

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: FM19ATEX0204X**

4 **Equipment or protective system: Models 962-50, 961-2, 962-2, 961-7, 962-7 Echotel
(Type Reference and Name) Ultrasonic Switches**

5 **Name of Applicant: Magnetrol International Inc.**

6 **Address of Applicant: 705 Enterprise St
Aurora IL 60504
United States of America**

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 26th 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:

PR452811 dated 04th August 2020

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 60079-11:2012,
EN 60079-26:2015 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:



96a-50bc-dCe / 9fg-hij-k, 96a-2Dbc-dCe / 9fg-hij-k and 96a-7Dbc-dCe / 9fg-hij-k Integral and Remote Echotel Ultrasonic Switches with Echotel Ultrasonic Probe
II 1/2 G Ex db IIC T6 Ga/Gb -40°C ≤ Ta ≤ +70°C

96a-50bc-dAe / 9gh-ijk-l Integral Echotel Ultrasonic Switches with Echotel Ultrasonic Probe
II 1 G Ex ia IIC T4 Ga -40°C ≤ Ta ≤ +70°C

Damien McArdle

Damien Mc Ardle
Certification Manager, FM Approvals Europe Ltd.

Issue date: 05th August 2020

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

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13 Description of Equipment or Protective System:

General - The 961 and 962 Ultrasonic Level Switches are compact integral units that utilize pulsed signal technology to perform high or low level measurements in a wide variety of Liquid applications. These switches feature a 316 stainless steel, Monel, Hasteloy, Kynar and CPVC tip-sensitive fork style transducer that is offered in a variety of NPT, flanged and sanitary process connections. The electrical pulses generated by the microprocessor-based electronics are transmitted through the analog processor to the ultrasonic sensor. The sensor converts these into ultrasonic pulses and directs them to the measuring surface. The sensor detects the returning echo. The microprocessor-based electronics amplifies and converts the signal into a digital representation of the level, flow, or volume measurement. The transmitter system consists of an electronics enclosure with remote located probe or integral probe.

Construction - The Models 961 and 962 consist of a single compartment electronics housing with thread-on window cover and a threaded (potted) adapter/probe inserted into the housing base. The enclosure is constructed of aluminium or stainless steel and can be provided with either two (2) ¼ inch NPT, two (2) ½ inch NPT or two (2) M20 openings. The Models 961 and 962 can be provided as an integral or remote assembly.

The equipment enclosures have an ingress protection rating of IP66.

Ratings – The product ratings are as follows:

Intrinsic Safety Energy Limitation Parameters:

Ui = 28.4 V; li = 94 mA; Pi = 0.67 W; Ci = 10.4 nF; Li = 3 µH.

Model 961: Input 12-28.4Vdc, 1 Watts, 4-20mA, or 100-265Vac 50/60Hz. 3 Watts, Output 4 to 20mA or two relay 1 amp, 250 Vac 50/60Hz. or 30 Vdc relay outputs.

Model 962: Input 12-28.4Vdc, 1 Watts, 4-20mA, or 100-265Vac 50/60Hz. 3 Watts, Output 4 to 20mA or three 1 amp, 250 Vac 50/60Hz. or 30 Vdc relay outputs.

96a-50bc-dCe / 9fg-hij-k, 96a-2Dbc-dCe / 9fg-hij-k and 96a-7Dbc-dCe / 9fg-hij-k Integral and Remote Echotel Ultrasonic Switches with Echotel Ultrasonic Probe

a = 1 single point or 2 dual point.

b = Self Test A or N.

c = Accessories 0 or 1.

d = Mounting 0 or 1.

e = Housing and conduit connection 0, 1, 2 or 3.

f = English or metric A or M.

g = Single Point 1 or Dual Point 2.

h = Material of construction A, S, B, C, R, P, N, or K.

i = Process connections 11, 21-25, 33-35, 43-45, 53-55, 63-65, 2P, 3T, 4T, BS, CS, DS, BN, DN, VN, VV, BA, BB, BC, CA, CB, CC, DA, DB, DD, DE.

j = Transducer options A, B, C, D, H.

k = Actuation length 001-130 e = "A" or 003-330 e = "M".

96a-50bc-dAe / 9gh-ijk-l Integral Echotel Ultrasonic Switches with Echotel Ultrasonic Probe

Energy Limitation:

Ui = 28.4 V; li = 94 mA; Pi = 0.67 W; Ci = 10.4 nF; Li = 3 µH.

a = 1 single point or 2 dual point.

b = Self Test A or N.

c = Accessories 0 or 1.

d = Mounting 0 or 1.

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e = Housing and conduit connection 0, 1, 2, 3, 4 or 5.

g = English or metric A or M.

h = Single Point 1 or Dual Point 2.

i = Material of construction A, S, B, C, R, P, N, or K.

j = Process connections 11, 21-25, 33-35, 43-45, 53-55, 63-65, 2P, 3T, 4T, BS, CS, DS, BN, DN, VN, VV, BA, BB, BC, CA, CB, CC, DA, DB, DD, DE.

k = Transducer options A, C, D, H.

l = Actuation length 001-130 d = "A" or 003-330 d = "M".

14 Specific Conditions of Use:

96a-50bc-dCe / 9fg-hij-k, 96a-2Dbc-dCe / 9fg-hij-k and 96a-7Dbc-dCe / 9fg-hij-k Integral and Remote Echotel Ultrasonic Switches with Echotel Ultrasonic Probe.

1. The enclosure contains aluminum and is considered to present a potential risk of ignition by impact or friction. Care must be taken during installation and use to prevent impact or friction.
2. To maintain the T6 temperature code care shall be taken to ensure the "Enclosure Temperature" does not exceed 70°C.
3. The risk of electrostatic discharge shall be minimized at installation, following the direction given in the instructions.
4. Contact the original manufacturer for information in the dimensions of flameproof joints.
5. For Installation with ambient temperature of 70°C, refer to the manufacturer's instructions for guidance on proper selection of conductors.
6. The Ultrasonic Probe is only for use with the Echotel Ultrasonic Switch.

96a-50bc-dAe / 9gh-ijk-l Integral Echotel Ultrasonic Switches with Echotel Ultrasonic Probe

1. The enclosure contains aluminum and is considered to present a potential risk of ignition by impact or friction. Care must be taken during installation and use to prevent impact or friction.
2. To maintain the T4 temperature code care shall be taken to ensure the "Enclosure Temperature" does not exceed 70°C.
3. The risk of electrostatic discharge shall be minimized at installation, following the direction given in the instructions.
4. For Installation with ambient temperature of 70°C, refer to the manufacturer's instructions for guidance on proper selection of conductors.
5. The Ultrasonic Probe is only for use with the Echotel Ultrasonic Switch.

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
05 th August 2020	Original Issue.

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Blueprint Report

Magnetrol International Inc (1000000020)

Class No 3610

Original Project I.D. 3024356

Certificate I.D. FM19ATEX0204X

<u>Drawing No.</u>	<u>Revision Level</u>	<u>Drawing Title</u>	<u>Last Report</u>
030-3590	S	ECHOTEL 961 LOOP P.C. BOARD ASSEMBLY	PR452811
030-3593	L	ECHOTEL 962 LOOP P.C. BOARD ASSEMBLY	PR452811
094-5047	B	ECHOTEL 961 LOOP SCHEMATIC	PR452811
094-5050	F	ECHOTEL 962 LOOP SCHEMATIC	PR452811
099-5065	B	SYSTEM DRAWING MODELS 961/962 SWITCH	PR452811
099-6529	L	ECHOTEL 961	PR452811
099-6530	L	ECHOTEL 962	PR452811
099-6534	A	ECHOTEL TRANSDUCER ASSEMBLY SERIES 9X1	PR452811
51-646.9	July 2020	Echotel Model 961 and 962 Ultrasonic Level Switches IOM	PR452811