



Translation

(1) **EC-Type Examination Certificate**

(2) **- Directive 94/9/EC -**
Equipment and protective systems intended for use
in potentially explosive atmospheres

(3) **BVS 04 ATEX E 022 X**

(4) **Equipment: Universal Smart Transmitter type ***USTI*****

(5) **Manufacturer: Bopp & Reuther Messtechnik GmbH**

(6) **Address: D - 67346 Speyer**

(7) The design and construction of this equipment and any acceptable variation thereto are specified in the schedule to this type examination certificate.

(8) The certification body of EXAM BBG Prüf- und Zertifizier GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council 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 test and assessment report BVS PP 04.2032 EG.

(9) The Essential Health and Safety Requirements are assured by compliance with:

EN 50014:1997+A1-A2 General requirements
EN 50018:2000 +A1 Flameproof enclosure 'd'
EN 50020:2002 Intrinsic safety 'i'

(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 in accordance to Directive 94/9/EC.
Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate

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

 **II 2G EEx d [ib] IIC T4**

EXAM BBG Prüf- und Zertifizier GmbH

Bochum, dated 01. March 2004

Signed: Dr. Jockers

Certification body

Signed: Dr. Eickhoff

Special services

(13) Appendix to

(14) **EC-Type Examination Certificate**

BVS 04 ATEX E 022 X

(15) 15.1 Subject and type

Universal Smart Transmitter type ***USTI***

(In the complete designation, the "*" are replaced by letters and/or digits marking details of the design that are not relevant to explosion-protection.)

15.2 Description

The Universal Smart Transmitter Typ ***USTI*** consists of a measuring gauge enclosure according to EC Type Examination Certificate DMT 00 ATEX E 010 U sealed with threaded covers. The measuring gauge enclosure provides two compartments of different size, one designed as flameproof terminal compartment the other one designed as electronic compartment fitted with intrinsically safe electronic modules.

For connection / mounting purposes of an associated sensor, the enclosure is fitted with an adapter. The intrinsically safe sensor may be separated from or directly combined with the enclosure. The adapter is related to the electronic compartment.

The terminal compartment - type of protection flameproof enclosure "d" - is equipped with a combined current limiting and safety shunt assembly module, providing terminals for interconnection of the non intrinsically safe 4 - 20 mA supply and signal circuit. A cable entry certified for this purpose is used to lead the non-intrinsically safe circuit into the terminal compartment.

The intrinsically safe output circuit of the current limiting and safety shunt assembly module is led into the electronic compartment via feed-through capacitors.

The electronic compartment of the Universal Smart Transmitter contains intrinsically safe electronic modules according to EC Type Examination Certificate DMT 99 ATEX E 014 X) transferring measuring data from an intrinsically safe sensor circuit into the non intrinsically safe 4 - 20 mA supply and signal circuit.

The threaded cover of the electronic compartment is equipped alternatively with a glass window for inspection purposes of the LCD display below.

15.3 Parameters

15.3.1 Non intrinsically safe supply and signal circuit (4 - 20 mA current loop)

Rated voltage	U_N	DC	24 V
Maximum permitted voltage for normal operation		DC	28.5 V
	U_m	AC	250 V
Power consumption	P_N		1 W

15.3.2 Internal intrinsically safe supply and signal circuit
 (internal safety shunt assembly providing current limitation; level of protection EEx ib IIC)

Voltage	U_o	DC	30	V
Short circuit current	I_o		26.6	mA
Power	P_o		798	mW

15.3.3 Pick-up circuits (types of protection EEx ib IIC) for connecting passive pick-ups;
 galvanically connected with the supply and signal circuit.

Pick-up	Inductor	Contact
Terminals	7 and 8	5 and 6
Voltage U_o	1 V	6.6 V
Current I_o	4 mA	23 mA
Power P_o	1 mW	37 mW
Max. external capacitance C_o	$\leq 100 \mu\text{F}$	$\leq 22 \mu\text{F}$
or		
Max. external inductance L_o	$\leq 1 \text{ H}$	$\leq 35 \text{ mH}$
Max. external capacitance C_o (combined connection)	$\leq 4 \mu\text{F}$	$\leq 0.9 \mu\text{F}$
Max. external inductance L_o	$\leq 1 \text{ H}$	$\leq 1.5 \text{ mH}$
Inductance-resistance ratio (L_o/R_o)	40.5 mH/ Ω	0.93 mH/ Ω

15.3.4 Ambient temperature range: $-40 \text{ }^\circ\text{C} \leq T_a \leq +60 \text{ }^\circ\text{C}$

(16) Test and assessment report
 BVS PP 04.2032 EG as of 01.03.2004

(17) Special conditions for safe use

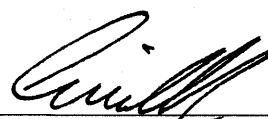
The "-" - terminal of the non intrinsically safe supply and signal circuit is interconnected to the enclosure.
 Grounding / earthing of the non intrinsically safe supply and signal circuit / of the enclosure shall comply with
 clause 6.6 of EN 50020:2002.

We confirm the correctness of the translation from the German original.
 In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, 01. March 2004
 BVS-Schä/Kw A 20020707

EXAM BBG Prüf- und Zertifizier GmbH


 Certification body


 Special services