(1) EU-TYPE EXAMINATION CERTIFICATE

(2) Equipment and Protective Systems intended for use in Potentially Explosive Atmosphere - **Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number

TÜV 19 ATEX 8332 X Issue: 04

(4) Equipment: **Fluid Properties Sensors; Type-SR Type-DV, and Type-BT**

(5) Manufacturer: **Rheonics GmbH**
(6) Address: **Zuercherstrase 41**
8400 Winterthur Switzerland

(7) This product and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) The TÜV Rheinland Zertifizierungsstelle für Explosionsschutz of TÜV Rheinland Industrie Service GmbH, Notified Body No. 0035 in accordance with Article 21 of the Council Directive 2014/34/EU of 26th February 2014, certifies this product which 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 atmosphere, given in Annex II to the Directive.

The examination and test results are recorded in the confidential report 557/Ex 8332.05/19

(9) Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule of this certificate, has been assessed by reference to:

EN IEC 60079-0: 2018 **EN 60079-11: 2012**

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design and specification for construction of the equipment or protective system. It does not cover the process for actual manufacture or supply of the equipment or protective system, for which further requirements of the directive are applicable.

(12) The marking of the equipment shall include the following:

II 1 G Ex ia IIC/IIB/IIA T6 … T1 Ga
II 1 D Ex ia IIIC T_{200} 85°C … 435°C Da

TÜV Rheinland Zertifizierungsstelle für Explosionsschutz Cologne, 2024-08-05

Dipl.-Ing. Klauspeter Graffi

This EU-Type Examination Certificate without signature and stamp shall not be valid.
This EU-Type Examination Certificate may be circulated only without alteration. Extracts or alterations are subject to approval by the TÜV Rheinland Industrie Service GmbH TÜV Rheinland Group Am Grauen Stein 51105 Köln
Tel. +49 (0) 221 806-0 Fax. + 49 (0) 221 806 114

(13) Annex

(14) **EU Type Examination Certificate**

TÜV 19 ATEX 8332 X Issue: 04

(15) Description of equipment

15.1 Equipment and type:

Fluid Properties Sensors; Type-SR Type-DV, and Type-BT

15.2 Description / Details of Change

General product information
SRV: A sensor to measure viscosity of a liquid in which its active end is immersed
SRD: A sensor to measure simultaneous density and viscosity of a liquid in which its active end is immersed.
Rheonics DV (DVM, DVP and DVI) sensors measure fluid density and viscosity in higher temperature and pressure ranges.
Rheonics BT (BTC, BTS) are viscosity and density meters with unobstructed tubular flow channels meant for inline measurements in piping installations.
The sensors are made in type of protection Ex ia and can be installed in hazardous gas atmospheres of up to zone 0. The sensors are available in different housing variants.

Technical Data

Electrical data:

	Transducer Coil + Pt1000 circuit	
IS Parameter	**Gas group IIC:**	**Gas group IIB:**
U_i	10V	10V
I_i	30mA	80mA
P_i	75mW	130mW
C_i	negligible	negligible
L_i	20mH	20mH

The sum of the output currents I_o of the supplying circuits shall not exceed the given I_i and the input circuits shall refer to the same ground.

Environmental data:

Ambient temperatures for gas ignition classes

	Ambient and fluid temperature range T_a
T class	**Gas group IIC / IIB:**
T6	-200°C….+70°C
T5	-200°C ….+85°C
T4	-200°C….+120°C
T3	-200°C ….+185°C
T2	-200°C ….+285°C
T1	-200°C ….+435°C

Ambient temperatures for dust ignition temperature ranges

Dust Group IIIC:	
Maximum Surface Temperature	**Ambient Temperature**
T85°C	-200°C….+70°C
T100°C	-200°C ….+85°C
T135°C	-200°C….+120°C
T200°C	-200°C ….+185°C
T285°C	-200°C ….+270°C
T435°C	-200°C ….+420°C

Details of Change:

- Extended for compliance with dust group atmospheres.
- Included Type-DV, and Type-BT models.
- Updated manufacturer address.

(16) Test-Report No. 557/Ex8332.05/19

(17) Special Conditions for safe use

1. The max. ambient and fluid temperature Ta for gas group depends on the temperature class of the explosive atmosphere:

   See environmental data.

2. Equipment maximum surface temperatures vary according to different ambient temperature ranges in the dust group:

   See environmental data.

3. The sensor has to be included into the equipotential bonding system.

4. The DVM, DVP and DVI sensors contain titanium. These sensors must be protected from impact or mechanical friction during the installation and use that can chip or abrade their housings or active elements.

(18) Basic Safety and Health Requirements

Covered by afore mentioned standard

TÜV Rheinland Zertifizierungsstelle für Explosionsschutz Cologne, 2024-08-05

Dipl.-Ing. Klauspeter Graffi