



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 02 ATEX 0096X

(4) Equipment: **Spark-gap type ExFS C1**

(5) Manufacturer: **DEHN + SÖHNE GmbH + Co. KG.**

(6) Address: **D-92318 Neumarkt**

(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 0410215130

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

EN 50 014: 1997 +A1+A2 EN 50 028: 1987

(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, examination and tests of the specified equipment or protective system in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this Certificate.

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



II 2 G EEx m II T3

Zertifizierungsstelle ZELM Ex

Braunschweig, July 15, 2002


Adolf Gruber



Sheet 1/2

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 02 ATEX 0096X

(15) Description of equipment

The spark-gap type ExFS C1 prevents occurrence of overvoltages in plants with cathodic corrosion protection or the occurrence of inadmissible potential differences in plants which are usually de-energized. The spark-gap causes a shorting while the short-term occurrence of overvoltage of normally electrically separated sections.

The maximum allowed ambient temperature is 80°C.

Electrical data

DC Spark-over voltage (100 V/s)	U_{ag}	=	100	V	± 20%
AC Spark-over voltage (50 Hz)	U_{aw}	=	70	V	± 20%
Impulse spark-over voltage (1 kV/μs)	$U_{as typ}$	=	650	V	
	$U_{max typ}$	=	950	V	
Nominal discharge current	I_{wN}	=	100	A	
Nominal impulse current	I_{sN}	=	100	kA	

(16) Report No.

ZELM Ex 0410215130

(17) Special conditions for safe use

1. The spark-gap has to be installed that potential differences are avoided between the terminals. If this is not possible, it must be assured that equalizing currents are surely avoided. As far as this can not be guaranteed by the plant conception and corresponding maintenance actions, a protection is to be carried out by an appropriate housing having a separate EC-type-examination Certificate. The housing must assure a degree of protection of at least IP 54 in accordance with EN 60529:1991.
2. If using the spark-gap in plants with cathodic corrosion protection the continuously active voltage must not exceed the maximum value of 50 V.
3. The spark-gap has to be mounted without mechanical tensions.
4. The operating instruction has to be considered

(18) Essential Health and Safety Requirements

met by standards

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Sheet 2/2

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