Prüf- und Zertifizierungsstelle

ZELM Ex

(1) EC-TYPE-EXAMINATION CERTIFICATE

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

(3) EC-TYPE-EXAMINATION CERTIFICATE Number:

ZELM 03 ATEX 0165X

(4) Equipment: **Temperature Sensor type Ex TF .. -100 Ks.**

(5) Manufacturer: **Erich Ott**

(6) Address: **D-65189 Wiesbaden**

(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 0260315201.

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

EN 50 014: 1997+A1+A2 **EN 50019 :2000** **EN 50028 :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:

Ex **II 2 G EEx em II T6**

Zertifizierungsstelle **ZELM Ex**

Dipl.-Ing. Harald Zelm

Zertifizierungs- und Prüf- stelle ZELM Ex

Braunschweig, September 2nd, 2003

Prüf- und Zertifizierungsstelle ZELM Ex • Siekgraben 56 • D-38124 Braunschweig

(13) # SCHEDULE

(14) ## EC-TYPE-EXAMINATION CERTIFICATE ZELM 03 ATEX 0165X

(15) Description of equipment

The temperature sensor is used for the recording of temperatures at pipelines under isolation or in protective casings. The measured value is registered by a Pt 100 or Ni 100 resistance. The supply occurs by a corresponding controller unit, that provides a appropriate short-circuit protection. The permanently connected cable can optionally be carried out with a corrugated stainless steel hose.

The relation between the maximum ambient temperature respectively sensor temperature and the temperature class should be taken from the following table:

	temperature class					
	T6	T5	T4	T3	T2	T1
max. permissible ambient temperature	40	55	90	155	200	200
max. permissible sensor temperature	40	55	90	155	250	400

The lower temperature limit conducts to -40 °C.

Electrical data

Nominal voltage	2,3 V
Nominal measuring current	1 – 10 mA

References:

The Special Conditions and notes about the mounting and installation must be considered in addition to the general notes in the operating manual.

(16) Report No.

ZELM Ex 0370312213

(17) Special conditions for safe use

1. The Thermometer Sensor Line including the sensor are to be installed so that they are protected against mechanical damages sufficiently.
2. The minimum bending radius for the sensor line is 40 mm and must not exceed.
3. The Temperature Sensor may be connected only onto feeding devices provided for that and authorized for the operation of the system for passive resistance sensors according to the standard appropriate for the element. The electric operating values must not be exceeded.
4. A fuse with a breaking capacity of at least 1500 A is to be pre-connected to every temperature sensor in suitable manner. The fuse to be pre-connected can be placed in the corresponding supply unit or transmitter.

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EC-TYPE-EXAMINATION CERTIFICATE ZELM 03 ATEX 0165X

(18) Essential Health and Safety Requirements

met by standards

Zertifizierungsstelle ZELM Ex Braunschweig, September 2nd, 2003

Dipl.-Ing. Harald Zelm