[1] # EU-Type-Examination Certificate

[2] Equipment and Protective Systems intended for use in Potentially Explosive Atmosphere – **Directive 2014/34/EU**

[3] **EU-Type-Examination Certificate**

PTZ 16 ATEX 0027

Rev. 0

[4] **Applicant:** **Erich Ott GmbH & Co. KG**

[5] **Address:** Rüdigerstrasse 15
D-65189 Wiesbaden
Germany

[6] **Equipment:** Temperature regulator and limiter Typ TRB-P..ax.

[7] This Equipment and any acceptable variation thereto are specified in the annex to this certificate and the documents referred to.

[8] Primara Test- und Zertifizier GmbH, Notified Body No. 2572 in accordance with the Council Directive, dated 26th February 2014 (2014/34/EG), certifies that this equipment has been found to comply with the Essential Health and Safety Requirements related to the design and construction of equipment and protective systems intended for use in potentially explosive atmosphere, given in Annex II to the directive. The examination and test results are recorded in the confidential report ZELM Ex 12413281095.

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with to following standards:
EN 60079-0:2012+A11:2013 **EN 60079-11:2012** **EN 61508-1:2010**

[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 annex to this certificate.

[11] This EU-Type-Examination Certificate relates only to the design, examination and tests of specified equipment or protective system in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by the certificate.

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

II 2G [Ex ib] IIC
II 2D [Ex ib] IIIC

Kaufbeuren, 2017-04-06

Andreas Aufmuth
Certification body

Horst Haug
ATEX department

[13] Annex

[14] EU-Type-Examination Certificate PTZ 16 ATEX 0027

[15] Description of the equipment

The temperature regulator type TRB-P ..ax. is used to control and limit thermal processes, with the most frequent application being trace heating systems. Pt-100 measuring resistors are used as sensors. The temperature controller Type TRB-P ..ax is intended for use in control cabinets.

[16] Technical data:

Analog output: 4-20 mA
Nom. current: 45 mA
Nom. voltage: 230 V
Controller: 0°C – 400°C
Limiter: 0°C – 500°C
Ingress protection: IP20
Ambient temperature range: 0°C – 40°C

Supply circuit:

(Plug connector 1, Pin 2d/z, 18z)	230 V +/- 10%, 48 – 62 Hz

Contact circuits:

Relay d1 (regulator)

(Plug connector 1, Pin 4 d/z, 6z)	AC: 230 V max., 5 A (3 A at cosφ ≥ 0,7) Max. power: 100 VA

Relay k1 (limiter)

(Plug connector 1, Pin 8 d/z, d6)	AC: 230 V max., 5 A (3 A at cosφ ≥ 0,7) Max. power: 100 VA

Relay d3 (min. control and heater breakage)

(Plug connector 1, Pin 12 d/z, z10 and Pin 14 d/z, d16)	AC: 230 V max., 5 A (3 A at cosφ ≥ 0,7) Max. power: 100 VA

Remote control switch (Plug connector 1, Pin 20 d/z)	intrinsic safety Ex ib IIC Maximum values: U_0 = 5,4 V I_0 = 16,3 mA P_0 = 75 mW Trapezoid characteristic Maximum external inductance L_0 =2 mH Maximum external capacitance C_0 = 2,32 µF
Pt 100 Input temperature controller (Plug connector 1, Pin 32 d/z, d30)	intrinsic safety Ex ib IIC Maximum values: U_0 = 7,5 V I_0 = 31,1 mA Trapezoid characteristic Maximum external inductance L_0 = 3 mH Maximum external capacitance C_0 =1125 nF

Analog output actual value (Plug connector 1, Pin d20, d22)	intrinsic safety Ex ib IIC Maximum values: U_0 = 15,8 V I_0 = 122 mA P_0 = 482 mW Maximum external inductance L_0 = 2 mH Maximum external capacitance C_0 = 510 nF
Pt 100 Input temperature limiter (Plug connector 1, Pin 26 d/z, d28)	intrinsic safety Ex ib IIC Maximum values: U_0 = 7,5 V I_0 = 31,1 mA Trapezoid characteristic Maximum external inductance L_0 = 3 mH Maximum external capacitance C_0 = 1125 nF
All circuits on the (Plug connector 2)	only for connection to a galvanically isolated operating medium acc. EN 60079-11 with a safety-related maximum voltage of $U_m \leq 28$ V

Characteristics of Safety-integrity level SIL1:

Switch-off hysteresis	< 6K
Switching accuracy	ca. 1%
SFF	50,36 %
PFH	7,88 x 10^7 1/h
PFD	1,73 x 10^2

[17] Test report no.:
ZELM Ex 12413281095

[18] Special conditions:
Not applicable.

[19] Essential Health and Safety Requirements:
Covered by the standards.