



(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 97 ATEX 2191

(4) Equipment: Isolation amplifier SINEAX TV 808 type 808-1... and
Isolation amplifier SIRAX TV 808 type 808-6...

(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 97-27160.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
DIN EN 50014:1994-03 DIN EN 50020:1996-04 DIN EN 50014/prA1:1996

(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 (1) G [EEx ia] IIC**

Zertifizierungsstelle Explosionsschutz

By order


Dr.-Ing. U. Johannsmeyer
Oberregierungsrat



Braunschweig, 26.09.1997

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Schedule

(13)

(14)

EC-type-examination Certificate No. PTB 97 ATEX 2191

(15) Description of equipment

The isolation amplifier is used for the electrical isolation and transducing of the input quantity into a normalized output signal. Direct current - and direct voltage signals are detected as measured quantities.

The isolation amplifier SIRAX TV 808 of type 808-6... is only used to be plugged on the associated apparatus rack or on the apparatus rack SIRAX BP 902 of type 902-2... with EC-type-examination certificate PTB 97 ATEX 2113, manufactured by Camille Bauer AG.

The isolation amplifier shall be installed outside the explosion hazardous area only.

The maximum permissible ambient temperature of the isolation amplifier SINEAX TV 808 of type 808-1... is 55 °C.

The maximum permissible ambient temperature of the isolation amplifier SIRAX B808 of type 808-6... is 40 °C.

Electrical data

The indicated terminal clamps refer to the design SINEAX TV 808 of type 808-1...

The indicated connections refer to the design SIRAX TV 808 of type 808-6...

| | |
|---|---|
| Auxiliary power (terminal clamps 10 and 5 resp. 14 and 20) | type 808-113... resp. type 808-613... direct voltage 24 - 60 V -15% / +33% (U _m = 125 V) or alternating voltage 24 - 60 V ± 15% (U _m = 253 V) resp. type 808-114... resp. type 808-614... direct voltage 85 - 110 V -15% / +10% (U _m = 125 V) or alternating voltage 85 - 230 V ± 10% (U _m = 253 V) |
| Input circuit (terminal clamps 1, 6, 11 resp. connections 1, 3, 5) | type of protection Intrinsic Safety EEx ia IIC/IIB resp. EEx ib IIC/IIB (linear output characteristic) maximum values: U _o = 6 V I _o = 63 μA |

Schedule to EC-type-examination Certificate No. PTB 97 ATEX 2191

IIC resp. IIB

max. permissible external inductance 1 H 1 H
 max. permissible external capacitance 40 μ F 1000 μ F

resp.

only for connection to certified intrinsically safe circuits with the following maximum value:

$$U = 30 \text{ V}$$

effective internal inductance: $L_i = 20 \mu\text{H}$

effective internal capacitance: $C_i = 20 \text{ nF}$

The following table shows the assignment of the maximum permissible external inductance (L_o) and capacitance (C_o) to the maximum voltage (U_i) and maximum current (I_i) for the connection to a certified intrinsically safe active circuit with linear (resistive) current limiting:

| U_i | I_i | explosion group | | | |
|-------|--------|-----------------|--------|--------|---------|
| | | IIC | | IIB | |
| | | L_o | C_o | L_o | C_o |
| 13 V | 29 mA | 40 mH | 258 nF | 150 mH | 1580 nF |
| 19 V | 29 mA | 40 mH | 110 nF | 150 mH | 840 nF |
| 24 V | 29 mA | 40 mH | 66 nF | 150 mH | 560 nF |
| 30 V | 29 mA | 40 mH | 42 nF | 150 mH | 370 nF |
| 13 V | 59 mA | 10 mH | 258 nF | 40 mH | 1580 nF |
| 19 V | 59 mA | 10 mH | 110 nF | 40 mH | 840 nF |
| 24 V | 59 mA | 10 mH | 66 nF | 40 mH | 560 nF |
| 30 V | 59 mA | 10 mH | 42 nF | 40 mH | 370 nF |
| 13 V | 79 mA | 6 mH | 258 nF | 22 mH | 1580 nF |
| 19 V | 79 mA | 6 mH | 110 nF | 22 mH | 840 nF |
| 24 V | 79 mA | 6 mH | 66 nF | 22 mH | 560 nF |
| 30 V | 79 mA | 6 mH | 42 nF | 22 mH | 370 nF |
| 13 V | 100 mA | 3 mH | 258 nF | 12 mH | 1580 nF |
| 19 V | 100 mA | 3 mH | 110 nF | 12 mH | 840 nF |
| 24 V | 100 mA | 3 mH | 66 nF | 12 mH | 560 nF |
| 30 V | 100 mA | 3 mH | 42 nF | 12 mH | 370 nF |

The following table shows the assignment of the maximum permissible external inductance (L_o) and capacitance (C_o) to the maximum voltage (U_i) and maximum current (I_i) for the connection to a certified intrinsically safe active circuit with electronic current limiting:

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| U _i | I _i | type of protection | | | |
|----------------|----------------|--------------------|----------------|----------------|----------------|
| | | EEx ib IIC | | EEx ib IIB | |
| | | L _o | C _o | L _o | C _o |
| 13 V | 29 mA | 5 mH | 147 nF | 10 mH | 635 nF |
| 19 V | 29 mA | 9 mH | 68 nF | 25 mH | 367 nF |
| 24 V | 29 mA | 1,8 mH | 31 nF | 25 mH | 221 nF |
| 30 V | 29 mA | not permitted | not permitted | 10 mH | 137 nF |
| 13 V | 59 mA | 3 mH | 148 nF | 10 mH | 635 nF |
| 19 V | 59 mA | 0,33 mH | 35 nF | 15 mH | 225 nF |
| 24 V | 59 mA | not permitted | not permitted | 5 mH | 179 nF |
| 13 V | 79 mA | 1,5 mH | 146 nF | 10 mH | 459 nF |
| 19 V | 79 mA | not permitted | not permitted | 6 mH | 240 nF |
| 24 V | 79 mA | not permitted | not permitted | 0,49 mH | 59 nF |
| 13 V | 100 mA | 0,7 mH | 143 nF | 6 mH | 442 nF |
| 19 V | 100 mA | not permitted | not permitted | 1,8 mH | 312 nF |

Output circuits
(terminal clamps 4 and 9
resp. connections 26 and
29)

maximum voltage U_m = 253 V

The input circuit is safely electrically isolated from all further circuits up to a peak value of the nominal voltage of 375 V.

(16) Report PTB Ex 97-27160

(17) Special conditions for safe use

not applicable

(18) Essential Health and Safety Requirements

met by standards

Zertifizierungsstelle Explosionsschutz

By order

Dr.-Ing. U. Johannsmeyer
Oberregierungsrat



Braunschweig, 26.09.1997

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EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.