1 # EU-TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective systems intended for use in Potentially Explosive Atmospheres - Directive 2014/34/EU**

3 **EU-Type Examination Certificate No:** **FM21ATEX0004X**

4 **Equipment or protective system: (Type Reference and Name)** **Genesis Model ED1, ED2 High Performance Emulsion Detector Transmitter**

5 **Name of Applicant:** **AMETEK Magnetrol USA, LLC**

6 **Address of Applicant:** **705 Enterprise Street**
Aurora, IL 60504
USA

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and documents therein referred to.

8 FM Approvals Europe Ltd, notified body number 2809 in accordance with Article 17 of Directive 2014/34/EU of 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report number:

PR458732 dated 14th October 2021

9 Compliance with the Essential Health and Safety Requirements, with the exception of those identified in item 15 of the schedule to this certificate, has been assessed by compliance with the following documents:

EN IEC 60079-0:2018, EN 60079-1:2014, EN IEC 60079-7:2015+A1:2018, EN 60079-11:2012 and EN 60529:1991+A1:2000+A2:2013

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.

11 This EU-Type Examination certificate relates only to the design, 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 or protective system shall include:

Transmitter
II 2 (1) G Ex db [ia IIB Ga] IIB+H2 T4 Gb Ta = -40°C to +70°C;
II 3 (1) G Ex ec [ia IIB Ga] IIC T4 Gc Ta = -15°C to +70°C;

Remote Probe
II 1 G Ex ia IIB T6…T1 Ga Ta = -40°C to +70°C

Martin Crowe
Certification Manager, FM Approvals Europe Ltd.

Issue date: 10th June 2022

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13 **Description of Equipment or Protective System:**

The Genesis Model ED1 and ED2 Emulsion Detectors are advanced transmitters that effectively measures 3 phases of liquids. These three phases are defined as the total level, top of emulsion and bottom of emulsion. Additional measurement of foam level and sand accumulation can also be made.

The Genesis Model ED1 and ED2 are each comprised of three parts: main electronics, remote cable, and probe assembly. The probe assembly includes integrated electronics tied directly to a probe.

The Genesis Model ED1 and ED2 are advanced transmitters with separate outputs. They use a nominal input voltage of 24 VDC and provides four analog 4-20mA loops outputs with one of the loops providing HART digital communication.

The Genesis Model ED1 and ED2 main electronics are housed in a dual compartment enclosure. Power wiring and electronics are contained in separate compartments. The main electronics connection to the remote electronics, will be an explosion proof connector that holds 4 wires. The 4 wires will be intrinsically safe outputs from the main electronics and consist of a 5V power supply (power/ground) and 2 wire RS485 communication lines.

The Genesis Model ED1 and ED2 remote cable consists of 4 wires being housed in flexible conduit with custom connectors to the main housing and probe assembly. The standard remote cable lengths will be 25', 50', and 100' with the design supporting a maximum of 150'.

The Genesis Model ED1 and ED2 probe assembly consists of a probe electronics housing integrally mounted on probe. The probe electronics consist of two separate boards, one that is responsible for digital communication/power and the second for TDR measurements. Two probe configurations are being used, which include a 5-conductor probe and a coaxial probe.

Ratings –
T6…T1 temperature code are defined by the following table:

Process Temperature	***Temperature Code***
≤ 75°C	T6
75°C to 90°C	T5
90°C to 120°C	T4
125°C to 185°C	T3
185°C to 285°C	T2
285°C to 435°C	T1

The Genesis Model ED1 and ED2 are rated for an ingress protection of IP67.

Electrical data:
The transmitter is powered by a safety extra-low voltage (SELV) supply
U_m ≤ 30Vdc, V_{nom} = 24Vdc, I_{Nom} = 133.6mA

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ED1-210a-b1c Eclipse Guided Wave Radar (GWR) Level Transmitter (down-stream)
ED2-210a-b1c Eclipse Guided Wave Radar (GWR) Level Transmitter (up-stream)
a = Accessories = A, B, C or D
b = Classification = 3 or C
c = Conduit Connection = 0 or 1

Pab-cde0-A0f-gh-ijk Probe Model Number
a = Units of Measure= E or M
b = Configuration = F or C
c = Flange Size = (when Digit 5 = 3, 4, 5, 6, K or L): 5, 6 or 7
(when Digit 5 = A, B, C, D, E or F): E, F or G
d = Flange Type = (when Digit 4 = 5, 6 or 7): 3, 4 or 5;
(when Digit 4 = 7):K
(when Digit 4 = E, F or G): A, B, D, E or F
e = Construction codes = 0, K, L, M or N
f = O-Ring material = 0, 2, 8 or A
g = Probe Type = 0 or 1
h = remote housing material = 1 or 2
ijk = Insertion length = Available when digit 2 = A: One inch increments 020 thru 120;
Available when digit 2 = C: One centimeter increments 050 thru 610

14 **Specific Conditions of Use:**

Transmitter

1. The flamepaths of the equipment are not intended to be repaired. Consult the manufacturer if repair of the flamepath joints is necessary.
2. Refer to the manufacturer's instructions to reduce the potential of an electrostatic charging hazard on the equipment enclosure.
3. The transmitter shall be connected to a safety extra low-voltage circuit (SELV) with $U_m \leq 30V$

Probe

1. Refer to the manufacturer's instructions to reduce the potential of an electrostatic charging hazard on the equipment enclosure.

15 **Essential Health and Safety Requirements:**

The relevant EHSRs that have not been addressed by the standards listed in this certificate have been identified and assessed in the confidential report identified in item 8.

16 **Test and Assessment Procedure and Conditions:**

This EU-Type Examination Certificate is the result of testing of a sample of the product submitted, in accordance with the provisions of the relevant specific standard(s), and assessment of supporting documentation. It does not imply an assessment of the whole production.

Whilst this certificate may be used in support of a manufacturer's claim for CE Marking, FM Approvals Europe Ltd accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

This Certificate has been issued in accordance with FM Approvals Europe Ltd's ATEX Certification Scheme.

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17 **Schedule Drawings**

A list of the significant parts of the technical documentation is annexed to this certificate and a copy has been kept by the Notified Body.

18 **Certificate History**

Details of the supplements to this certificate are described below:

Date	Description
19th October 2021	Original Issue.
10th June 2022	Supplement 1: Report Reference: RR232716 dated 9th June 2022. Description of the Change: (1) Addition of option ED2, which is a minor firmware change not affecting safety. (2) Company name change in section 5.

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Blueprint Report

AMETEK Magnetrol USA LLC (1000000020)

Class No 3610

Original Project I.D. 458732

Certificate I.D. FM21ATEX0004X

Drawing No.	Revision Level	Drawing Title	Last Report
005-8085	A	Genesis Nameplates	PR458732
030-3622	A	3 Phase Digital Assembly Board	PR458732
030-3629	A	3 Phase Probe – TDR Assembly Board	PR458732
030-9809	B	3 Phase Wiring Board Assembly	PR458732
030-9810	B	3 Phase Connector Board Assembly	PR458732
030-9811	C	3 Phase Loop Board Assembly	PR458732
030-9812	C	3 Phase Processor Board Assembly	PR458732
094-1856	A	3 Phase Digital Schematic	PR458732
094-1859	A	3 Phase Probe – TDR Schematic	PR458732
094-9809	A	3 Phase Wiring Board Schematic	PR458732
094-9810	A	3 Phase Connector Board Schematic	PR458732
094-9811	A	3 Phase Loop Board Schematic	PR458732
094-9812	A	3 Phase Processor Board Schematic	PR458732
099-6579	B	Genesis Model ED1 Controlled Agency Drawing	RR232716
63-601	-	Genesis Model ED1: Installation and Operating Manual	PR458732