



# IECEX Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.: **IECEX FMG 20.0020X** Page 1 of 4 [Certificate history:](#)

Status: **Current** Issue No: 0

Date of Issue: 2020-08-04

Applicant: **Magnetrol International Inc**  
705 Enterprise St  
Aurora, IL 60504  
**United States of America**

Equipment: **Echotel Model 96\* Ultrasonic Level Switch**

Optional accessory:

Type of Protection: **Ex ia, db**

Marking: **96a-50bc-dCe / 9fg-hij-k, 96a-2Dbc-dCe / 9fg-hij-k and 96a-7Dbc-dCe / 9fg-hij-k Integral Echotel Ultrasonic Switches with Echotel Ultrasonic Probe**  
Ex db IIC T6 Ga/Gb

**96a-50bc-dAe / 9gh-ijk-l Integral Echotel Ultrasonic Switches with Echotel Ultrasonic Probe**  
Ex ia IIC T4 Ga - 099-5065; Entity

Approved for issue on behalf of the IECEx Certification Body:

**J. E. Marquedant**

Position:

**VP, Manager - Electrical Systems**

Signature:  
(for printed version)

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting [www.iecex.com](http://www.iecex.com) or use of this QR Code.



Certificate issued by:

**FM Approvals LLC**  
1151 Boston-Providence Turnpike  
Norwood, MA 02062  
United States of America





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Page 2 of 4

Date of issue: 2020-08-04

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Manufacturer: **Magnetrol International**  
705 Enterprise St  
Aurora, IL  
**United States of America**

Additional manufacturing locations: **Magnetrol International N.V**  
Heikensstraat 6  
9240 Zele  
**Belgium**

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

## STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

**IEC 60079-0:2017** Explosive atmospheres - Part 0: Equipment - General requirements  
Edition:7.0

**IEC 60079-1:2014-06** Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"  
Edition:7.0

**IEC 60079-11:2011** Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"  
Edition:6.0

**IEC 60079-26:2014-10** Explosive atmospheres – Part 26: Equipment with Equipment Protection Level (EPL) Ga  
Edition:3.0

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

## TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

[US/FMG/ExTR20.0013/00](#)

Quality Assessment Reports:

[CA/CSA/QAR06.0004/12](#)

[NL/DEK/QAR11.0031/06](#)



# IECEx Certificate of Conformity

Certificate No.: **IECEx FMG 20.0020X**

Page 3 of 4

Date of issue: 2020-08-04

Issue No: 0

**EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

**Models 961-50, 962-50, 961-2, 962-2, 961-7, 962-7 Echotel Ultrasonic Switches**

**SPECIFIC CONDITIONS OF USE: YES as shown below:**

Refer to Annex under Specific Condition of Use.



# IECEX Certificate of Conformity

Certificate No.: **IECEX FMG 20.0020X**

Page 4 of 4

Date of issue: 2020-08-04

Issue No: 0

**Equipment (continued):**

Refer to Annex under Equipment Section.

**Annex:**

[Annex-to-IECEX FMG20.0020X.00\\_1.pdf](#)

**Equipment:**

**Models 961-50, 962-50, 961-2, 962-2, 961-7, 962-7 Echotel Ultrasonic Switches**

**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 consists 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) ¾ 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.

**Ratings** – The product ratings are as follows:

Intrinsic Safety Entity/Energy Limitation Parameters:  $V_{Max}/U_i = 28.4 \text{ V}$ ,  $I_{Max}/I_i = 94 \text{ mA}$ ,  $P_{Max}/P_i = 0.67 \text{ W}$ ,  $C_i = 10.4 \text{ nF}$ ,  $L_i = 3 \text{ } \mu\text{H}$ .

**Model 961:** Input 12-28.4Vdc, 1 Watts, 4-20mA, or 100-265Vac 50/60Hz. 3 Watts, Output 4 to 20mA or two 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 Echotel Ultrasonic Switches / 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 Echotel Ultrasonic Switches / Echotel Ultrasonic Probe***

Energy Limitation:

$V_i = 28.4 \text{ V}$ ,  $I_i = 94 \text{ mA}$ ,  $P_i = 0.67 \text{ W}$ ,  $C_i = 10.4 \text{ nF}$ ,  $L_i = 3 \text{ } \mu\text{H}$ .

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, 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".

### **Specific Conditions of Use:**

#### **96a-50bc-dCe / 9fg-hij-k, 96a-2Dbc-dCe / 9fg-hij-k and 96a-7Dbc-dCe / 9fg-hij-k 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 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.