



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 00 ATEX 0037

(4) Equipment: **Conductivity Transmitter type Cond 7100 PA**

(5) Manufacturer: **Mettler Toledo GmbH**

(6) Address: **CH - 8902 Urdorf**

(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 0120019047.

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

EN 50 014: 1997

EN 50 020: 1994

(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 2 (1) G EEx ia IIC T4

Zertifizierungsstelle ZELM Ex

Dipl.-Ing. Harald Zelm



Braunschweig, June 26, 2000

Sheet 1/3

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 case of dispute, the German text shall prevail.



SCHEDULE

(13)

(14) **EC-TYPE-EXAMINATION CERTIFICATE ZELM 00 ATEX 0037**

(15) Description of equipment

The Conductivity Transmitter type Cond 7100 PA is preferably used for the recognition and processing of electrochemical quantities and is equipped with an input for inductive conductivity measurements and a temperature measuring input.

The maximum permissible ambient temperature is 55 °C.

Electrical data

BUS- / Supply loop
(terminals 11 and 10)

type of protection Intrinsic Safety
resp.

EEx ia IIC/IIB
EEx ib IIC/IIB

only for the connection to a certified intrinsically safe circuit
(for example FISCO – supply unit) with the following maximum values:

	FISCO-supply unit	linear barrier
U_{omax}	17,5 V	24 V
I_{omax}	280 mA	200 mA
P_{omax}	4,9 W	1,2 W

effective internal capacitance:

$C_i \leq 1$ nF

effective internal inductance:

$L_i \leq 10$ μ H

conductivity measuring loop
(terminals 1, 2, 3, 4 and 5)

type of protection Intrinsic Safety
resp.

EEx ia IIC/IIB
EEx ib IIC/IIB

maximum values:

$U_o = 11,8$ V

$I_o = 145$ mA

$P_o = 165$ mW

(trapezoidal characteristic)

effective internal capacitance:

$C_i \leq 5$ nF

The effective internal inductance is negligibly small.

IIC resp. IIB

max. permissible external inductance

1,3 mH

7 mH

max. permissible external capacitance

1,5 μ F

9,9 μ F

or

IIC resp. IIB

max. permissible external inductance

1 mH

5 mH

max. permissible external capacitance

350 nF

977 nF



Prüf- und Zertifizierungsstelle

ZELM Ex



SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE ZELM 00 ATEX 0037

Temperature measuring loop
(terminals 7 and 8)

type of protection Intrinsic Safety
resp.

EEx ia IIC/IIB

EEx ib IIC/IIB

maximum values:

$U_o = 5,9 \text{ V}$

$I_o = 3,71 \text{ mA}$

$P_o = 5,5 \text{ mW}$

(linear characteristic)

effective internal capacitance:

$C_i \leq 250 \text{ nF}$

The effective internal inductance is negligibly small.

IIC resp. IIB

max. permissible external inductance 1000 mH 1000 mH

max. permissible external capacitance 42,7 μF 1000 μF

(only valid if external inductance and external capacitance
do not exist in concentrated form at the same time)

IIC resp. IIB

max. permissible external inductance 1 mH 5 mH

max. permissible external capacitance 1,85 μF 6,85 μF

(also valid if external inductance and external capacitance
exist in concentrated form at the same time)

EP
(terminal 9)

for the connection to the equipotential bonding system

References:

Connecting the equipotential bonding is absolutely required to guarantee electrostatic leakage.

The BUS- / Supply loop is safely electrically isolated from the other loops up to a voltage of 60 V.

The operation manual has to be considered.

(16) Report No.

ZELM Ex 0120019047

(17) Special conditions for safe use

not applicable

(18) Essential Health and Safety Requirements

met by standards

Zertifizierungsstelle ZELM Ex

Dipl.-Ing. Harald Zelm



Braunschweig, June 26, 2000

Sheet 3/3

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1. Supplement

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

to EC-type-examination Certificate

ZELM 00 ATEX 0037

Equipment: **Conductivity Transmitter Type Cond 7100e FF**
Manufacturer: **Mettler-Toledo GmbH**
Address: **Im Hackacker 15, CH – 8902 Urdorf**

Description of supplement

The Conductivity Transmitter Type Cond 7100 PA was extended by the Conductivity Transmitter Type Cond 7100e FF with Foundation Fieldbus communication interface.

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

The Foundation Fieldbus version of the Transmitter may be manufactured in future in consideration of this supplement.

References:

The Operating Instructions has to be considered.

Report No.: ZELM Ex 1020417315

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 50 020: 1994

Zertifizierungsstelle ZELM Ex



Braunschweig, October 28, 2004


Dipl.-Ing. Harald Zelm

Sheet 1 / 1

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This English version is based on the German text. In the case of dispute, the German text shall prevail.

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