



EXPLOSION PROTECTION

CERTIFICATE OF CONFORMITY

Cert NO.GYJ16.1194X

This is to certify that the product

**OPTIWAVE 7300C /OPTIWAVE 7300C-L Radar Level
Transmitter**

manufactured by **KROHNE S.A.S**

(Address:2 allée des Ors, Romans, France)

which model is **VF700 Series VF704 Series SF709 Series**

Ex marking **Ex iaIIC T3~T6 Ga Ex iaD 20 T95 IP6X**

product standard /

drawing number **APPR F0820950520 APPR F0870315101**

has been inspected and certified by NEPSI, and that it conforms
to **GB 3836.1-2010,GB 3836.4-2010,GB 3836.20-2010,GB 12476.1-2013,
GB 12476.4-2010**

This Approval shall remain in force until **2021.04.23**

Remarks

- 1.Conditions for safe use are specified in the attachment(s) to this certificate.
- 2.Symbol "X" placed after the certification number denotes specific conditions of use, which are specified in the attachment to this certificate.
- 3.Model designation is specified in the attachment(s) to this certificate.
- 4.Intrinsic safety parameters specified in the attachment(s) to this certificate.

Director



**National Supervision and Inspection Centre for
Explosion Protection and Safety of Instrumentation**

Issued Date **2016.04.24**

This Certificate is valid for products compatible with the documents and samples approved by NEPSI.

国家级仪器仪表防爆安全监督检验站

National Supervision and Inspection Centre for
Explosion Protection and Safety of Instrumentation

(GYJ16.1194X)

(Attachment I)

Attachment I to GYJ16.1194X

VF700 Series, VF704 Series and SF709 Series OPTIWAVE 7300C /OPTIWAVE 7300C-L Radar Level Transmitter, manufactured by KROHNE S.A.S, have been certified by National Supervision and Inspection Center for Explosion Protection and Safety of Instrumentation (NEPSI).

Radar Level Transmitter accords with following standards:

GB 3836.1-2010 Explosive atmospheres Part 1: Equipment-General requirements

GB 3836.4-2010 Explosive atmospheres Part 4: Equipment protection by intrinsic safety"i"

GB 3836.20-2010 Explosive atmospheres Part 20: Equipment with equipment protection level (EPL) Ga

GB 12476.1-2013 Electrical apparatus for use in the presence of combustible dust – Part 1: General requirements

GB 12476.4-2010 Electrical apparatus for use in the presence of combustible dust – Part 4: Protection by intrinsic safety "iD"

Radar Level Transmitter has the Ex-marking Ex ia II C T3~T6 Ga Ex iaD 20 T95 IP6X.

Following Radar Level Transmitter are approved.

VF700 *abcdefghijklmnopqrs*

VF704 *abcdefghijklmnopqrs*

SF709 *abcdefghijklmnopqrs*

a : E

b : 0, 1, 2, 3

c : 3, 4, 5, 6, 7, 8, F, G, H, L, N, P, R, S, T, U, V, W, X, Y,

d : 0, 1, 2, 3, 4, 5, 6, 7, 8, A, B, P, R, S, T

e : 0, 1, 2, 3, 4, 5, B, C, F, G, H, K

f : 0, 3, 5, 6, 7, 8, A, B, C, D, E, F, L, M, N, P, R, S, U, V

g : 0, 3, 5, 6, 7, 8, A, B, C, D, E, G, L, N, P, R, S, U, V, W, X

h : 0, 3, 5, 6, 7, 8, A, B, C, F, L, P, V, W, X, Y

i : 0, 2

j : 0, 1, 2, 3, 4, A, B, D, E

k : 0, 2

l : Not Ex relevant

m : 0, A, B

nopqrs : Not Ex relevant

i

1. Special condition for safe use

Symbol "X" denotes special condition for safe use: when radar level transmitter made of aluminum alloy is installed in Zone 0, take protective measure to avoid the ignition source due to impact or friction. Take protective measure to avoid electrostatic charge on the enclosure.

2. Condition for safe use

2.1 Radar Level Transmitters shall be connected to the equipotential bonding system reliably.

2.2 The relation among EPL, temperature of flange and ambient temperature range of Radar level transmitter is listed in following table.

| EPL | Ambient temp. | Flange temp. |
|-------------|---------------|----------------|
| Ga | (-20~+60) °C | (-20~+60) °C |
| Ga/Gb | (-40~+80) °C | (-20~+60) °C |
| Gb | (-40~+80) °C | (-40*~+200) °C |
| 20、20/21、21 | (-40~+80) °C | (-40*~+200) °C |

Note: "*" A flange temperature is no less than -50°C is allowed if EPDM gaskets are used.

2.3 The temperature class and maximum surface temperature depends on the ambient temperature and flange temperature, which are listed in following table.

| EPL | Temp. Class | Ambient temp. | | | Flange Temp. |
|-------|-----------------|-------------------|------------------------|--|--------------|
| | | Hygienic antennas | Drop and Horn antennas | Drop and Horn antennas with distance piece | |
| Ga | T6 | 57°C | 57°C | 57°C | 60°C |
| | | 57°C | 57°C | 57°C | 60°C |
| | | 57°C | 57°C | 57°C | 60°C |
| Ga/Gb | T5 | 72°C | 72°C | 50°C | 60°C |
| | T4 | 80°C | 80°C | 80°C | 60°C |
| | | 80°C | 80°C | 80°C | 60°C |
| Gb | T6 | 57°C | 57°C | 57°C | 60°C |
| | | 50°C | 47°C | 51°C | 85°C |
| | T5 | 72°C | 72°C | 72°C | 75°C |
| | | 65°C | 62°C | 66°C | 100°C |
| | T4 | 80°C | 80°C | 80°C | 85°C |
| | | 76°C | 74°C | 79°C | 100°C |
| | | 73°C | 70°C | 74°C | 110°C |
| | | 66°C | 60°C | 68°C | 135°C |
| | T3 | 62°C | 54°C | 64°C | 150°C |
| | | - | - | 57°C | 180°C |
| | | - | - | 52°C | 200°C |
| | 20、 20/21、21 | T67°C | 60°C | | |
| T82°C | | 75°C | | | 75°C |
| T92°C | | 80°C | | | 85°C |
| T90°C | | 67°C | 59°C | 62°C | 150°C |
| | | - | - | 57°C | 200°C |

Note: "-" denotes not applicable.

2.4 Safe parameters

| Terminals | Safe parameters | | | | |
|---------------------|-----------------|-------------|------------|---------------|------------|
| 4-20mA output 1+, - | $U_i=30V$ | $I_i=300mA$ | $P_i=1.0W$ | $L_i=29\mu H$ | $C_i=16nF$ |
| 4-20mA output 2+, - | $U_i=30V$ | $I_i=300mA$ | $P_i=1.0W$ | $L_i=29\mu H$ | $C_i=16nF$ |

2.5 Radar Level Transmitters shall be connected to a certified safety barrier to form intrinsically safety system. Obey the instruction manual of the safety barrier.

2.6 Shielded cable with insulation sheath shall be used between Radar Level Transmitter and safety barrier.

2.7 When Radar level transmitter is installed in combustible dust atmosphere, cable glands and blanking plugs with IP6X degree of protection according to GB 12476.1-2013 and GB 12476.4-2010 shall be incorporated.

2.8 Safety barrier shall be installed in safe area. Observe the instruction manual of the safety barrier.

2.9 End users is not permitted to change any components inside.

2.10 During installation, use and maintenance of Radar level transmitter, observe following standards.

GB 3836.13-2013 Explosive atmospheres-Part 13:Equipment repair,overhaul and reclamation

GB 3836.15-2000 Electrical apparatus for explosive gas atmospheres - Part 15:Electrical installations in hazardous area (other than mines)

GB 3836.16-2006 Electrical apparatus for explosive gas atmospheres - Part 16: Inspection and maintenance of electrical installation in hazardous areas (other than mines)

GB 3836.18-2010 Explosive atmospheres Part 20: intrinsically safe system

GB 3836.20-2010 Explosive atmospheres Part 20: Equipment with equipment protection level (EPL) Ga

GB 50257:2014 Code for construction and acceptance of electric device for explosion atmospheres and fire hazard electrical equipment installation engineering

GB 12476.2-2010 Electrical apparatus for use in the presence of combustible dust. Part 2:Selection and installation

GB 15577-2007 Safety regulations for dust explosion prevention and protection

3. Manufacturer's Responsibility

3.1 Special condition for safe use specified above should be included in the instruction manual.

3.2 Manufacturing should be done according to the documentation approved by NEPSI.

3.3 Any modification with influence on the type of protection should be submitted to NEPSI before application.

National Supervision and Inspection Center
for Explosion Protection and Safety of Instrumentation

April 24th, 2016

