

CERTIFICATE OF CONFORMITY

EAC

No. TC **RU C-RU.MIO62.B.03365**Series RU No. **0338626****CERTIFYING BODY** of the product PROMMASH TEST Limited Liability Company.

The principal place of business: 115114, Russian Federation, Moscow, 11 Derbenevskaya bank, room 60, Actual address: 115114, Russian Federation, Moscow, 11 Derbenevskaya bank, room 60. Phone: +7 (495) 775-48-45, fax: +7 (495) 775-48-45, E-mail: info@prommashtest.ru. Statement of Accreditation Reg. No. POCC RU.0001.11MIO62 issued on 01.12.2014 by the Federal Accreditation Service

APPLICANT Engels Instrument Manufacturing Association Signal Limited Liability Company.

Company registration number: 1026401974972.

The principal place of business: 413119, Russian Federation, Saratov region, Engels -19.

Actual address: 413119, Russian Federation, Saratov region, Engels -19.

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MANUFACTURER Engels Instrument Manufacturing Association Signal Limited Liability Company

The principal place of business: 413119, Russian Federation, Saratov region, Engels -19

Actual address: 413119, Russian Federation, Saratov region, Engels -19

PRODUCT FLOWGAS-T gas volume correctors.

The Ex-marking is given in the Appendix (forms No. 0251790 - 0251792).

The equipment is produced according to СЯМИ 408843-670 ТУ for operation in the explosive atmospheres according to the requirements of the Technical Regulation TR CU 012/2011 "On Safety of Equipment Intended for Use in Explosive Atmospheres".

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"

CERTIFICATE ISSUED BASED UPON - Act on the results of analysis of the production status of Engels Instrument Manufacturing Association Signal Limited Liability Company dd. 28.01.2016;

- Test Report No.T173 LAB-EXP/02-16 dd. 12.02.2016. Testing Laboratory for Technical Facilities of Pribor-Test Limited Liability Company. Certificate No.RA.RU.21 АГ33 dd. 28.01.2015.

ADDITIONAL INFORMATION Storage conditions, service life are mentioned in the operating instructions.

VALID FROM 20.02.2016 **TO** 19.02.2021 **INCLUSIVE**

(Seal): /Certification body of the product * PROMMASH TEST LLC * POCC RU.0001.11MIO62* For Certificates* EAC/

Certifying Body Director
(Authorized Representative)

(signature)

A.P.Filatchev
(initials, surname)

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

(signature)

A.V. Ivochkin
(initials, surname)

APPENDIX

TO CERTIFICATE OF CONFORMITY No. TC _____ **RU C-RU.MIO62.B.03365**
 Series RU No. **0251790**

1. Purpose and scope of application

The Certificate of Conformity applies to FLOWGAS-T gas volume correctors (hereinafter – correctors) designed to measure the temperature, pressure, active gas volume passing through the meter and to bring the active volume to standard conditions according to GOST 2939-63 on gas distribution stations and gas distributing points of the industrial enterprises and facilities of utility.

Scope of application - Ex-zones of 1 and 2 classes according to GOST IEC 60079-10-1-2011, highly explosive mixtures of the categories IIA, IIB, IIC under GOST R MEK 60079-20-1-2011 according to Ex-marking.

2. Description of equipment and explosion protection methods

FLOWGAS-T the gas volume correctors consist of: microprocessor-based flow computer with a display, keyboard, independent power supply, gas temperature transducer, installation kit for mounting a corrector on the gas meter, pressure transducer (optionally).

The corrector can be powered by independent or external power supply. The independent power supply is performed using 2 lithium cells and IS barrier installed in the housing, sealed by Viksint PK-68 compound.

The microprocessor-based flow computer is a microcomputer designed based on the modern microprocessing technology allowing to measure gas temperature and pressure to high precision, to calculate, to store and to print data on the peripherals. The computer is assembled on two printed circuit boards located in the rectangular housing. The housing and cover are produced of aluminium alloy ($Mg + Ti + Zr < 7,5\%$). At the side surface of housing there is a nameplate with Ex-marking and warning inscription.

The 2-line 20-digit liquid crystal indicator is used as a screen which allows the user to display information in an accessible form. The display complies with the cl. 7.4.2 of GOST R MEK 60079-0-2011 in part of the area limitation for the equipment of IIC group. The keyboard is located on the front panel of the housing. The keyboard is used to control the operation of the display (viewing information and programming the corrector).

Gas temperature transducer is a resistance temperature detector designed according to GOST 6651. The resistance temperature detector converts the temperature value to the corresponding value of the electric signal which is transferred to the measuring channel of flow computer.

The pressure transducer is an integral strain-gauge transducer, made in the form of a sapphire-titanium diaphragm on which a pressure-sensitive bridge circuit is formed. The measured parameter - the pressure acts on the diaphragm of the strain-gauge transducer. The deformation of the measuring diaphragm leads to a change in the resistance of the strain gauges and the imbalance of the bridge circuit. The electrical signal generated when the bridge circuit is unbalanced is transmitted to be processed to the flow computer.



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Expert (Expert Auditor)
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TO CERTIFICATE OF CONFORMITY No. TC

Series RU

RU C-RU.MIO62.B.03365

No. **0251791**

Basic technical data:

Electric parameters of an independent power supply:

Maximum output voltage, U_0 , V	7.4
Maximum output current, T_0 , mA	82
Maximum output capacity, P_0 , W.	0.64

Electrical intrinsically safe parameters of input circuits of external supply:

Maximum input voltage, U_i , V	9.45
Maximum input current I_i , mA	126
Maximum internal capacitance, C_i , microfarad	0.231
Maximum internal inductance, L_i , mH	17

Electrical intrinsically safe parameters of input circuits of impulse low frequency output;

Maximum input voltage, U_i , V	12
Maximum input current I_i , mA	61
Maximum internal capacitance, C_i , microfarad	0.15
Maximum internal inductance, L_i , mH	0.01

Electrical intrinsically safe parameters of RS-232 interface:

Maximum input voltage, U_i , V	13.5
Maximum input current I_i , mA	126
Maximum internal capacitance, C_i , microfarad	0.45
Maximum internal inductance, L_i , mH	0.01

Ingress protection

IP66

Ambient temperature range, °C

- 40 to + 60

Explosion protection of the correctors is provided by their design meeting the general requirements of GOST R MEK 60079-0-2011 and the type of protection “intrinsically safe circuit “i” in line with GOST R MEK 60079-11-2010.

3. The equipment conforms to the requirements of:

TR CU 012/2011

Technical Regulation of the Customs Union “On safety of equipment intended for use in explosive atmospheres”;
Explosive atmospheres. Part 0. Equipment. General requirements;
Explosive atmospheres. Part 11. Intrinsically safe circuit “i”.

GOST R MEK 60079-0-2011

GOST R MEK 60079-11-2010

4. Ex -marking

1Ex ib IIC T4 Gb X

The explosion safety marking is performed using  special sign according to TR CU 012/2011.

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:



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RU C-RU.MIO62.B.03365

Series RU

No. **0251792**

- it is forbidden to replace elements of an independent power supply of the corrector in the explosive-hazard areas;
- if the corrector is powered by an external power supply, it is required to use certified IS barriers, provided for the supply of intrinsically safe circuits of "ib" level for operation with highly explosive mixtures of IIC group.



(Seal): /Certification
body of the product *
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