



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 0043

(4) Equipment: **Head-mounted transmitter SINEAX VK 616 type 616-74**

(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 0330019058.

(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, October 26, 2000

Adolf Gruber

Sheet 1/3



SCHEDULE

(13)

(14) **EC-TYPE-EXAMINATION CERTIFICATE ZELM 00 ATEX 0043**

(15) Description of equipment

The head-mounted transmitter SINEAX VK 616 type 616-74 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. Input and Output are safely electrically isolated from each other. Resistance and temperature are detected as measured variables by means of resistance thermometers or thermocouples.

The head-mounted transmitter is determined to be mounted in a metallic case or a 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 depends on the maximum load P_i of the intrinsically safe 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	70 °C
900 mW	45 °C	60 °C	80 °C
800 mW	50 °C	65 °C	80 °C
700 mW	50 °C	65 °C	80 °C
660 mW	50 °C	65 °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:

$$\begin{aligned} U_i &= 30 & \text{V} \\ I_i &= 160 & \text{mA} \\ P_i &\leq 1 & \text{W (see table 1)} \end{aligned}$$

effective internal capacitance and effective internal inductance are negligibly small.



Schedule to EC-TYPE-EXAMINATION CERTIFICATE ZELM 00 ATEX 0043

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: $\begin{aligned}U_o &= 6 \text{ V} \\I_o &= 8 \text{ mA} \\P_o &= 26 \text{ mW}\end{aligned}$ (trapezoidal output characteristic)										
		<table><thead><tr><th></th><th>IIC</th><th>bzw. IIB</th></tr></thead><tbody><tr><td>effective external inductance</td><td>7 mH</td><td>10 mH</td></tr><tr><td>effective external capacitance</td><td>1194 nF</td><td>1964 nF</td></tr></tbody></table>		IIC	bzw. IIB	effective external inductance	7 mH	10 mH	effective external capacitance	1194 nF	1964 nF
	IIC	bzw. IIB									
effective external inductance	7 mH	10 mH									
effective external capacitance	1194 nF	1964 nF									

References:

The input circuit and the programming circuit are safely electrically isolated from the output circuit.

The instruction manual has to be observed.

(16) Report No.

ZELM Ex 0330019058

(17) Special conditions for safe use

not applicable

(18) Essential Health and Safety Requirements

met by standards

Zertifizierungsstelle **ZELM Ex**

Braunschweig, October 26, 2000

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