



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 99 ATEX 0010**

(4) Equipment: **Head-mounted transmitter SINEAX VK 616 type 616-73**

(5) Manufacturer: **Camille Bauer AG**

(6) Address: **Aargauerstrasse 7, CH-5610 Wohlen**

(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 0119918051.

(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 T6

Zertifizierungsstelle **ZELM Ex**

Braunschweig, June 30, 2000

Dipl.-Ing. Harald Zelm

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## SCHEDULE

(13)

(14) **EC-TYPE-EXAMINATION CERTIFICATE ZELM 99 ATEX 0010**

(15) Description of equipment

The head-mounted transmitter SINEAX VK 616 type 616-73 is a two-wire transmitter for the temperature measurement. The head-mounted transmitter is used for the measurement and conversion of the input variables into a normalized output signal. Resistance and temperature are detected as measured variables by means of resistance thermometers or thermocouples.

The head-mounted transmitter is determined to mounting on a metallic case or an plastic case with a surface resistance  $< 10^9 \Omega$  which at least achieves the degree of protection IP20 in accordance with EN 60529:1991.

The maximum permissible ambient temperature conducts depending on the maximum load  $P_i$  of the intrinsic safety output circuit and the temperature class according to the following table:

Maximum load	Temperature class		
$P_i$	T6	T5	T4
1000 mW	41 °C	56 °C	80 °C
900 mW	45 °C	60 °C	80 °C
800 mW	50 °C	65 °C	80 °C
700 mW	55 °C	70 °C	80 °C
660 mW	57 °C	72 °C	80 °C

(Table 1)

The lowest permissible ambient temperature is -40 °C.

### Electrical data

Output circuit  
(terminals + and -)

type of protection Intrinsic Safety EEx ia IIC resp. EEx ia IIB  
for connection to an intrinsically safe circuit with the following  
maximum values:

$$\begin{aligned} U_i &= 30 & \text{V} \\ I_i &= 100 & \text{mA} \\ P_i &\leq 1 & \text{W (see table 1)} \end{aligned}$$

effective internal capacitance and effective internal inductance  
are negligibly small.



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## Schedule to EC-TYPE-EXAMINATION CERTIFICATE ZELM 99 ATEX 0010

Programming circuit

type of protection Intrinsic Safety EEx ia IIC  
only for a short-time connection of a standard personal computer via the programming cable type PK 610 with the EC-type-examination Certificate ZELM 99 ATEX 0011 to suitable connections.

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

Input circuit  
(terminals 1, 2, 3, 4)

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

maximum values:

$$U_o = 6 \text{ V}$$

$$I_o = 15 \text{ mA}$$

$$P_o = 39 \text{ mW}$$

(trapezoidal output characteristic)

**IIC    bzw.    IIB**

effective external inductance    5 mH    10 mH

effective external capacitance    990 nF    1760 nF

### References:

The output circuit and the input circuit are galvanically connected with each other.

The instruction manual has to be observed.

### (16) Report No.

ZELM Ex 0119918051

### (17) Special conditions for safe use

not applicable

### (18) Essential Health and Safety Requirements

met by standards

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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.