



Physical Technical Testing Institute
Ostrava – Radvanice



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 14 ATEX 0136X

(1) Equipment or protective system: **Gas-Volume Conversion Device type MECflexS**

(2) Manufacturer: **Metreg Technologies GmbH**

(3) Address: **Tränkeweg 9, 15517 Fürstenwalde, Germany**

(4) 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.

(5) 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°:

14/0136 dated 08.08.2014

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

EN 60079-0:2009, EN 60079-11:2012, EN 60079-26:2007

(7) 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.

(8) 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.

(9) The marking of the equipment or protective system shall include following:



II 1G Ex ia IIC T4/T3 Ga

This EC-Type Examination Certificate is valid till: **31.01.2019**

Responsible person:

Dipl. Ing. Lukáš Martinák
Head of Certification Body



Date of issue: 08.08.2014

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FTZÚ, s.p., Pikartská 1337/7, 716 07 Ostrava-Radvanice, Czech Republic,
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Physical Technical Testing Institute
Ostrava – Radvanice

(13)

Schedule

(14) **EC-Type Examination Certificate N° FTZÚ 14 ATEX 0136X**

(15) Description of Equipment or Protective System:

The MECflexS Gas-Volume Conversion Device is designed to calculate the totalized volume of gas using the output from a gas meter and electrical signals from external temperature and internal or external pressure sensors.

The apparatus is powered by a built-in lithium battery and a back-up battery and/or an external I.S. power supply.

All circuits of the apparatus are intrinsically safe whereas RS485 and RS232 outputs are galvanically isolated.

An IR interface is available for wireless setting and communication through a certified IR head.

All electronic elements are mounted on several printed circuits boards which are housed in a plastic enclosure.

External connections except of IR interface are made via integral terminals.

Input/output parameters:

HF input NAMUR DI1, DI2: terminals HF+, HF- (INPUTS)

$U_o = 10 \text{ V}$; $I_o = 11 \text{ mA}$; $P_o = 27 \text{ mW}$

	IIC	IIB, IIA
C_o	2,8 μF	18 μF
L_o	200 mH	700 mH

LF inputs and binary inputs DI1, DI2, DI3, DI4: terminals LF+/-, DI3+/-, DI4+/- (INPUTS)

$U_o = 6,5 \text{ V}$; $I_o = 8 \text{ mA}$; $P_o = 15 \text{ mW}$

	IIC	IIB, IIA
C_o	2,8 μF	18 μF
L_o	200 mH	700 mH

Communication line RS485 (internal bus): terminals GND, U+, D-, D+

$U_o = 6,5 \text{ V}$; $I_o = 1 \text{ A}$; $P_o = 1,1 \text{ W}$

	IIC	IIB, IIA
ΣC_o	3,5 μF	250 μF
ΣL_o	30 μH	120 μH

Digital outputs DO1 až DO4: terminals GND, DO1, DO2, DO3, DO4

$U_i = 15 \text{ V}$; $\Sigma P_i = 1 \text{ W}$; $C_i = 500 \text{ nF}$; $L_i = 0$

External supply: terminals PWR (GND, +)

$U_i = 10 \text{ V}$; $I_i = 0,2 \text{ A}$; $P_i = 0,33 \text{ W}$ ($P_i = 0,41 \text{ W}$ only for JBZ-02, JBZ-01); $C_i = 0$; $L_i = 0$

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Communication line RS485 – communication with the higher level system:

terminals GND, U1+, D1- D1+

$U_i = 10 \text{ V}$; $\Sigma P_i = 0,33 \text{ W}$ (sum of power in RS485 a RS232)

$C_i = 2,8 \mu\text{F}$; $L_i = 0$

Communication line RS232 – communication with the higher level system:

terminals GND1, CTS, TXD, RXD

$U_i = 20 \text{ V}$; $\Sigma P_i = 0,33 \text{ W}$ (sum of power in RS485 a RS232)

$C_i = 200 \text{ nF}$; $L_i = 0$

Ambient temperature:

Temperature Class T4: $-25^\circ\text{C} \leq T_a \leq +40^\circ\text{C}$

Temperature Class T3: $-25^\circ\text{C} \leq T_a \leq +70^\circ\text{C}$

(16) Report No.: 14/0136

(17) Special conditions for safe use:

17.1 Under certain extreme circumstances, the plastic enclosure may store an ignition-capable level of electrostatic charge. Therefore the device shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge. Additionally, the equipment shall only be cleaned with a damp cloth.

17.2 Permissible battery types: Saft LS33600, Saft LS14250

(18) Essential Health and Safety Requirements:

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

(19) List of Documentation:

Document/Drawings:	Type of doc.:	Rev.:	Date:	Nr. of pages:
KP 065 01-09 Mod D	01/1	-	27.05.2014	1
KP 065 30 Mod E	01/1	-	27.05.2014	1
Technical description / Manual		Rev. 0	06.2014	123

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