



Prüf- und Zertifizierungsstelle

ZELM Ex



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

(2) Equipment and Protective Systems Intended for Use in
Potentially Explosive Atmospheres - **Directive 94/9/EC**

(3) EC-TYPE-EXAMINATION CERTIFICATE Number:

ZELM 01 ATEX 0063

(4) Equipment: **Pressure and Differential Pressure - Transducer**
type 20.0T. Profibus and type 20.0T. FF

(5) Manufacturer: **ABB Automation Products GmbH**

(6) Address: **Schillerstrasse 72, D-32425 Minden**

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

(8) The Prüf- und Zertifizierungsstelle ZELM Ex, notified body No. 0820 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment 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 ZELM Ex 0070112083.

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

EN 50 014: 1997+A1+A2

EN 50 020: 1994

EN 50 284: 1999

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

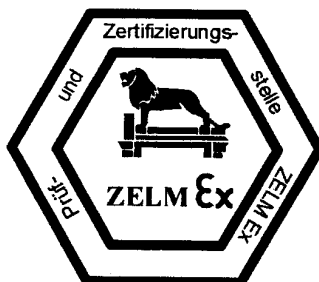
(11) This EC-type-examination Certificate relates only to the design and construction of the specified equipment in accordance with Directive 94/9/EC. Further requirements of this Directive apply to the manufacture and supply of this equipment.

(12) The marking of the equipment shall include the following:



II 1/2 G EEx ia IIB/IIC T6

Zertifizierungsstelle **ZELM Ex**



Braunschweig, May 14, 2001


Dipl.-Ing. Harald Zelm

Sheet 1/4

EC-type-examination Certificates without signature and stamp are not valid. The certificates may only be circulated without alteration. Extracts or alterations are subject to approval by the Prüf- und Zertifizierungsstelle ZELM Ex. In the case of dispute, the German text shall prevail.



(13) **SCHEDULE**

(14) **EC-TYPE-EXAMINATION CERTIFICATE ZELM 01 ATEX 0063**

(15) Description of equipment

Pressure, Differential Pressure Transducer with optional process temperature recording with two wire connection and digital communication via fieldbus protocol PROFIBUS-PA or FOUNDATION FIELDBUS (FF).

In the hazardous area the Pressure, Differential Pressure Transducer is used for measurement and conversion of the physical quantities pressure above atmospheric, differential pressure and absolute pressure into a digital standard signal.

The Pressure, Differential Pressure Transducer is mounted into a housing meeting the degree of protection IP ≥ 65 according to EN 60529:1991.

The Pressure, Differential Pressure Transducer is allowed to be installed into the partition between the hazardous areas of category 1G and category 2G.

The operating conditions for service with flammable measuring mixtures – which are non-explosive - and higher pressures are to be taken from the instruction manual and operation manual respectively.

The attached pressure works on the ceramic measuring sensor or the silicon measuring sensor.

Maximum permissible ambient temperatures depending on the temperature class are shown in the following table:

Temperature class	lower limit of ambient temperature	upper limit of ambient temperature
T 4	-40 °C	+85 °C
T 5	-40 °C	+40 °C
T 6	-40 °C	+40 °C

Type of protection: Pressure and Differential Pressure Transducer type 20.0T. ... **II 1/2 G EEx ia IIC T6**

For mounting at category 1G:

Transducer with measuring elements without or with pressure sensor **II 1/2 G EEx ia IIC T6 resp. EEx ib IIC T6**

Having the capacitive measuring element type 2020T. ... (≤ 400 mbar) and a supply with an intrinsically safe circuit EEx ib IIB/IIC the use is permitted for category 2G only.



Schedule to EC-TYPE-EXAMINATION CERTIFICATE ZELM 01 ATEX 0063

Electrical data

Supply and signal circuit (terminals signal +,-) type of protection Intrinsic Safety EEx ib IIB/IIC
resp. EEx ia IIB/IIC
for connection to FISCO supply units with rectangular or trapezoidal characteristics
maximum values:

II 1/2G EEx ia resp. ib IIC T4...T6 $U_i = 17,5 \text{ V}$
 $I_i = 360 \text{ mA}$
 $P_i = 2,52 \text{ W}$

II 1/2G EEx ia resp. ib IIB T4...T6 $U_i = 17,5 \text{ V}$
 $I_i = 380 \text{ mA}$
 $P_i = 5,32 \text{ W}$

resp. for connection to supply unit or barrier with linear characteristics
maximum values:

II 1/2G EEx ia resp. ib IIC T4...T6 $U_i = 24 \text{ V}$
 $I_i = 250 \text{ mA}$
 $P_i = 1,2 \text{ W}$

effective internal inductance $L_i \leq 10 \mu\text{H}$
effective internal capacitance is negligibly small

Temperature sensor circuit: type of protection Intrinsic Safety EEx ia IIC
supply (terminals 12, 14) resp. EEx ib IIC
signal (terminals 11, 13) for connection to passive intrinsically safe sensors only
maximum values:

$U_o = 10,5 \text{ V}$
 $I_o = 1,5 \text{ mA}$
 $P_o = 4 \text{ mW}$
 $C_o = 2,4 \mu\text{F}$
 $L_o = 1 \text{ H}$

References:

The instruction manual / operation manual has to be considered.

Having the capacitive measuring element type 2020T. .. ($\leq 400 \text{ mbar}$) and a supply with an intrinsically safe circuit EEx ib IIB/IIC the use is permitted for category 2G only.



Prüf- und Zertifizierungsstelle

ZELM Ex

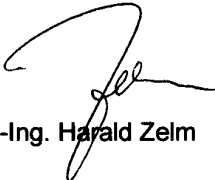


Schedule to EC-TYPE-EXAMINATION CERTIFICATE_ZELM 01 ATEX 0063

- (16) Report No.
ZELM Ex 0070112083
- (17) Special conditions for safe use
not applicable
- (18) Essential Health and Safety Requirements
met by standards

Zertifizierungsstelle ZELM Ex

Braunschweig, May 14, 2001


Dipl.-Ing. Harald Zelm



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EC-type-examination Certificates without signature and stamp are not valid. The certificates may only be circulated without alteration. Extracts or alterations are subject to approval by the Prüf- und Zertifizierungsstelle ZELM Ex. In the case of dispute, the German text shall prevail.



Prüf- und Zertifizierungsstelle

ZELM Ex



1. Supplement

(Supplement according to EC-Directive 94/9 Annex III letter 6)

to EC-type-examination Certificate

ZELM 01 ATEX 0063

(Translation)

Equipment: **Pressure and Differential Pressure - Transducer
type 20.0T. Profibus and type 20.0T. FF**

Manufacturer: **ABB Automation Products GmbH**

Address: **Schillerstrasse 72, D-32425 Minden**

Description of supplement

Some additional non-safety relevant components and alternatively applicable components have been fixed, changed or omitted for the Pressure, Differential Pressure Transducer type 20.0T. Profibus und FF.

The type of protection will be in future:

II 1/2 GD T 50°C EEx ia IIC T6 resp. II 1/2 GD T 95°C EEx ia IIC T4

The model code may also be in future:

type 26... Profibus and FF.

Instead of the points of the model code other letter- or numeral- combinations will be stated, which are describing several variations and versions of the equipment.

type of protection: **II 1/2 GD T 50°C EEx ia IIC T6 resp. II 1/2 GD T 95°C EEx ia IIC T4**

Pressure,
Differential Pressure Transducer
20.0T. HART resp. 26... HART **II 1/2 GD T 50°C EEx ia IIC T6**

For mounting at category 1G resp. 1D:

Transducer with measuring elements **II 1/2 GD T 50°C EEx ia IIC T6**
without or with pressure sensor resp. **EEx ib IIC T6**

The capacitive measuring element type 2020T. resp. type 26.A. or 26.G. (≤ 400 mbar) and a supply with an intrinsically safe circuit EEx ib IIB/IIC must not be mounted into the separation wall between category 1G and category 2G.

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Prüf- und Zertifizierungsstelle

ZELM Ex



1. Supplement of the EC-Type-Examination Certificate ZELM 01 ATEX 0063

The electrical data of the different versions and the ambient temperature range remain unchanged.

The Pressure, Differential Pressure Transducer may be manufactured in future in accordance with this supplement.

References:

The instruction manual has to be observed. The permission of installation of the Pressure, Differential Pressure Transducer into the separation wall between hazardous areas of category 1G or 1D and category 2G or 2D is to be considered in particular.

For the use in dust atmosphere the degree of protection \geq IP 65 must be ensured in regard to the enclosure and the cable entry fitting.

Report No.

ZELM Ex 0060212108

Special conditions for safe use

not applicable

Essential Health and Safety Requirements

met by adherence to the standards

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

EN 50 020: 1994

EN 50 284: 1999

Zertifizierungsstelle **ZELM Ex**


Dipl.-Ing. Harald Zelm



Braunschweig, March 12, 2002

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EC-type-examination Certificates without signature and stamp are not valid. The certificates may only be circulated without alteration. Extracts or alterations are subject to approval by the Prüf- und Zertifizierungsstelle ZELM Ex. In the case of dispute, the German text shall prevail.



Prüf- und Zertifizierungsstelle

ZELM Ex



2. Supplement

(Supplement according to EC-Directive 94/9 Annex III letter 6)

to EC-type-examination Certificate

ZELM 01 ATEX 0063

Equipment: **Pressure and Differential Pressure - Transducer
type 20.0T. and 263.. / 265.. / 267.. / 269.. Profibus and FF**

Manufacturer: **ABB Automation Products GmbH**

Address: **Schillerstrasse 72, D-32425 Minden**

Description of supplement

The 2. Supplement to EC-type-examination Certificate was necessary concerning the change of the circuit design without relevant layout changes. The diaphragm may be alternatively fitted with a protective coating having a maximum thickness of 0.2 mm.

The type of protection, the electrical data and all further data remain unchanged.

The Pressure, Differential Pressure Transducer may be manufactured in future in accordance with this supplement.

References:

The instruction manual has to be observed.

For the use of coated diaphragms in dust atmosphere the reference for propagating brush discharge is to be considered in particular.

Report No.

ZELM Ex 0540317192

Special conditions for safe use

not applicable

Essential Health and Safety Requirements

met by adherence to the standards

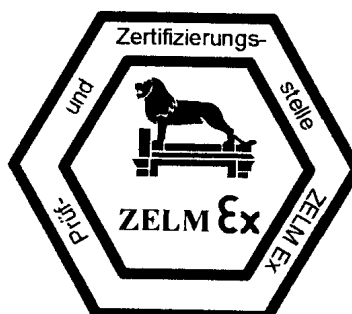
**EN 50 014: 1997+A1+A2
EN 50281-1-1:1998**

EN 50 020: 1994

EN 50 284: 1999

Zertifizierungsstelle ZELM Ex


Dipl.-Ing. Harald Zelm



Braunschweig, June 05, 2003

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Prüf- und Zertifizierungsstelle

ZELM Ex



3. Supplement

(Supplement according to EC-Directive 94/9 Annex III letter 6)

to EC-type-examination Certificate

ZELM 01 ATEX 0063

Equipment: **Pressure and Differential Pressure - Transducer
type 20.0T.Profibus and FF**

Manufacturer: **ABB Automation Products GmbH**

Address: **D-32425 Minden**

Description of supplement

The 3. Supplement to EC-type-examination Certificate concerns in particular the inner construction without essential changes of the printed circuit board layout.

The technical data, the marking and the references mentioned in the EC-type-examination Certificate remain unchanged.

Report No.

ZELM Ex 1510612536

Special conditions for safe use

not applicable

Essential Health and Safety Requirements

The essential health and safety requirements are fulfilled further on by adherence to the standards:

EN 50014:1997+A1+A2

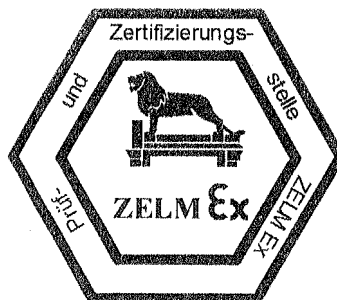
EN 50020:2002

EN 50284:1999

Zertifizierungsstelle ZELM Ex

Braunschweig, June 20, 2007


Dipl.-Ing. Harald Zelm



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Prüf- und Zertifizierungsstelle

ZELM Ex



4. Supplement

(Supplement according to EC-Directive 94/9 Annex III letter 6)
to EC-type-examination Certificate

ZELM 01 ATEX 0063

Equipment: **Pressure and Differential Pressure - Transducer type 20.0T Profibus and FF and type 263 .. / 265 .. / 267 .. / 269 .. Profibus and FF**

Manufacturer: **ABB Automation Products GmbH**

Address: **Schillerstrasse 72, D-32425 Minden**

Description of supplement

The 4. Supplement to EC-type-examination Certificate concerns the electrical data of the device for applications with FISCO system.

Further, the agreement of the device with the current standards has been checked and the marking of the device has been adapted correspondingly.

Electrical data of the device for applications as FISCO field device are in the future:

Electrical Data

Supply and signal circuit (terminals signal +,-) type of protection Intrinsic Safety, only for connection to certified power supply device according to FISCO- Concept with following maximum values:

$$U_i = 17,5 \text{ V}$$

$$I_i = 500 \text{ mA}$$

$$P_i = 8,75 \text{ W}$$

effective internal capacitance $C_i = 5 \text{ nF}$

effective internal inductance $L_i = 10 \text{ } \mu\text{H}$

The marking of the device is in the future:

II 1/2G Ex ia IIC T6 resp. T4

II 1/2D Ex iaD 20 T50°C resp. T95°C

Ta = - 40°C to 40°C resp. 85°C

All other data and references mentioned in the EC-type-examination Certificate remain unchanged and are also valid for this 4. Supplement.

The equipment may be manufactured in future also in accordance with these changes.

Report No.

ZELM Ex 0860817613

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Prüf- und Zertifizierungsstelle ZELM Ex



4. Supplement of the EC-Type-Examination Certificate ZELM 01 ATEX 0063

Essential Health and Safety Requirements

Within the scope of this 4. Supplement the agreement of the device with the current standards has been checked.

The essential health and safety requirements are still fulfilled by compliance with the following Standards:

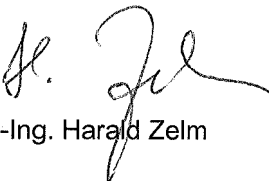
EN 60079-0:2006
EN 61241-0:2006

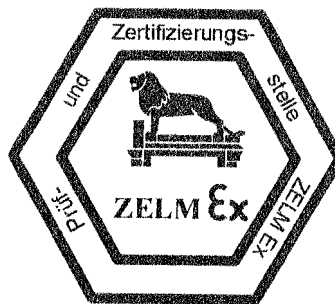
EN 60079-11:2007
EN 61241-11:2006

EN 60079-26:2004

EN 60079-27:2006

Zertifizierungsstelle ZELM Ex


Dipl.-Ing. Harald Zelm



Braunschweig, June 10, 2008