



(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:

**PTB 98 ATEX 2176**



(4) Equipment: DC Signal Isolator SINEAX 84-211-...

(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 Physikalisch-Technische Bundesanstalt, notified body No. 0102 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 PTB Ex 98-28381.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:  
**EN 50014:1997** **EN 50020:1994**

(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 bzw. II (1) G [EEx ia] IIC

Zertifizierungsstelle Explosionsschutz  
By order

Braunschweig, October 15, 1998

In the absence of Dr.-Ing. Ulrich J. Meyer  
Regierungsdirektor



(13) **S c h e d u l e**

(14) **EC-TYPE-EXAMINATION CERTIFICATE No. PTB 98 ATEX 2176**

(15) Description of equipment

The DC signal isolator SINEAX 84-2I1-... is used for the electrical isolation of load independent direct current  $\leq 22$  mA between the explosion hazardous and the non-explosion hazardous area, without the necessity of an auxiliary power. Depending on the type of construction, the input circuit or the output circuit is designed in type of protection "Intrinsic Safety".

The DC-signal isolator shall only be used in the non-explosion hazardous area.

**Electrical data**

Intrinsically safe input circuit – non intrinsically safe output circuit type (84-2I1-11)

Input circuit (screw terminals 2(E+) and 1(E-)) type of protection Intrinsic Safety EEx ib IIC  
 maximum values  
 $U_i = 30$  V  
 $I_i = 100$  mA

The internal inductances and capacitances of the DC signal isolator are negligibly small.

output circuit (screw terminals 4(A+) and 3(A-))  $U_N = 15$  V  
 $I_N \leq 22$  mA  
 maximum voltage  $U_m = 253$  V

Intrinsically safe output circuit – non intrinsically safe input circuit type (84-2I1-12)

output circuit (screw terminals 4(A+) and 3(A-)) type of protection Intrinsic Safety EEx ia IIC  
 maximum values  
 $U_o = 12,6$  V  
 $I_o = 100$  mA  
 $P_o = 315$  mW  
 Linear output characteristic

<b>EEx ia</b>	<b>IIC</b>	<b>IIB</b>
max. permissible external inductance	4,0 mH	15 mH
max. permissible external capacitance	1,15 $\mu$ F	7,4 $\mu$ F

## Schedule to EC-TYPE-EXAMINATION CERTIFICATE No. PTB 98 ATEX 2176

input circuit  $U_N = 15 \text{ V}$   
(screw terminals 2(E+) and 1(E-))  $I_N \leq 22 \text{ mA}$   
maximum voltage  $U_m = 253 \text{ V}$

The input circuit of both types is safely electrically isolated from the output circuit up to a peak value of the nominal voltage of 375 V.

(16) Report PTB Ex 98-28381

(17) Special conditions for safe use

not applicable

(18) Essential Health and Safety Requirements

met by standards

Zertifizierungsstelle Explosionsschutz  
By order

Braunschweig, October 15, 1998

In the absence of Dr.-Ing. U. Johannsmeyer  
Regierungsdirektor

*c. A. W.*

