



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 0045**

(4) Equipment: **FSK-Modem**

(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 0360012059.

(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 G [EEx ib] IIC**

Zertifizierungsstelle **ZELM Ex**

Braunschweig, November 6, 2000

  
Dipl.-Ing. H. 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.



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(13)

## SCHEDULE

(14)

**EC-TYPE-EXAMINATION CERTIFICATE ZELM 00 ATEX 0045**

(15) Description of equipment

The FSK-Modem is used for the digital communication with FSK (Frequenz Shift Keying) according to the HART-Protocol between the intrinsically safe transmitters and non-intrinsically safe circuits of non-explosion protected standard computers.

Electrical data

Supply and interface circuit  
(Sub-D9-socket connector)

connection to the RS 232 type interface of the computer  
 $U = 5 \dots 15 \text{ V}$  ,  $R_i \approx 300 \Omega$

Output circuit  
(sockets)

type of protection Intrinsic Safety EEx ib IIC

maximum values:  $U_o = 1,4 \text{ V}$   
 $I_o = 25 \text{ mA}$

for connection to certified intrinsically safe circuits  
with  $U_i \leq 45 \text{ V}$

The effective internal inductance and effective internal capacitance are negligibly small.

The permissible external inductances and capacitances result from the addition of the voltages and currents of the interconnected circuits.

References:

The circuits of the equipment are safely electrically isolated up to a peak value of the nominal voltage of 375 V.

The instruction manual has to be observed.

(16) Report No. ZELM Ex 0360012059

(17) Special conditions for safe use

not applicable

(18) Essential Health and Safety Requirements

met by standards

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