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:

Ex **II 2 (1) G EEx ia IIC T4**

Zertifizierungsstelle **ZELM Ex**

Dipl.-Ing. Harald Zelm

Zertifizierungs- und Prüf- stelle ZELM Ex

Braunschweig, June 26, 2000

(13) # SCHEDULE

(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 EEx ia IIC/IIB
resp. 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: $L_i \leq 10$ µH

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

type of protection Intrinsic Safety EEx ia IIC/IIB
resp. EEx ib IIC/IIB

maximum values: $U_o = 11,8$ V
$I_o = 145$ mA
$P_o = 165$ mW
(trapeziodal 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 µF		9,9 µF

or

	IIC	resp.	IIB
max. permissible external inductance	1 mH		5 mH
max. permissible external capacitance	350 nF		977 nF

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 V
I_o = 3,71 mA
P_o = 5,5 mW
(linear characteristic)

effective internal capacitance: $C_i \leq 250$ 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 electrostatical 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