

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	IECEx FTZU 18.0006X	Iss	ue No: 0	Certificate history: Issue No. 0 (2018-08-30)
Status:	Current	Par	ne 1 of 4	
Date of Issue:	2018-08-30			
Applicant:	KROHNE Altometer Kerkeplaat 12 3313 LC Dordrecht The Netherlands			
Equipment: <i>Optional accessory:</i>	Ultrasonic Gas Flowmeter type ALTOSONIC V1	2		
Type of Protection:	flameproof enclosure, increase safety, encapsul	ation		
Marking: E E	Ex db eb IIB+H2 T6T3 Gb - with transducer type G7.nn or G11.nn Ex db eb ma IIB+H2 T6T4 Gb – with transducer type G6.nn			
Approved for issue on Certification Body:	behalf of the IECEx	Dipl. Ing. Lukáš Martinák		
Position:		Head of Certification Body		
Signature: (for printed version)				
Date:	-			
	-			
<ol> <li>This certificate and schedule may only be reproduced in full.</li> <li>This certificate is not transferable and remains the property of the issuing body.</li> <li>The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.</li> </ol>				

Fyzikalne technicky zkusebni ustav (Physical -Technical Testing Institute) Pikartska 7, 71607 Ostrava - Radvanice Czech Republic





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Manufacturer:	KROHNE Altometer Kerkeplaat 12 3313 LC Dordrecht The Netherlands	

Additional Manufacturing location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

#### STANDARDS:

The apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2011	Explosive atmospheres - Part 0: General requirements
Edition:6.0	
IEC 60079-1 : 2014-06	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0	
IEC 60079-18 : 2014	Explosive atmospheres – Part 18: Equipment protection by encapsulation "m"
Edition:4.0	
IEC 60079-7 : 2015	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.0	

This Certificate does not indicate compliance with electrical safety and performance requirements other than those expressly included in the

Standards listed above.

#### **TEST & ASSESSMENT REPORTS:**

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

CZ/FTZU/ExTR18.0009/00

Quality Assessment Report:

NL/DEK/QAR11.0057/04



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Schedule

### EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The Ultrasonic Gas Flowmeter type ALTOSONIC V12 is a family of ultrasonic gas flow meters intended for the trade and distribution of natural gas and other gases.

The ALTOSONIC V12 consists of the gas flow measuring sensor (meter sizes in the range from DN 100 up to DN 750, bigger diameter also possible on request) which is combined with the Signal Converter Housing type MH300 CT-Ex T-shape. A number of ultrasonic transducers is installed inside the meter body. The safety covers of transducer's coaxial wires situated on sides and top of gas flow measuring sensor are in Ex-protection Ex eb.

Each pair of ultrasonic transducers constitute an acoustic path (measuring path). The electronic unit is installed into the Signal Converter Housing type MH300 CT-Ex T-shape (type of Ex-protection Ex db) with a separate component certificate (IECEx FTZU 18.0003U). The Ultrasonic Gas Transducers are connected by means of coaxial wires, which enter the electronics compartment at the bottom by using the flameproof Cable Feed-through type LC-.../.-Ex ( type of Ex-protection Ex db) certified under IECEx DEK 16.0049U. As acoustic sensors the Ultrasonic Gas transducers type G6.nn ( type of Ex-protection Ex db ma) and G7.nn or G11.nn (type of Ex-protection Ex db) with own component certificate IECEx FTZU 17.0029.

Ratings:

Power supply: 24V DC +/- 20%

Power consumption: 10W (signal converter without Diagnostic Board DB)

Power consumption: 12W (signal converter with Diagnostic Board DB)

#### ALTOSONIC V12 flowmeter versions:

• ALTOSONIC V12 standard version flowmeter: a six path (12 transducers) flow meter with reflective paths and one set of electronics

• ALTOSONIC V12D, direct path flowmeter: a six path (12 transducers) flow meter with 5 direct paths and one reflective path including one set of electronics

• ALTOSONIC V12T, Twin flow meter: a fully redundant flow meter with two sets of electronics and at least 7 (6+1) paths (14 transducers) with a maximum of 12 (6+6) paths (24 transducers)

ALTOSONIC V12DT reference flowmeter: a combination of V12D and V12T

• ALTOSONIC V12Check version flowmeter: a six path (12 transducers) flow meter with 5 reflective paths, one vertical reflexive path for diagnostic and 2 set electronics, one electronics for the 5 reflective paths with custody transfer roll and one electronics for the vertical path for check roll.

• ALTOSONIC V12DCheck version flowmeter: a six path (12 transducers) flow meter with 5 direct paths and 2 set electronics, one electronics for the 5 direct paths with custody transfer roll and one electronics for the vertical path for check role.

• ALTOSONIC V12DB, it is identical with ALTSONIC V12 D and it doesn't have the reflection path.

#### SPECIFIC CONDITIONS OF USE: YES as shown below:

1. Rated Ambient temperature range: -40°C to +60°C

2. For information about dimension of flameproof joints it is necessary to contact manufacturer of equipment.

3. The signal converter enclosure is fixed to the support by means of four M6x16 hexagon head screws to ISO 4017 or hexagon socket head cap screws to ISO 4762, material A2-70 or A4-70.

4. To avoid the risk of ignition as a result of electrostatic charging, the ALTOSONIC V12 can not be used in locations in which - High charge generating process or mechanical friction and separation processes or electron emission (e.g. near electrostatic coating equipment) may occur.



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5. The signal converter enclosure may be equipped with Ex-equipment cable glands or Ex- equipment blanking elements with type of Exprotection according to Ex marking in certificate and with minimum IP code IP 6X.

6. The surface temperature of the ALTOSONIC V12 equipped with transducers in association with SS MH300CT-Ex T-shape enclosure:

a) Titanium and Inconel transducers:

G7.nn & G11.nn	Max. process temperature at			
Temperature class	Tamb ≤ 45°C	Tamb ≤ 50°C	Tamb ≤ 55°C	Tamb ≤ 60°C
Т6	50 °C	50 °C	50 °C	50 °C
Т5	65 °C	65 °C	65 °C	60 °C
Τ4	100 °C	100 °C	100 °C	
ТЗ	175 °C	140 °C		

b) Epoxy transducers:

G6.nn	Max. process temperature at			
Temperature class	Tamb ≤ 45°C	Tamb ≤ 50°C	Tamb ≤ 60°C	
T6	65 °C	50 °C	50 °C	
Т5	80 °C	65 °C	60 °C	
T4	100 °C	100 °C		