



EC-Type Examination Certificate

- (1)
(2) Equipment or Protective Systems Intended for use
in Potentially Explosive Atmospheres
Directive 94/9/EC

(3) EC-Type Examination Certificate Number:

FTZÚ 09 ATEX 0004X

(4) Equipment or protective system: **The measuring and control system MPS-XX-NG**

Manufacturer: **TEVEL TEVE VARNOST Elektronika, d.o.o.**

(5) Address: **Borovniško naselje 7, 1412 Kisovec, Slovenia**

(7) This equipment or protective system and any of acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) The Physical Technical Testing Institute, notified body number 1026 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system 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 confidential Report N°

09/0004 dated 26.04.2010

(9) Compliance with Essential Health and safety requirements has been assured by compliance with:

EN 60079-0:2006; EN 60079-11:2007; EN 50303:2000

(10) If the sign „X“ is placed after the certificate number, it indicates that the equipment or protective system 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 testing 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 or protective system shall include the following:

 **I M1 Ex ia I**

This EC-Type Examination Certificate is valid till: **30. 04. 2015**

Responsible person:

Dipl. Ing. Šindler Jaroslav
Head of certification body



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(15) Description of Equipment or Protective System:

The measuring and control system MPS-XX-NG is a fixed microprocessor control device for application in mining conditions with protection level Ma.

It consist of basic board, LCD board, supply module and appropriate adapter module for contain sensor. In such a may series of apparatus is formed enabling to measure CH₄ (pellistors or IR), CO, CO₂ concentration, flow rate v, temperature T, relative humidity RH.

The output signal can be analogue current loop, frequency output, analogue voltage output and serial interface RS485 or CAN. It can also contain two digital input and two relay outputs.

LCD board contains except LCD displays also two LED diodes of alarm diodes and three contacts less push button.

Equipment and modules marking (plate) – see page 7.

Input/outputs parameters – see page 8.

(16) Report No. : 09/0004

(17) Special conditions for safe use:

The measurement function for explosion protection in accordance with EN 60079-29-1 is not the subject of this EC-Type Examination Certificate.

(18) Essential Health and Safety Requirements:

Essential health and safety requirements of Directive 94/9/EC are covered by standards mentioned in (9), according which the product was verified and in the manufacturer's instruction for use.

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LIST OF DOCUMENTATION

Documentation:

Date:

- Technical documentation MPS-XX-NG – ID dok.: 335000 05.03.2010
- List technical documentation MPS-XX-NG (4 pages) - ID dok.: 335001 03/2010
- Drawings No.: ID dok: 335510 03/2010
ID dok: 335511 02/2010
ID dok: 335510 23.02.2010
ID dok: 335910 26.02.2010
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ID dok: 335020 03/2010
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• Drawings No.:	ID dok: 335656	02/2010
	ID dok: 335056 (2 pages)	25.02.2010
	ID dok: 335657	02/2010
	ID dok: 335057 (2 pages)	25.02.2010
	ID dok: 335662	03/2010
	ID dok: 335062 (2 pages)	25.02.2010
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	ID dok: 335659	02/2010
	ID dok: 335059 (2 pages)	25.02.2010
	ID dok: 335673 (3 pages)	03/2010
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	ID dok: 335060 (9 pages)	26.02.2010
	ID dok: 335670	03/2010
	ID dok: 335070 (2 pages)	02.03.2010
	ID dok: 335671	03/2010
	ID dok: 335071 (2 pages)	02.03.2010
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	ID dok: 335680	03/2010
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	ID dok: 335180	02/2010
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	ID dok: 335083	02.03.2010
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	ID dok: 335694	02/2010

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ID dok: 335402	03/2010
ID dok: 335026	03.03.2010
ID dok: 335447	02.03.2010
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ID dok: 335690	03/2010
ID dok: 335090 (2 pages)	02.03.2010
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ID dok: 335193	02/2010
ID dok: 335093 (2 pages)	02.03.2010
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ID dok: 335202 (4 pages)	05.03.2010
ID dok: 335101	02.03.2010
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ID dok: 335448	03.03.2010
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ID dok: 335100 (4 pages)	02.03.2010
ID dok: 335099	02.03.2010
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• Drawings No.:	ID dok: 335593	03/2010
	ID dok: 335393 (2 pages)	02.03.2010
	ID dok: 335204 (4 pages)	02.03.2010
	ID dok: 335203	02.03.2010
	ID dok: 335695	03/2010
	ID dok: 335394 (2 pages)	05.03.2010
	ID dok: 335102 (4 pages)	05.03.2010
	ID dok: 335201	05.03.2010
	ID dok: 335409	03/2010
	ID dok: 335310	03.03.2010
	ID dok: 335480	03.03.2010
	ID dok: 335481	03.03.2010
	ID dok: 335485	03/2010
	ID dok: 335720	03/2010
	ID dok: 335320 (2 pages)	02.03.2010
	ID dok: 335331 (4 pages)	02.03.2010
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	ID dok: 335121	03.03.2010
	ID dok: 335482	03.03.2010
	ID dok: 335483	03.03.2010
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Input/output parameters:

Power supply: terminals No. 5 (Uin+) and No. 6 (Uin-): $U_i = 15 \text{ V}; I_i = 2,4 \text{ A}; C_i \sim 0; L_i \sim 0$

Analog signal output: terminals No. 8 (S+) and No. 7 (S-):

Current signal output parameters:

$U_o = 10,5 \text{ V}; I_o = 78,5 \text{ mA}; P_o = 206 \text{ mW}; C_o = 66 \mu\text{F}; L_o = 60 \text{ mH}$

Frequency signal output parameters (alternative to current output):

without R51: $U_i = 30 \text{ V}; I_i = 100 \text{ mA}; P_i = 100 \text{ mW}; L_i \sim 0; C_i \sim 0$

with R51: $U_o = 10,5 \text{ V}; I_o = 10,6 \text{ mA}; P_o = 27,8 \text{ mW}; C_o = 66 \mu\text{F}; L_o = 1 \text{ H}$

Voltage signal output parameters (alternative to current output):

$U_o = 10,5 \text{ V}; I_o = 10,6 \text{ mA}; P_o = 27,8 \text{ mW}; C_o = 66 \mu\text{F}; L_o = 1 \text{ H}$

Serial communication output: terminals No. 9 (CANL, RS485b) and No. 10 (CANH, RS485a):

$U_o = 5,88 \text{ V}; I_o = 106 \text{ mA}; P_o = 156 \text{ mW}; C_o = 1000 \mu\text{F}; L_o = 25 \text{ mH}$

$U_i = 5,88 \text{ V}; L_i \sim 0; C_i \sim 0$

Digital inputs DI1, DI2:

terminals No. 1 (DI1+) and No. 2 (DI1-) and terminals No. 3 (DI2+) and No. 4 (DI2-)

$U_o = 5,88 \text{ V}; I_o = 2,5 \text{ mA}; P_o = 3,7 \text{ mW}; C_o = 1000 \mu\text{F}; L_o = 1 \text{ H}$

Relays outputs DO1, DO2:

Re1 – terminals No. 11 and No. 12 and Re2 – terminals No. 13 and No. 14:

$U_i = 30 \text{ V}; I_i = 250 \text{ mA}; P_i = 3 \text{ W}; L_i \sim 0; C_i \sim 0$

Ambient temperature: $-20^\circ\text{C} \leq T_a \leq +50^\circ\text{C}$

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