

CERTIFICATE OF CONFORMITY

EAC

No. TC **RU C-RU.ГБ05.B.00495**Series RU No. **0083279**

CERTIFYING BODY 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 on 09.08.2011 by the Federal Agency on Technical Regulation and Metrology. Statement of Accreditation No 2860 dd. 13.08.2012 by 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 FLOWGAS gas volume correctors (СЯМИ.408843-623 ТУ) with Ex-marking 1 Ex ib IIC T4 X (see Appendix, forms No. 0077011,0077012) 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 R MEK 60079-0-2011 Explosive atmospheres. Part 0. Equipment. General requirements; GOST R MEK 60079-11-2010 Explosive atmospheres. Part 11. Intrinsically safe circuit "i".

CERTIFICATE ISSUED BASED UPON Test Report No. 137.2014-T dd. 04.04.2014
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 dd. 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 2 sheets.
Inspection checkups - 2015, 2016, 2017, 2018.

VALID FROM 17.04.2014 TO 17.04.2019 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)

Yu.D. Zhukovin

(initials, surname)

APPENDIX

TO CERTIFICATE OF CONFORMITY No. TC

RU C-RU.ГБ05.B.00495 Sheet 1

Series RU

No. 0077011

1 PURPOSE AND SCOPE OF APPLICATION

The gas volume correctors FLOWGAS (hereinafter - correctors) are designed for measurement of the current values of pressure, temperature, gas volume at the operational conditions passing through the meter and for calculation of the gas volume (flow) corrected to standard conditions on gas distribution stations and gas distributing points of the industrial enterprises and facilities of utility.

Scope of application- Ex-zones of premises and outdoor units, according to Ex-marking and GOST IEC 60079-14-2011.

2. BASIC TECHNICAL DATA

2.1. Protection level ensured by case according to GOST Standard 14254-96	IP66
2.2. Service conditions:	
- ambient temperatures working range, °C	-40 ...+ 60
- relative ambient humidity at the temperature 35 °C, %	95 ±3
	(without moisture condensation)
2.3. Protection class of electrical equipment relating to risk of electrical shock acc. to GOST 12.2.007.0-75	III independent power supply source, of 2 batteries ER34615H type (Minamolo)
2.4. Correctors power supply (independent):	7.4
- maximum output voltage, U _o , V	70
- maximum output current, I _o , mA	0.5
- maximum output capacity P _o , W	
2.5. Electrical intrinsically safe parameters of the correctors are as follows:	9.0
- maximum input voltage, U _i , V	100
- maximum input current, I _i , mA	4.9
- maximum internal capacitance, C _i , microfarad	2.0
- maximum internal inductance, L _i , mH	
2.6. Electrical intrinsically safe parameters of the interface RS-232 (RS-485) are as follows:	5...10
- maximum input voltage, U _i , V	0.005 (125)
- maximum input current, I _i , mA	3.0
- maximum internal capacitance, C _i , microfarad	2.0
- maximum external inductance, L _i , mH	

3. DESCRIPTION OF DESIGN AND EXPLOSION PROTECTION METHODS

The correctors consist of microprocessor-based flow computer with display, keyboard, and integrated independent power supply source. Depending on the request, the correctors include the transducers of: absolute (gauge) pressure, differential pressure, gas temperature and ambient temperature.

The pressure transducer and ambient temperature transducer may be integrated into the case of the calculator or may be remote transducers.

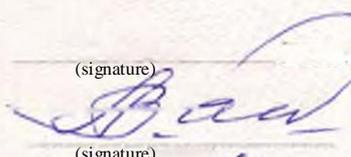
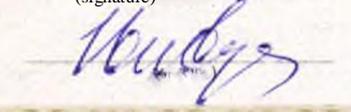
Structurally the corrector is performed in the case consisting of the bottom and cover made of aluminum alloy with magnesium content at most 7.5%. There is a polycarbonate sight port of the display and keyboard buttons on the cover. At the lower surface of the corrector case there are cable glands of power supply and of connection of external measuring devices, as well as earth connector. At the side surface of a case there is a nameplate with Ex marking and warning inscription. The case has inside a digital screen, printed boards with radio electronics elements, independent power supply board with IS barrier sealed by Viksint PK-68 compound.

Explosion protection of the correctors is provided by the type "intrinsically safe circuit" of "ib" level according to GOST R MEK 60079-11-2010 and by performance of case design of the correctors and use of materials safe with respect to friction sparking in line with GOST R MEK 60079-0-2011.

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Certifying Body Director
(Authorized Representative)

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

(signature) 
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APPENDIX

TO CERTIFICATE OF CONFORMITY No. TC _____ **RU C-RU.ГБ05.B.00495 Sheet 2**
 Series RU No. **0077012**

4. MARKING

Marking on the correctors includes the following data:

- trademark or manufacturer name;
- product type;
- product serial number and year of production;
- Ex marks;
- special explosion-proof mark;
- warning inscription: "Do not open in Ex premises (areas)";
- ambient temperature range during operation;
- 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 correctors:

- it is forbidden to replace elements of an independent power supply in the explosive-hazard areas;
- if the corrector is powered by an external power supply, it is required to use certified IS barriers, for example $\mu Z 660$ ac, provided for the supply of intrinsically safe circuits of "ib" level for operation with highly explosive mixtures of IIC group.
- the terminal devices of the correctors marked as "intrinsically safe circuits" can be connected only to the explosion-proof electrical equipment with the type of explosion protection "intrinsically safe circuits of "ib" level having the Certificate of Conformity for use in Ex areas, in which highly explosive mixtures of IIC group may be formed, as well as simple electrical devices compliant with intrinsically safe circuits according to GOST R MEK 60079-11-2010.

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 corrector.

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



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