

[1] **EC-TYPE EXAMINATION CERTIFICATE**
according to Directive 94/9/EC, Annex III
(Translation)



[2] Equipment and Protective Systems intended for use in Potentially Explosive Atmospheres, Directive 94/9/EC

[3] EC-Type Examination Certificate Number: **IBExU05ATEX1084 X**

[4] Equipment: Keyboard
type TT-108

[5] Manufacturer: E.L.B. Ex-Geräte Bachmann GmbH & Co. KG

[6] Address: An der Hartbrücke 8
64625 Bensheim, Germany

[7] The equipment mentioned in [4] and any acceptable variation thereto are specified in the schedule to this EC-Type Examination Certificate.

[8] IBExU Institut für Sicherheitstechnik GmbH, NOTIFIED BODY number 0637 in accordance with article 9 of the Council Directive 94/9/EC of 23rd 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 the equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the test report IB-05-3-051 of 1st June 2005.

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN 50014:1997+A1 +A2 and EN 50020:2002 and EN 500281-1-1:1998 +A1.

[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 under [17] in the schedule to this EC-Type Examination Certificate.

[11] This EC-Type Examination Certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this directive apply to the manufacture and supply of this equipment.

[12] The marking of the equipment mentioned in [4] shall include the following:

II 2G EEx ia IIC T4
 II 2D T 79 °C IP 68
-20 °C ≤ Ta ≤ +50 °C

IBExU Institut für Sicherheitstechnik GmbH
Fuchsmühlenweg 7 - D-09599 Freiberg
Tel.: 00493731 3805-0 - Fax: 00493731 23650

Authorised for certifications Explosion protection
By order

(Dr. Lösch)

Schedule



- Seal-
(ID no. 0637)

Freiberg, 6th June 2005

Certificates without signature and seal are not valid.
Certificates may only be duplicated completely and unchanged. In case of dispute, the German text shall prevail.

[13] **Schedule**

[14] **to the EC-TYPE EXAMINATION CERTIFICATE IBExU04ATEX1084 X**

[15] **Description of the equipment**

The keyboard is an intrinsically safe apparatus and serves for the control of a PC in explosive areas. It consists of a silicon housing with aluminium-base plate, keys and 3 LED. The keyboard is intrinsically safe provided by associated apparatus.

Electrical data

Ambient temperature range: up -20 °C to +50 °C
Degree of protection: IP 66, IP 68 and IP 69k

Intrinsically safe input electric circuit:

$U_i \leq 5.4 \text{ V}$
 $I_i \leq 250 \text{ mA}$
 $P_i \leq 1.2 \text{ W}$
 $C_i = 13 \mu\text{F}$
 L_i negligible

[16] **Test report**

The test results are recorded in the test report IB-05-3-051 of 1st June 2005. The test documents are component of the test report and listed there.

Summary of the Test Result:

The keyboard type TT-108 fulfils the requirements of the Type of protection Intrinsic Safety for an explosion-proof electrical apparatus for Equipment Group II , Category 2G (Explosion Group of IIC, Temperature Class T4) as well as the regulations for protection of dust explosion of the Category 2D.

Safety instruction

In the operator's manual for the handling are instructions to be followed.

[17] **Special conditions**

The keyboard is not allowed to clean dry or plugged on in the explosive areas or explosive atmospheres.

For connection only galvanically isolated 'ia'- current sources are allowed.

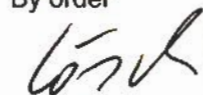
The plug connection of the keyboard TT-108 must be outside of explosive dust areas or according to IP 6X.

[18] **Essential Health and Safety Requirements**

Confirmed by norms (see [9]).

By order

Freiberg, 6th June 2005



(Dr. Lösch)