1 EU-Type Examination Certificate

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

3 Certificate Number: **ExVeritas 23ATEX1652X** Issue: **2** Date: **11/04/2025**

4 Equipment: **Hydrocarbon in Water and Hydrogen Sulfide in Liquid or Gas Analyzer**

5 Manufacturer **Analytical Systems KECO**

6 Address 9515 Windfern Rd., Houston, TX 77064, USA

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

8 ExVeritas, Notified Body number 2804 in accordance with Chapter 4 of the Council Directive 2014/34/EU of 26 February 2014, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to design and construction of equipment and protective systems for use in potentially explosive atmospheres given in Annex II to the Directive.

9 Compliance with the applicable Essential Health and Safety Requirements has been assured by compliance with the following Standards and section 16 of this certificate:

EN IEC 60079-0: 2018
EN 60079-2: 2014
EN IEC 60079-7:2015+A1:2018

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 section 15 of this certificate.

11 This EU-Type Examination Certificate relates only to the design, construction, examination and tests of the specified equipment or protective system in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment shall include the following:

II 2 G
Ex eb pxb IIB+H2 T3 Gb
T_{amb} -20°C to +55°C

DANAK
PROD Reg.No. 7044
Member of EA MLA

On behalf of ExVeritas

Peter T. Lauritzen

13 Description of Equipment or Protective System

The Analyzers quantify either total volatile organic compounds (VOCs) hydrocarbons in water, hydrogen sulfide in various liquids (including but not limited to water, crude oil, diesel, liquid fuels, naphtha and other petroleum products and liquids) or gas using Sample Transfer Stripper or the PermaStream[TM] Stripper (exclusive KECO Membrane Technologies) and a sensor system. The analyzer consists of one enclosure; being purged pressurized. Equipment enclosures is a IECEx certified Ex eb IIC Gb (IECEx ETL 19.0036U or IECEx ITS 14.0004U) constructed of stainless steel including IECEx certified window kit Ex e IIC Gb (IECEx SIR 13.0123U) with a direct mount IECEx certified (IECEx DNV 09.0001X) Ex e mb ib [px] IIC T4 Gb purge controller installed. The purge / pressurized analyzer enclosure volume is 113.25 liters (4 cuft). The analyser sample line flows through a normally closed, spring return shut off valve outside the purged/ pressurized enclosure. The purge gas line supplying the purged/ pressurized enclosure is split into two branches prior to entry. One branch supplies the pressure regulator supplying the purged/ pressurized enclosure and the second branch holds open the shut off valve supplying the sample to the analyzer enclosure. If the purge gas supply pressure drops below 5.52 bar (80 psig) the spring will return the shut off valve to its normally closed position; stopping sample from entering the purged/ pressurized enclosure.

Differences Between Models:

Model	Heater	Enclosure	Input Ratings	Analyzer Function	Controller	Sensor	Furnace
205HV ATEX-IECEx	Cirrus 80 (300-600W)	HV	**120VAC 12.5A 240VAC 6A**	H2S in Liquid	Tape Deck Panel	Optics Block	N
205 PermaStream ATEX-IECEx	Intertec CP Multitherm (100W)	HV	**120VAC 3A 240VAC 1.5A 12VDC 10A 24VDC 5A**	H2S in Liquid	Tape Deck Panel	Optics Block	N
205P ATEX-IECEx	Cirrus 40 (230W)	P	**120VAC 6A 240VAC 3A**	H2S in Liquid	Tape Deck Panel	Optics Block	N
204P ATEX-IECEx	Cirrus 40 (230W)	P	**120VAC 6A 240VAC 3A**	Hydrocarbon in Water	HMI	VOC Sensor	N
204 PermaStream ATEX-IECEx	Cirrus 80 (300-600W)	HV	**120VAC 6A 240VAC 3A**	Hydrocarbon in Water	HMI	VOC Sensor	N
T200 ATEX-IECEx	Intertec CP Multitherm (100W)	P	**120VAC 3A 240VAC 1.5A**	H2S in Gas	Tape Deck Panel	Optics Block	N

14 Associated Report and Certificate History

Number	Report Issue Date	Issue	Description
4561/A/1	2023-09-06	0	Initial issue of the Prime Certificate
4880/A/1	2024-02-26	1	Remove Specific Condition of Use on IP Rating
4880/A/2	2025-04-11	2	Addition of T200 series Hydrogen in Sulfide Analyzers

15 Special Conditions for Safe Use

1. Wiring connection to equipment shall be made by an IECEx Ex e entry device.
2. Equipment is approved for extended ambient range of -20°C to +55°C
3. Sample gas may not have an oxygen concertation of greater than 2% V/V
4. Sample gas must not have a Lower Flammable Limit less than 3.9% or an Upper Flammable Limit exceeding 80%
5. The calibration gas mixture must be below the Lower Flammable Limit.

16 Essential Health and Safety Requirements

Essential Health and Safety Requirements are addressed by the standards listed in section 9 and where required the report listed in section 14.1

The manufacturer shall inform the Notified Body of any modifications to the design of the product described by this certificate and associated report.