

## CERTIFICATE OF CONFORMITY

EAC

No. TC **RU C-RU.ГБ05.B.00606**Series RU No. **0111911**

**CERTIFYING BODY** Certifying body for mining equipment Non-Profit Independent Research Organisation "Certification Centre of Explosion Protected and Mine Equipment" (NANIO CCVE), Address: 115230, Moscow, 1 Elektrolitny proezd, bldg. 4, room No. 9 (legal add.); Russia, 140004, Moscow region, Lyubertsy, VUGI microdistrict, OAO EKOMASH Plant (business address), phone/fax: +7 (495) 554-2494, E-mail: zalogin@ccve.ru. Certificate (Reg. No. POCC RU.0001.11ГБ05) issued 09.08.2011 by the Federal Agency on Technical Regulation and Metrology. Statement of Accreditation No. 2860 dated 13.08.2012 from the Federal Accreditation Service.

**APPLICANT** Engels Instrument Manufacturing Association Signal Limited Liability Company (Signal LLC), the Russian Federation, 413119, Saratov region, Engels -19. OGRN code: 1026401974972. Phone: +7 (8453) 75-37-74, fax: +7 (8453) 75-06-14. E-mail: gorunova\_ocl@eposignal.ru

**MANUFACTURER** Engels Instrument Manufacturing Association Signal Limited Liability Company (Signal LLC), the Russian Federation, 413119, Saratov region, Engels-19.

**PRODUCT** Rotary gas meters RSG SIGNAL (СЯМИ 407273-561 ТУ) with Ex-marking 1ExibIIAT6/T5 X (see Appendix, form No. 0077237). Serial production.

**CUSTOMS TARIFF No.** 9028 10 000 0

**CONFORMS TO THE REQUIREMENTS OF** the Technical Regulation of Customs Union TR CU 012/2011 "On Safety of Equipment Intended for Use in Explosive Atmospheres". GOST 30852.0-2002 (MEK 60079-0:1998). Explosionproof electrical apparatus. Part 0. General requirements; GOST 30852.10-2002 (MEK 60079-11:1999). Explosionproof electrical apparatus. Part 11. Intrinsically safe circuit "i".

**CERTIFICATE ISSUED BASED UPON** Test Report No. 227.2014-T dd. 06. 06.2014 Testing Laboratory (TL CCVE) (Reg. No. POCC RU.0001.21ГБ04, valid from 05.08.2011 to 21.10.2014); Act on the results of analysis of the production status No. 56-A/14 от 27.03.2014 Certification Body (CB CCVE) (Reg. No. POCC RU.0001.11ГБ 05, valid from 09.08.2011 to 28.07.2015).

**ADDITIONAL INFORMATION** Certification scheme 1s.  
Certificate valid with appendix on 1 sheet.  
Inspection checkups - 2015, 2016, 2017, 2018.

**VALID FROM** 25.06.2014 **TO** 25.06.2019 **INCLUSIVE**

(Seal): / Non-Profit Independent Research Organisation "Certification Centre of Explosion Protected and Mine Equipment"\*Certifying body\* POCC RU.0001.11ГБ05\* For Certificates \* /

Certifying Body Director  
(Authorized Representative)

(signature)

A.S. Zalogin  
(initials, surname)

Expert (Expert Auditor)  
(Experts (Expert Auditors))

(signature)

V.P. Vinogradov  
(initials, surname)

APPENDIX

TO CERTIFICATE OF CONFORMITY No. TC

RU C-RU.ГБ05.B.00606

Series RU

No. 0077237

1. PURPOSE AND SCOPE OF APPLICATION

Rotary gas meters RSG SIGNAL (hereinafter - meters) are designed to measure the actual volume of natural gas and other compatible gas with the purpose of commercial and technological accounting of gas.

Scope of application - Ex-zones of premises and outdoor units, according to Ex-marking and GOST 30852.13-2002 (MEK 60079-14:1996).

2. BASIC TECHNICAL DATA OF THE METERS

2.1. Ingress protection acc. to GOST 14254-96:

- of the meters

IP55

- of the readout unit

IP67

2.2. Service conditions:

- ambient temperatures working range, °C

-30 ... +60

- relative ambient humidity at the temperature 35 °C, %

30 ... 80

2.3. Electric intrinsically safe parameters of sensors

(without moisture condensation)

LF, MF, HF, CS sensors:

- Maximum input voltage,  $U_i$ , V

LF	MF, HF	CS
30	16	14.3
50	25	50
0	0.25	5.1
0	0.05	0.55

- Maximum input current  $I_i$ , mA

- Maximum internal inductance,  $L_i$ , mH

- Maximum internal capacitance,  $C_i$ , microfarad

2.4. Metered gas flow,  $m^3$ /hour

16.0 ÷ 400

2.5. Operating pressure, MPa (kgf/cm<sup>2</sup>)

1.2 ÷ 1.6

3. DESCRIPTION OF DESIGN AND EXPLOSION PROTECTION

The meters are produced in some versions that have different operating pressure, mounting dimensions and variants of installation on pipeline.

Structurally the meter consists of housing with the measuring camera, two rotors, two covers and readout unit. Rotors are moving at the account of the pressure differential at the input and output of the meter. The mechanical integrator in the readout unit records the volume of passed gas as a number of rotations made by rotors with the appropriate weight coefficient.

The meter is connected to the pipeline by flanges or thread joint. The roller-type readout unit consists of housing with protected glass, external magnetic coupling and magnetic sensor of impulses. The meter components contacting the operating environment are produced of aluminum alloy with magnesium content at most 7.5% and have special anti-corrosive coating. The air-tightness of joints of the meter to the main line is ensured with the help of rubber seals or joint compound. The meter is provided with the firm plate and Ex marking on it, warning inscription and seal.

Explosion protection of the meter is provided by the type "intrinsically safe circuit" of "ib" level according to GOST 30852.10-2002 (MEK 60079-11:1999) and by performance of its design with respect to GOST 30852 0-2002 (MEK 60079-0:1998).

The type of explosion protection «intrinsically safe circuit "i"» is achieved by the limitation of input parameters of electric circuits of magnetic impulser (see cl. 2.3) up to intrinsically safe values that is confirmed by tests results.

Materials used in the meter housing are safe with respect to friction sparking.

4. MARKING

Marking on the meter includes the following data:

- trademark or manufacturer name;
  - product type;
  - product serial number and year of production;
  - ambient temperatures working range;
  - Ex marks;
  - warning inscription;
  - plate of input intrinsically safe parameters;
  - certifying body name and number of the certificate of conformity,
- and other data required by regulatory and technical documentation, which the manufacturer must indicate in the marking.

5. SPECIAL CONDITIONS FOR USE

The X mark after the explosion protection marking means that the following special conditions must be followed during operation of the meter:

- installation and connection of the meter must be carried out by the experts of gas management;
- follow the requirements of warning inscription – "should be wiped with anti-static cloth only", because the protected glass of readout unit does not exclude accumulation of electrostatic charges;
- the sight glass of the readout unit has a lower level of mechanical strength and it should be protected from blows;
- it is forbidden to use the meter with the damaged readout unit;
- input connectors of magnetic sensor of meter's impulses should be connected only to output devices of IS barriers intended for supply of intrinsically safe circuits of "ib" level, which have the Certificate of Conformity.

The special conditions for use marked with the X sign should be reflected in the accompanying documents, which are to be delivered in set with each meter.

Changes may be made to the meter design only with the consent of Non-Profit Independent Research Organisation "Certification Centre of Explosion Protected and Mine Equipment".

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