

# CERTIFICATE OF CONFORMITY



1. **HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS**

2. **Certificate No:** FM19US0182X  
3. **Equipment:** Eclipse Model 700  
**(Type Reference and Name)** Guided Wave Radar

4. **Name of Listing Company:** Magnetrol International Inc

5. **Address of Listing Company:** 705 Enterprise St  
Aurora IL 60504  
United States

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

PR452949 dated 27<sup>th</sup> February 2020

7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:

FM Class 3600:2018, FM Class 3610:2018, FM Class 3611:2018, FM Class 3810:2018,  
ANSI/ISA 12.12.01:2015, ANSI/UL 60079-0:2013, ANSI/UL 60079-11:2014, ANSI/ISA 60079-15:2013,  
ANSI/UL 50E:2015, ANSI/IEC 60529:2011, ANSI/ISA 61010-1:2012

8. 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.

9. This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.

10. Equipment Ratings:

Intrinsically Safe for Class I, II and III, Division 1, Groups A, B, C, D, E, F and G; Intrinsically Safe for Class I, Zone 0, Group IIC; Nonincendive for Class I, II and III, Division 2, Groups A, B, C, D, E, F and G hazardous (classified) locations, indoors and outdoors (Type 4X, IP67) with an ambient temperature rating of -40°C to +70°C or -15°C to +70°C.

**Certificate issued by:**

  
\_\_\_\_\_  
J. E. Marquedant  
VP, Manager - Electrical Systems

27 February 2020  
\_\_\_\_\_  
Date

To verify the availability of the Approved product, please refer to [www.approvalguide.com](http://www.approvalguide.com)

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

FM Approvals LLC. 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA  
T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: [information@fmapprovals.com](mailto:information@fmapprovals.com) [www.fmapprovals.com](http://www.fmapprovals.com)

# SCHEDULE



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11. The marking of the equipment shall include:

Class I, II, III, Division 1, Groups A, B, C, D, E, F, G T4...T1

Class I, Zone 0, AEx ia IIC T4...T1 Ga

Ta = -40°C to +70°C

Type 4X, IP66/67

Class I, II, III, Division 2, Groups A, B, C, D, E, F, G T4...T1

Class I, Zone 2, AEx nA IIC T4...T1 Gc

Ta = -15°C to +70°C

Type 4X, IP66/67

12. **Description of Equipment:**

**General** - The Eclipse Model 700 Guided Wave Radar (MODEL 700 GWR) is a continuous level transmitter, for liquid level control, utilizing guided wave radar (GWR) technology. All signal outputs are provides an analog 4-20mA signal with HART digital communication.

**Construction** - The Eclipse Model 700 Guided Wave Radar (MODEL 700 GWR) is housed in a single compartment (die-cast aluminum) enclosure. Power wiring and electronics are all in the same compartment.

**Ratings** - The Eclipse Model 700 Guided Wave Radar (MODEL 700 GWR) operates at 28.6Vdc with a maximum output of 22.5mA. For Nonincendive circuits the maximum supply voltage is 30Vdc. The transmitters are rated for use in an ambient temperature range of -40°C to +70°C or -15°C to +70°C.

**700-51ab-c5d / 7ef-ghjk-lmn-pq-r,  
Eclipse Guided Wave Radar (GWR) Level Transmitter / Eclipse Level Probe**

$U_i < 28.6Vdc$ ,  $I_i < 140mA$ ,  $P_i < 1W$ ,  $L_i = 2.7\mu H$ ,  $C_i \leq 4.4nF$

a = Safety Level; 1 or 2

b = Accessories / Mounting; 0 or A

c = Classification = 1, A or C

d = Conduit; 0 or 1

e = Measurement; B or D

f = Probe configuration / Style; 1, F, P or T

g = Process Connection Size; 1, 2, 3, 4, 5, 6, B, C, D, E or F

h = Process Connection Type; 1, 2, 3, 4, 5, 6, 7, 8, A, B, C, D, E, F, G, H, J, K, L, M or N

j = Construction Codes; 0, K, L, M or N

k = Flange Option; 0, 1, 2 or 3

l = Material of Construction; A, B, C, F, P, R, S or T

m = Spacer Material; 0, 1 or 5

n = O-Ring / Seal Material; 0, 1, 2, 3, 4, 5, 6, 7, 8, A or N

p = Probe size/Type/Flushing; 0, 1, 2 or 3

q = Special option; 0 or 1

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# SCHEDULE



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r = Probe Length (3 digits max) in:

- Inches (Measurement System c = B, Configuration / Style d = F, P or T).
- Feet (Measurement System c = B, Configuration / Style d = 1).
- Centimeters (Measurement System c = D, Configuration / Style d = F, P or T).
- Meters (Measurement System c = D, Configuration / Style d = 1).

**13. Specific Conditions of Use:**

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. The risk of electrostatic discharge shall be minimized at installation, following the direction given in the instruction.
3. To maintain the T4 temperature code care shall be taken to ensure the enclosure temperature does not exceed 70°C.

**14. Test and Assessment Procedure and Conditions:**

This Certificate has been issued in accordance with FM Approvals US Certification Requirements.

**15. Schedule Drawings**

A copy of the technical documentation has been kept by FM Approvals.

**16. Certificate History**

Details of the supplements to this certificate are described below:

Date	Description
27 <sup>th</sup> February 2020	Original Issue.

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