



# IECEX Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

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

Certificate No.: IECEx FMG 17.0012X

Issue No: 2

Certificate history:

Status: **Current**

Issue No. 2 (2018-10-23)

Issue No. 1 (2018-05-29)

Date of Issue: **2018-10-23**

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Issue No. 0 (2017-07-09)

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

Equipment: **Pulsar R86 Radar Level Transmitter**

*Optional accessory:*

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

Marking:

PULSAR R86-5abc-def – RBx-xxxx-x0g-xx-000 26 GHz Radar Level Transmitter

Ex ia IIC T4...T1 Ga Ta = -40°C to +70°C FISCO IP67

Ex ia/db IIB + H<sub>2</sub> T4...T1 Ga/Gb Ta = -40°C to +70°C FISCO IP67

Ex ia tb IIIC T100°C Db Ta = -15°C to +70°C IP67

PULSAR R86-5abc-def – RBx-xxxx-x08-xx-000 26 GHz Radar Level Transmitter

Ex ia IIC T4...T2 Ga Ta = -40°C to +70°C FISCO IP67

Ex ia/db IIB + H<sub>2</sub> T4...T2 Ga/Gb Ta = -7°C to +70°C FISCO IP67

Ex ia tb IIIC T100°C Db Ta = -15°C to +70°C IP67

PULSAR R86-5abc-def – RBx-xxxx-x02-xx-000 26 GHz Radar Level Transmitter

Ex ia IIC T4...T3 Ga Ta = -40°C to +70°C FISCO IP67

Ex db ia IIB + H<sub>2</sub> T4...T3 Gb Ta = -40°C to +70°C FISCO IP67

Ex ia tb IIIC T100°C Db Ta = -15°C to +70°C IP67

PULSAR R86-5abc-def – RBx-xxxx-x0A-xx-000 26 GHz Radar Level Transmitter

Ex ia IIC T4...T3 Ga Ta = -40°C to +70°C FISCO IP67

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Ex ia tb IIIC T100°C Db Ta = -15°C to +70°C IP67

Approved for issue on behalf of the IECEx  
Certification Body:

J.E.Marquedant



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*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 the [Official IECEx Website](#).

Certificate issued by:

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





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

Additional Manufacturing location(s):

**Magnetrol International NV**  
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 apparatus 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:

|  |  |
|--|--|
| <b>IEC 60079-0 : 2011</b><br>Edition:6.0     | Explosive atmospheres - Part 0: General requirements                                 |
| <b>IEC 60079-1 : 2014-06</b><br>Edition:7.0  | Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"    |
| <b>IEC 60079-11 : 2011</b><br>Edition:6.0    | Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"        |
| <b>IEC 60079-15 : 2010</b><br>Edition:4      | Explosive atmospheres - Part 15: Equipment protection by type of protection "n"      |
| <b>IEC 60079-26 : 2014-10</b><br>Edition:3.0 | Explosive atmospheres – Part 26: Equipment with Equipment Protection Level (EPL) Ga  |
| <b>IEC 60079-31 : 2013</b><br>Edition:2      | Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t" |

*This Certificate **does not** indicate compliance with electrical 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/ExTR17.0011/00](#)

[US/FMG/ExTR17.0011/01](#)

[US/FMG/ExTR17.0011/02](#)

Quality Assessment Report:

[CA/CSA/QAR06.0004/11](#)

[NL/DEK/QAR11.0031/04](#)



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## Schedule

### EQUIPMENT:

*Equipment and systems covered by this certificate are as follows:*

#### **PULSAR R86-5abc-def – RBx-xxxx-x0g-xx-000 26 GHz Radar Level Transmitter**

a = Signal Output = 1 (HART), 2 (Fieldbus), or 3 (Profibus)

b = Safety Options: 0, 1, A, or B.

c = Accessories/Mounting 0, or A.

d = Classification: 1, 3, A, B or D.

e = Housing 1 or 2

f = Conduit Connection 0, 1, 2 or 3

x = Non-FM Controlled Options

0 = None

g = Seal Options 0 or N

#### **PULSAR R86-5abc-def – RBx-xxxx-x08-xx-000 26 GHz Radar Level Transmitter**

a = Signal Output = 1 (HART), 2 (Fieldbus), or 3 (Profibus)

b = Safety Options: 0, 1, A, or B.

c = Accessories/Mounting 0, or A.

d = Classification: 1, 3, A, B or D.

e = Housing 1 or 2

f = Conduit Connection 0, 1, 2 or 3

x = Non-FM Controlled Options

0 = None

#### **PULSAR R86-5abc-def – RBx-xxxx-x02-xx-000 26 GHz Radar Level Transmitter**

a = Signal Output = 1 (HART), 2 (Fieldbus), or 3 (Profibus)

b = Safety Options: 0, 1, A, or B.

c = Accessories/Mounting 0, or A.

d = Classification: 1, 3, A, B or D.



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e = Housing 1 or 2

f = Conduit Connection 0, 1, 2 or 3

x = Non-FM Controlled Options

0 = None

## **PULSAR R86-5abc-def – RBx-xxxx-x0A-xx-000 26 GHz Radar Level Transmitter**

a = Signal Output = 1 (HART), 2 (Fieldbus), or 3 (Profibus)

b = Safety Options: 0, 1, A, or B.

c = Accessories/Mounting 0, or A.

d = Classification: 1, 3, A, B or D.

e = Housing 1 or 2

f = Conduit Connection 0, 1, 2 or 3

x = Non-FM Controlled Options

0 = None

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

## **PULSAR R86-5abc-def – RBx-xxxx-x0g-xx-000 26 GHz Radar Level Transmitter**

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. Provisions shall be made to provide transient overvoltage protection to a level not to exceed 119Vdc.
3. To maintain the T4 temperature code care shall be taken to ensure the enclosure temperature does not exceed 70°C.
4. For Installation with ambient temperature of 60°C, refer to the manufacturer's instructions for guidance on proper selection of conductors.
5. The risk of electrostatic discharge shall be minimized at installation, following the direction given in the instruction manual.
6. The Pulsar R86 includes flamepath joints, consult Magnetrol if repair of the flamepath joints is necessary.
7. Temperature class for the process temperature ranges is defined by the following table when "g" (seal option) is "N":

| Process temperature range | Temperature Code |
|---------------------------|------------------|
| From 0°C to 130°C         | T4               |
| From 130°C to 195°C       | T3               |
| From 195°C to 295°C       | T2               |
| From 295°C to 400°C       | T1               |



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8. Temperature class for the process temperature ranges is defined by the following table when "g" (seal option) is "0":

| Process temperature range | Temperature Code |
|---------------------------|------------------|
| From 0°C to 130°C         | T4               |
| From 130°C to 180°C       | T3               |

9. Process temperature range for the seal options is defined by the following table:

| Seal Option g | Process Temperature Range |
|---------------|---------------------------|
| 0             | -40°C to +180°C           |
| N             | -40°C to +400°C           |

## PULSAR R86-5abc-def – RBx-xxxx-x08-xx-000 26 GHz Radar Level Transmitter

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. Provisions shall be made to provide transient overvoltage protection to a level not to exceed 119Vdc.
3. To maintain the T4 temperature code care shall be taken to ensure the enclosure temperature does not exceed 70°C.
4. For installation with ambient temperature of 60°C, refer to the manufacturer's instructions for guidance on proper selection of conductors.
5. The risk of electrostatic discharge shall be minimized at installation, following the direction given in the instruction manual.
6. The Pulsar R86 includes flamepath joints, consult Magnetrol if repair of the flamepath joints is necessary.
7. Temperature class for the process temperature ranges is defined by the following table:

| Process temperature range | Temperature Code |
|---------------------------|------------------|
| From 0°C to 130°C         | T4               |
| From 130°C to 195°C       | T3               |
| From 195°C to 200°C       | T2               |

8. The seal is limited for use where process temperature range is from -7 to + 200 °C

## PULSAR R86-5abc-def – RBx-xxxx-x02-xx-000 26 GHz Radar Level Transmitter

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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. Provisions shall be made to provide transient overvoltage protection to a level not to exceed 119Vdc.



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3. To maintain the T4 temperature code care shall be taken to ensure the enclosure temperature does not exceed 70°C.
4. For Installation with ambient temperature of 60°C, refer to the manufacturer's instructions for guidance on proper selection of conductors.
5. The risk of electrostatic discharge shall be minimized at installation, following the direction given in the instruction manual.
6. The Pulsar R86 includes flamepath joints, consult Magnetrol if repair of the flamepath joints is necessary.
7. Temperature class for the process temperature ranges is defined by the following table:

| Process temperature range | Temperature Code |
|---------------------------|------------------|
| From 0°C to 130°C         | T4               |
| From 130°C to 195°C       | T3               |
| From 195°C to 200°C       | T2               |

8. The seals are limited for use where process temperature range is -7 to + 200 °C.

## PULSAR R86-5abc-def – RBx-xxxx-x0A-xx-000 26 GHz Radar Level Transmitter

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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. Provisions shall be made to provide transient overvoltage protection to a level not to exceed 119Vdc.
3. To maintain the T4 temperature code care shall be taken to ensure the enclosure temperature does not exceed 70°C.
4. For Installation with ambient temperature of 60°C, refer to the manufacturer's instructions for guidance on proper selection of conductors.
5. The risk of electrostatic discharge shall be minimized at installation, following the direction given in the instruction manual.
6. The Pulsar R86 includes flamepath joints, consult Magnetrol if repair of the flamepath joints is necessary.
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| From 0°C to 130°C         | T4               |
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8. The seals are limited for use where process temperature range is -7 to + 200 °C.



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**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):**

Additional process seal options were evaluated and qualified as part of this program.