



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 02 ATEX 0099 X

(4) Equipment: **Measuring transducer EURAX V604 type 604-23... resp. 604-24... and
Limit value indicator EURAX VC603 type 603-23... resp. 603-24...**

(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 0310215134.

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

EN 50 014: 1997+A1+A2

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.

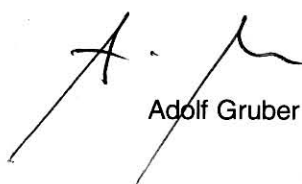
(11) This EC-type-examination Certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this Certificate.

(12) The marking of the equipment shall include the following:



II (1) GD [EEEx ia] IIC

Zertifizierungsstelle **ZELM Ex**


Adolf Gruber



Braunschweig, January 15, 2003

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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.



SCHEDULE

(13)

(14) **EC-TYPE-EXAMINATION CERTIFICATE ZELM 02 ATEX 0099 X**

(15) Description of equipment

The measuring transducer or transducer/limit value indicator respectively is used for the measurement and conversion of the input variables into a normalized output signal. The combination transducer/limit value indicator EURAX VC603 type 603-2.... is additionally intended for out-of-signal-alarm. The limit value is available on potential-free switching contacts.

Direct current, direct voltage, resistance and temperature are detected as measured variable by means of resistance thermometers and thermocouples.

The conditioning to the different measured variables is carried out with a serial interface of an IBM AT or a compatible computer and corresponding software. The computer shall be connected to the programming socket BR1 on the front panel of the apparatus via a special programming adaptor type PRKAB 600 with EC-type-examination certificate PTB 97 ATEX 2082 U.

The maximum permissible ambient temperature range is -40°C to $+55^{\circ}\text{C}$.

Electrical data

Supply circuit

(terminals 30z and 32d)

type 604-23... resp. type 603-23...

direct voltage $24 - 60\text{ V } -15\%/+33\%$ ($U_M = 125\text{ V}$)

or

alternating voltage $24 - 60\text{ V } \pm 15\%$ ($U_M = 253\text{ V}$)

resp.

type 604-24... resp. type 603-24...

direct voltage $85 - 110\text{ V } -15\%/+10\%$ ($U_M = 125\text{ V}$)

or

alternating voltage $85 - 230\text{ V } \pm 10\%$ ($U_M = 253\text{ V}$)

Measuring input circuit

(terminals 2d,4d,2z,4z)

type of protection Intrinsic Safety EEx ia IIC/IIB

resp. EEx ib IIC/IIB

maximum values:

$U_o = 11\text{ V}$

$I_o = 3\text{ mA}$

$P_o = 5\text{ mW}$

(linear output characteristics)

IIC resp. IIB

max. permissible external inductance 1 H 1 H

max. permissible external capacitance $1,97\text{ }\mu\text{F}$ $13,8\text{ }\mu\text{F}$



Schedule to EC-TYPE-EXAMINATION CERTIFICATE_ZELM 02 ATEX 0099 X

or

Measuring input circuit
(terminals 4z and 4d or
4z and 2d or
4z and 2z)

type of protection Intrinsic Safety
resp.

EEx ia IIC/IIB
EEx ib IIC/IIB

maximum values:

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

$$I_o = 3 \text{ mA}$$

$$P_o = 5 \text{ mW}$$

(linear output characteristics)

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:

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

The effective internal inductance is negligibly small.

The effective internal capacitance is

$$C_i = 6 \text{ nF}$$

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	27 mA	40 mH	262 nF	150 mH	1600 nF
19 V	27 mA	40 mH	112 nF	150 mH	850 nF
24 V	27 mA	40 mH	67 nF	150 mH	564 nF
30 V	27 mA	40 mH	42 nF	150 mH	370 nF
13 V	57 mA	10 mH	262 nF	40 mH	1600 nF
19 V	57 mA	10 mH	112 nF	40 mH	850 nF
24 V	57 mA	10 mH	67 nF	40 mH	564 nF
30 V	57 mA	10 mH	42 nF	40 mH	370 nF
13 V	77 mA	6 mH	262 nF	22 mH	1600 nF
19 V	77 mA	6 mH	112 nF	22 mH	850 nF
24 V	77 mA	6 mH	67 nF	22 mH	564 nF
30 V	77 mA	6 mH	42 nF	22 mH	370 nF
13 V	100 mA	3 mH	262 nF	12 mH	1600 nF
19 V	100 mA	3 mH	112 nF	12 mH	850 nF
24 V	100 mA	3 mH	67 nF	12 mH	564 nF
30 V	100 mA	3 mH	42 nF	12 mH	370 nF



Schedule to EC-TYPE-EXAMINATION CERTIFICATE_ZELM 02 ATEX 0099 X

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 **non-linear (electronic) current limiting**:

U_i	I_i	Type of protection			
		EEx ib IIC		EEx ib IIB	
		L_o	C_o	L_o	C_o
13 V	27 mA	5 mH	143 nF	10 mH	626 nF
19 V	27 mA	5 mH	57 nF	25 mH	319 nF
24 V	27 mA	2 mH	31 nF	25 mH	232 nF
30 V	27 mA	not permitted	not permitted	25 mH	141 nF
13 V	57 mA	2 mH	149 nF	10 mH	626 nF
19 V	57 mA	0,5 mH	38 nF	10 mH	292 nF
24 V	57 mA	not permitted	not permitted	10 mH	162 nF
13 V	77 mA	1 mH	139 nF	10 mH	475 nF
19 V	77 mA	not permitted	not permitted	5 mH	259 nF
24 V	77 mA	not permitted	not permitted	0,5 mH	61 nF
13 V	100 mA	0,5 mH	150 nF	5 mH	487 nF
19 V	100 mA	not permitted	not permitted	1 mH	232 nF

Output circuit
(terminals 16z and 16d) $U_{max} = 15 \text{ V}$; $I_{max} = 25 \text{ mA}$
Maximum voltage $U_M = 253 \text{ V}$

Output contacts
(terminals 26b, 26d, 26z) Switching contacts
alternating voltage up to 125 V, up to 0,5 A
Maximum voltage $U_M = 253 \text{ V}$
direct voltage up to 110 V, 0,3 A
or up to 30 V, 1 A
Maximum voltage $U_M = 125 \text{ V}$

additional contacts for monitoring limits only for variant EURAX VC603 (alarm unit)

Output contacts
(terminals 18b, 18d, 18z resp.
20b, 20d, 20z resp. 22b, 22d, 22z)
resp. 24b, 24d, 24z) Switching contacts
alternating voltage up to 125 V, up to 0,5 A
Maximum voltage $U_M = 253 \text{ V}$
direct voltage up to 110 V, 0,3 A
or up to 30 V, 1 A
Maximum voltage $U_M = 125 \text{ V}$

reference junction circuit
(terminals 6d and 6z) only for connection to passive devices with
negligible reactance

Programming circuit
(Front socket BR1) only for connection to the programming cable PRKAB 600
with EC-type-examination certificate PTB 97 ATEX 2082 U



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Schedule to EC-TYPE-EXAMINATION CERTIFICATE_ZELM 02 ATEX 0099 X

The measuring input circuit and the reference junction circuit are safely electrically isolated from all further circuits up to a peak value of the nominal voltage of 375 V.
The measuring input circuit, the reference junction circuit and the programming circuit are considered to be connected together.

(16) Report No.

ZELM Ex 0310215134

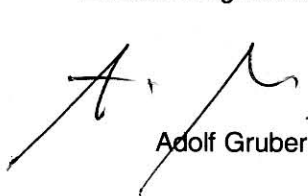
(17) Special conditions for safe use

1. The measuring transducer or transducer/limit value indicator respectively must be installed outside the explosive atmosphere only and using the intended module rack.
2. Due to the galvanical connection between programming circuit and intrinsically safe measuring input circuit only the programming adaptor PRKAB 600 with EC-type-examination certificate PTB 97 ATEX 2082 U must be connected to the programming socket BR1 on the front panel for a short time.
3. The reference resistor connected to the reference junction circuit must only be jointly mounted with the measuring transducer or transducer/limit value indicator respectively using the intended module rack.
4. The plug-connector of the measuring transducer or transducer/limit value indicator respectively is not intended for direct connection to the external circuitries, but is the connection to the wiring of the appropriate module rack only, using the intended socket connector. The belonging particulars of the operating manual have to be considered.

(18) Essential Health and Safety Requirements

met by standards

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Braunschweig, January 15, 2003