 014:1997+A1+A2      EN 50 020:2002      EN 50281-1-1:1998**

Type TZIDC-200:

**EN 50 014:1997+A1+A2      EN 50 020:2002**

The electrical data and all other data apply unchanged for this supplement.

(16) The test documents are listed in the test report No. 07203553774.

(17) Special conditions for safe use

The special conditions will be supplemented at the following point:

Variants, which also comply with the type of protection „Flameproof Enclosure“ according to a separate certificate, may not be operated intrinsically safe after use as apparatus in the type of protection „Flameproof Enclosure“.

2. Supplement to Certificate No. TÜV 04 ATEX 2702 X

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(18) Essential Health and Safety Requirements

no additional ones

TÜV NORD CERT GmbH, Langemarckstraße 20, 45141 Essen, accredited by the central office of the countries for safety engineering (ZLS), Ident. Nr. 0044, legal successor of the TÜV NORD CERT GmbH & Co. KG Ident. Nr. 0032

The head of the certification body

A handwritten signature in black ink, appearing to read "i. V. Schwedt".

Schwedt

Hanover office, Am TÜV 1, 30519 Hannover, Tel.: +49 (0) 511 986-1455, Fax: +49 (0) 511 986-1590

Translation

### 3. SUPPLEMENT

to Certificate No. **TÜV 04 ATEX 2702 X**

Equipment: Positioner type TZIDC and TZIDC-200

Manufacturer: ABB Automation Products GmbH  
 Address: Schillerstraße 72  
 32425 Minden  
 Germany

Order number: 8000354654

Date of issue: 2008-06-24

Amendments:

In future, the positioner type TZIDC and type TZIDC-200 may be manufactured according to the test documents listed in the test report. The modifications refer to the internal construction, the electrical data and the marking of the equipment.

In future, the marking of the positioner will be:

Type TZIDC

**Ex** II 2 G Ex ia IIC T6 bzw. II 2 G Ex ib IIC T6 bzw. II 2 D Ex iaD 21 T51 °C

Type TZIDC-200

**Ex** II 2 G Ex ia IIC T6 bzw. II 2 G Ex ib IIC T6

The permissible ambient temperature ranges in dependence of the temperature class resp. enclosure surface temperature have to be taken from the following table:

Temperature class	Ambient temperature range (II 2 G)
T4	-40 °C to +85 °C
T5	-40 °C to +50 °C
T6	-40 °C to +40 °C

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

Enclosure surface temperature	Ambient temperature range (II 2 D)
T81 °C	- 40°C to +70 °C
T61 °C	- 40°C to +50 °C
T51 °C	- 40°C to +40 °C

3. Supplement to Certificate No. TÜV 04 ATEX 2702 X

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Electrical Data

<p>Signal circuit (Terminal +11, -12)</p>	<p>in the type of protection Intrinsic Safety Ex ib IIC, Ex ia IIC resp. Ex iaD</p> <p>only for the connection to a certified intrinsically safe circuit</p> <p>Maximum values:  <math>U_i = 30 \text{ V}</math>  <math>I_i = 320 \text{ mA}</math>  <math>P_i = 1.1 \text{ W}</math>  <math>C_i = 6.6 \text{ nF}</math>  <math>L_i</math> negligibly small</p>
<p>Switching input (Terminal +81, -82)</p>	<p>in the type of protection Intrinsic Safety Ex ib IIC, Ex ia IIC resp. Ex iaD</p> <p>only for the connection to a certified intrinsically safe circuit</p> <p>Maximum values:  <math>U_i = 30 \text{ V}</math>  <math>I_i = 320 \text{ mA}</math>  <math>P_i = 1.1 \text{ W}</math>  <math>C_i = 4.2 \text{ nF}</math>  <math>L_i</math> negligibly small</p>
<p>Switching output (Terminal +83, -84)</p>	<p>in the type of protection Intrinsic Safety Ex ib IIC, Ex ia IIC resp. Ex iaD</p> <p>only for the connection to a certified intrinsically safe circuit</p> <p>Maximum values:  <math>U_i = 30 \text{ V}</math>  <math>I_i = 320 \text{ mA}</math>  <math>P_i = 500 \text{ mW}</math>  <math>C_i = 4.2 \text{ nF}</math>  <math>L_i</math> negligibly small</p>
<p>Mechanical digital feed back (Terminals Limit1 +51, -52 resp. Limit2 +41, -42)</p>	<p>Maximum values see EC-Type Examination Certificate No. PTB 00 ATEX 2049 X (Slot-type initiators of the company Pepperl &amp; Fuchs)</p>
<p>Cartridge for digital feed back (Terminals +51, -52 resp. +41, -42)</p>	<p>in the type of protection Intrinsic Safety Ex ib IIC, Ex ia IIC resp. Ex iaD</p> <p>only for the connection to a certified intrinsically safe circuit</p> <p>Maximum values:  <math>U_i = 30 \text{ V}</math>  <math>I_i = 320 \text{ mA}</math>  <math>P_i = 500 \text{ mW}</math>  <math>C_i = 3.7 \text{ nF}</math>  <math>L_i</math> negligibly small</p>

3. Supplement to Certificate No. TÜV 04 ATEX 2702 X

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<p>Plug-In module for analogue feed back (Terminals +31, -32)</p>	<p>in the type of protection Intrinsic Safety Ex ib IIC, Ex ia IIC resp. Ex iaD only for the connection to a certified intrinsically safe circuit Maximum values:  <math>U_i = 30 \text{ V}</math>  <math>I_i = 320 \text{ mA}</math>  <math>P_i = 1.1 \text{ W}</math>  <math>C_i = 6.6 \text{ nF}</math>  <math>L_i</math> negligibly small</p>
<p>Plug-In module for shutdown-function (Terminals +51 and -52 resp. +85 and -86)</p>	<p>in the type of protection Intrinsic Safety Ex ib IIC, Ex ia IIC resp. Ex iaD only for the connection to a certified intrinsically safe circuit Maximum values:  <math>U_i = 30 \text{ V}</math>  <math>I_i = 320 \text{ mA}</math>  <math>P_i = 1.1 \text{ W}</math>  <math>C_i = 3.7 \text{ nF}</math>  <math>L_i</math> negligibly small</p>
<p>Local communication interface (LKS)</p>	<p>for connection to a programmer outside of the explosion hazardous area only</p>

All other data apply unchanged for this supplement.

The equipment incl. of this supplement meets also the requirements of these standards:

Type TZIDC:

**EN 60079-0:2006      EN 60079-11:2007      EN 61241-0:2006      EN 61241-11:2006**

Type TZIDC-200:

**EN 60079-0:2006      EN 60079-11:2007**

(16) The test documents are listed in the test report No. 08 203 354654.

(17) Special conditions for safe use

Special conditions will be in the future:

The "Local communication interface (LKS)" may only be used outside of the explosion hazardous area with  $U_m \leq 30 \text{ V DC}$ .

3. Supplement to Certificate No. TÜV 04 ATEX 2702 X

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For use as II 2 D apparatus the equipment may only be used in areas with low risk of mechanical danger.

Cable entries which meet the requirements of EN 61241-11 for category II 2 D as well as the ambient temperature range have to be used.

Variants, which also comply with the type of protection „Flameproof Enclosure“ according to a separate certificate, may not be operated in the type of protection “Intrinsically Safe” after use as apparatus in the type of protection „Flameproof Enclosure“.

(18) Essential Health and Safety Requirements

no additional ones

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The head of the certification body

A handwritten signature in black ink, appearing to read "Schwedt".

Schwedt

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Translation

## 4. SUPPLEMENT

**to Certificate No.** TÜV 04 ATEX 2702 X

Equipment: Positioner type TZIDC and TZIDC-200

Manufacturer: ABB Automation Products GmbH  
Address: Schillerstraße 72  
32425 Minden  
Germany

Order number: 8000365538

Date of issue: 2008-11-13

Amendments:

In future, the positioner type TZIDC and type TZIDC-200 may be manufactured according to the test documents listed in the test report. The modifications refer to the internal construction of the equipment.

The "electrical data", the "special conditions for safe use" and all other data apply unchanged for this supplement.

The equipment incl. of this supplement meets also the requirements of these standards:

type TZIDC:

**EN 60079-0:2006      EN 60079-11:2007      EN 61241-0:2006      EN 61241-11:2006**

type TZIDC-200:

**EN 60079-0:2006      EN 60079-11:2007**

(16) The test documents are listed in the test report No. 08 203 365538.

(17) Special conditions for safe use

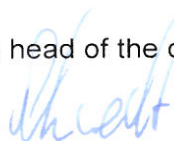
no additional ones

(18) Essential Health and Safety Requirements

no additional ones

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Translation

**5. SUPPLEMENT**

**to Certificate No.** TÜV 04 ATEX 2702 X

Equipment: Positioner type TZIDC and TZIDC-200

Manufacturer: ABB Automation Products GmbH  
Address: Schillerstraße 72  
32425 Minden  
Germany

Order number: 8000386302

Date of issue: 2010-08-25

Amendments:

In future, the positioner type TZIDC may be manufactured according to the test documents listed in the test report.

In the future the positioner type TZIDC may also be operated as a source of auxiliary energy with gases of the group IIA and the temperature class T1.

The "special conditions for safe use" are accordingly supplemented.

The "electrical data" and all other data apply unchanged for this supplement.

The equipment incl. of this supplement meets also the requirements of these standards:

type TZIDC:

**EN 60079-0:2006      EN 60079-11:2007      EN 61241-0:2006      EN 61241-11:2006**

type TZIDC-200:

**EN 60079-0:2006      EN 60079-11:2007**

(16) The test documents are listed in the test report No. 10 203 386302.

(17) Special conditions for safe use

Additional „Special conditions for safe use" for the positioner type TZIDC:

The positioner type TZIDC may only be operated as a source of auxiliary energy with gases of the group IIA and the temperature class T1 in outdoor applications or inside of buildings with sufficient ventilation.

The fed gas must be free of air and oxygen insofar as no explosive atmosphere can occur.

The exhaust gas must always be lead out.

5. Supplement to Certificate No. TÜV 04 ATEX 2702 X

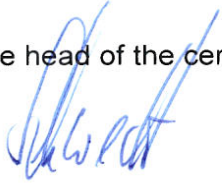
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(18) Essential Health and Safety Requirements

no additional ones

TÜV NORD CERT GmbH, Langemarckstraße 20, 45141 Essen, accredited by the central office of the countries for safety engineering (ZLS), Ident. Nr. 0044, legal successor of the TÜV NORD CERT GmbH & Co. KG Ident. Nr. 0032

The head of the certification body

A handwritten signature in blue ink, appearing to read "Schwedt". The signature is written in a cursive, flowing style.

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