(1) **EC Prototype Test Certificate**

(2) Equipment and protective systems intended for use in potentially explosive areas - **Directive 94/9/EC**

(3) EC Prototype Test Certification number:
PTB 01 ATEX 2014 X

(4) Equipment: ultrasonic flow transducer type
UFC 500 F/.../...-EEx and ULC 500 F/.../...-EEx

(5) Manufacturer: Krohne Altometer

(6) Address: NL-3313 LC Dordrecht

(7) This equipment and any acceptable version thereof are specified in the documentation section of this certificate.

(8) The Physikalisch-Technische Bundesanstalt, body number 0102 in accordance with Article 9 of the Council Directive 94/9/EC from 23 March 1994, certifies that this equipment 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 areas specified in Appendix II of the directive.

The test results are logged in the confidential report PTB Ex 01-20263.

(9) Compliance with the essential health and safety requirements has been assured via compliance with:

EN 50014:1997+A1+A2 EN 50018:1994 EN 50019:1994 EN 50020:1994

(10) An "X" located after the certificate number indicates special conditions for the safe use of the equipment listed in the documentation of this certificate.

(11) This EC Prototype Test Certificate relates only to the design and construction of the specified equipment in accordance with Directive 94/9/EC. Further requirements of this directive apply to the manufacture and supply of this equipment.

(12) The equipment must be marked with the following information:

II 2 G EEx d [ib] IIC T6 / EEx de [ib] IIC T6 /
EEx d [ia/ib] IIC T6 / EEx de [ia/ib] IIC T6

Certification department for explosion protection Braunschweig, 20 March, 2001
by order of

Dr.-Ing. U. Johannsmeyer
Governing body director

(13) **Schedule**

(14) **EC-Type Examination Certificate PTB 01 ATEX 2014 X**

(15) Description of the equipment

The ultrasonic flow transducer type UFC 500 F/.../...-EEx is used as a separate unit for the control of Piezo converters in the measured value recorder for the measurement, counting and display of the flow of flammable and non-flammable liquid media. The alternative type designation is ULC 500 F/.../...-EEx.

The range of the maximum permissible ambient temperature for the following variants are:

Type UFC (ULC) 500 F/.../...-EEx: -40°C to +60°C
Type UFC (ULC) 500 F/ i /...-EEx: -20°C to +65°C

Electrical data

Type UFC (ULC) 500 F/.../...-EEx:

Power supply circuit (terminals L, N, PE)	**AC version 1**	
	240 V	-16/+8 %, 55 mA
	230 V	±13 %, 53 mA
	220 V	-9/+18 %, 50 mA
	120 V	-16/+8 %, 110 mA
	115 V	±13 %, 105 mA
	110 V	-9/+18 %, 100 mA
	AC version 2	
	200 V	-15/+10 %, 1 mA
	100 V	-15/+10 %, 122 mA
	AC version 3	
	48 V	±13 %, 275 mA
	24 V	±13 %, 550 mA
(terminals L=~, L=~, FE)	**AC/DC version**	
	24 V	–25/+33 %, 440 mA
Pulse inputs/outputs (terminals B1, B-, B2)	$U \leq 36$ V; $I \leq 150$ mA $U_m = 250$ V AC	
Current output (terminals I+, I-)	$U \leq 18$ V; $I \leq 22$ mA $U_m = 250$ V AC	

Sensor circuits (connections CON 1 to 4)	in ignition protection type intrinsically safe EEx ib IIC for connection to accompanying sensors Maximum values: U_o = 8.7 V I_o = 360 mA P_o = 783 mW Linear characteristic C_i = 4.3 µF L_i negligibly small C_o = 1.2 µF L_o = 0.17 mH

All circuits are to be viewed as being interconnected.

Type UFC (ULC) 500 F/ i /...-EEx:

Aux. power (connections 1L, 0L, FE)	U_N = 24 V DC +30%/-25%, 8 W U_N = 24 V AC/DC +10%/-15%, 11 VA, 48 to 63 Hz internal fusing $I_N \leq 1.25$ A U_m = 250 V
Signal circuits	depends on module outfitting:
Module: **PS-A, FA-ST**	in ignition protection type intrinsically safe EEx ia IIC or EEx ib IIC only for connection to certified intrinsically safe circuits with the following maximum values: U_i = 30 V I_i = 250 mA P_i = 1.0 W C_i = 5 nF L_i negligibly small
F-PA, F-FF	in ignition protection type intrinsically safe EEx ia IIC or EEx ib IIC only for connection to certified intrinsically safe circuits with the following maximum values: U_i = 30 V I_i = 300 mA P_i = 4.2 W C_i = 5 nF L_i negligibly small

DC-I in ignition protection type intrinsically safe EEx ia IIC
or EEx ib IIC

Maximum values:
U_o = 23.5 V
I_o = 98 mA
P_o = 0.6 W
Characteristic: linear
C_o = 127 nF
L_o = 4 mH

Sensor circuits (connections CON 1 to 4) in ignition protection type intrinsically safe EEx ib II

for connection to accompanying sensors
Maximum values:
U_o = 8.7 V
I_o = 360 mA
P_o = 783 mW
Characteristic: linear
C_i = 4.3 µF
Li negligibly small
C_o = 1.2 µF
L_o = 0.17 mH

The intrinsically safe signal circuits are securely electrically isolated from the non-intrinsically safe circuits up to a rated peak voltage of 375 V.

(16) Test report PTB Ex 01-20263

(17) Special conditions for safe use

1. It must be guaranteed that the bonding conductor is securely connected to the potential equalization of the potentially explosive area.

2. When opening the pressure-fixed capsule, you must wait a specified amount of time (warning sign) after the flow meter has been switched off. This time is dependent on the temperature class: T6 – 20 min., T5 – 11 min.

(18) Essential health and safety requirements

Fulfilled by above mentioned standards.

Certification department for explosion protection by order of

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Dr.-Ing. U. Johannsmeyer
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