EXPLOSION PROTECTION
CERTIFICATE OF CONFORMITY

Cert NO.GYJ18.1110X

This is to certify that the product

Guided Radar Level Transmitter

manufactured by Krohne S.A.S
(Address:2, allée des Ors-BP98, 26103 Romans sur Isère, France)

which model is OPTIFLEX 2200 C/F Series

Ex marking See attachment

product standard /

drawing number /

has been inspected and certified by NEPSI, and that it conforms to GB 3836.1-2010,GB 3836.2-2010,GB 3836.4-2010,GB 3836.20-2010, GB 3836.19-2010,GB 12476.1-2013,GB 12476.4-2010,GB 12476.5-2013

This Approval shall remain in force until 2023.02.04

Remarks
1.Conditions for safe use are specified in the attachment 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 to this certificate.
4.Safety parameters specified in the attachment to this certificate.
5. This certificate also covers the Guided Radar Level Transmitter with the same type manufactured by KROHNE Measurement Technology (Shanghai) Co., Ltd. (Address: No. 555, Minshen Road, Songjiang Industrial Zone, Shanghai).

Director

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

Issued Date 2018.02.05

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

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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

(GYJ18.1110X) **(Attachment I)**

Attachment I

(Translation)

Guided Radar Level Transmitter, type OPTIFLEX 2200 C/F series, manufactured by Krohne S.A.S, or KROHNE Measurement Technology (Shanghai) Co., Ltd., have been approved in accordance with the following standards by National Supervision and Inspection Centre for Explosion Protection and Safety of Instrumentation (NEPSI):

GB3836.1–2010 Explosive atmospheres – Part 1: Equipment – General requirements

GB3836.2–2010 Explosive atmospheres – Part 2: Equipment protection by flameproof enclosure "d"

GB3836.4–2010 Explosive atmospheres – Part 4: Equipment protection by intrinsic safety "i"

GB3836.19–2010 Explosive atmospheres – Part 19: Fieldbus intrinsically safe concept (FISCO)

GB3836.20–2010 Explosive atmospheres – Part 20: Equipment with equipment protection level (EPL) Ga

GB12476.1–2013 Electrical apparatus for use in the presence of combustible dust – Part 1: Equipment – General requirements

GB12476.4–2010 Electrical apparatus for use in the presence of combustible dust – Part 4: Protection by intrinsic safety "iD"

GB12476.5–2013 Electrical apparatus for use in the presence of combustible dust – Part 5: Protection by enclosures"tD"

The certificate number is GYJ18.1110X。

The relations between the types, the structure types and Ex marking are as below:

<table>
<tr><th>Device type</th><th colspan="2">Version</th><th>Ex marking（Gas）</th><th>Ex marking（Dust）</th></tr>
<tr><td rowspan="2">OPTIFLEX 2200 C</td><td colspan="2" rowspan="2">Compact version</td><td>Ex d ia IIC T2~T6 Ga/Gb
Ex d ia IIC T2~T6 Gb</td><td>Ex iaD 20 tD A21 IP6X T90°C~T300°C
Ex iaD 21 tD A21 IP6X T90°C~T300°C</td></tr>
<tr><td>Ex ia IIC T2~T6 Ga/Gb
Ex ia IIC T2~T6 Gb</td><td>Ex iaD 20/21 T90~T300
Ex iaD 21 T90~T300</td></tr>
<tr><td rowspan="4">OPTIFLEX 2200 F</td><td rowspan="4">Remote version</td><td>Converter</td><td>Ex d ia [ia Ga] IIC T4~ T6 Gb</td><td>Ex iaD 21 tD A21 [iaD 20] IP6X T90°C</td></tr>
<tr><td>Converter</td><td>Ex ia [ia Ga] IIC T4~T6 Gb</td><td>Ex iaD [iaD 20] 21 T90</td></tr>
<tr><td>Sensor</td><td>Ex ia IIC T2~T6 Ga/Gb
Ex ia IIC T2~T6 Gb</td><td>Ex iaD 20/21 T90~T300
Ex iaD 21 T90~T300</td></tr>
<tr><td colspan="3">The sensor of the remote version is connected to the converter with a dedicated signal cable. The signal cable has a maximum length of 100 metres.</td></tr>
</table>

Ambient temperature range: -40~+80（℃）

Temperature class and Maximum surface temperature are shown as below:

OPTIFLEX 2200 C

EPL	Max. ambient temperature			Max. Flange Temp.	T class（Gas）	Max. surface temperature（dust）
	2mm probe (without HT extension)	2mm probe (with HT extension)	All other probes			
Ga/Gb	52℃	54℃	53℃	60℃	T6	T90℃
	70℃	70℃	70℃	60℃	T5	T90℃
	80℃	80℃	80℃	60℃	T4	T90℃
Gb	52℃	54℃	53℃	60℃	T6	T90℃
	42℃	51℃	45℃	85℃		
	67℃	69℃	68℃	75℃	T5	T100℃
	57℃	66℃	60℃	100℃		
	77℃	79℃	78℃	85℃	T4	T135℃
	67℃	76℃	70℃	110℃		
	57℃	73℃	62℃	135℃		
	51℃	71℃	57℃	150℃	T3	T200℃
	Not permitted	68℃	Not permitted	180℃		
	Not permitted	65℃	Not permitted	200℃		
	Not permitted	60℃	Not permitted	250℃	T2	T300℃
	Not permitted	54℃	Not permitted	300℃		

EPL	Min. ambient temperature			Min. Flange Temp.	T class（Gas）	Max. surface temperature（dust）
	2mm probe (without HT extension)	2mm probe (with HT extension)	All other probes			
Ga/Gb	-40℃	-40℃	-40℃	-20℃	T2	T90℃
Gb	-40℃	-40℃	-40℃	-40℃	～	～
	-36℃	-39℃	-37℃	-50℃	T6	T300℃

OPTIFLEX 2200 F

EPL	Max. ambient temperature			Max. Flange Temp.	T class (Gas)	Max. surface temperature (dust)
	2mm probe (without HT extension)	2mm probe (with HT extension)	All other probes			
Ga/Gb	49°C	51°C	49°C	60°C	T6	T90°C
	70°C	70°C	70°C	60°C	T5	T90°C
	80°C	80°C	80°C	60°C	T4	T90°C
Gb	49°C	51°C	49°C	60°C	T6	T90°C
	39°C	48°C	43°C	85°C		
	64°C	66°C	64°C	75°C	T5	T100°C
	54°C	65°C	58°C	100°C		
	77°C	79°C	78°C	85°C	T4	T135°C
	64°C	75°C	68°C	110°C		
	51°C	71°C	59°C	135°C		
	43°C	69°C	54°C	150°C	T3	T200°C
	Not permitted	65°C	Not permitted	180°C		
	Not permitted	62°C	Not permitted	200°C		
	Not permitted	54°C	Not permitted	250°C	T2	T300°C
	Not permitted	47°C	Not permitted	300°C		

EPL	Min. ambient temperature			Min. Flange Temp.	T class (Gas)	Max. surface temperature (dust)
	2mm probe (without HT extension)	2mm probe (with HT extension)	All other probes			
Ga/Gb	-40°C	-40°C	-40°C	-20°C	T2 ~ T6	T90°C ~ T300°C
Gb	-40°C	-40°C	-40°C	-40°C		
	-35°C	-39°C	-36°C	-50°C		

Note: For the Converter of OPTIFLEX 2200 F, Max. surface temperature (dust) is T90°C

OPTIFLEX 2200 C/F

VF200 *a b c d e f g h i j k l m n o p q r s t*

VF204 *a b c d e f g h i j k l m n o p q r s t*

SF209 *a b c d e f g h i j k l m n o p q r s t*

a Converter/Version code, 1, 2, 3, 4, 5;

b NEPSI Approved code, L（Ex ia + Ex iaD）, M（Ex d ia + Ex iaD tD）;

c Other approval, one digit, not safety relevant;

d Pressure/Temperature/Sealing code, 1, 2, 3, 6, 7, 8, C, D, E, H, K, L, S, T, U;

e Material/probe code, 1, 2, 3, 4, 5, 6, 7, A, B, D, E, G, K, L, P, T, V, X;

f Material/probe end type code, one digit, not safety relevant;

g Process connection size code, one digit, not safety relevant;

h Process connecion pressure class code, one digit, not safety relevant;

i Process connection sealing face/sanitary code, one digit, not safety relevant;

j Output code, 1, A, B;

k Cable entry/Cable gland code, 1, 2, 3, 4, A, B;

l Housing option / Display code, 1, 2, 3, 4, A, B, C, D, E, F;

m Display language code, one digit, not safety relevant;

n Version code, 0;

o Module option code, 0;

p Option for remote version code, 0, 6, 7, 8, A, B;

q Adaptors code, 0, 3;

r Calibration certificate code, one digit, not safety relevant;

s TAG Number code, one digit, not safety relevant;

t Other constructions code, one digit, not safety relevant.

I. SPECIAL CONDITIONS FOR SAFE USE

1.1 For the details on the dimensions of the flameproof joints contact the manufacturer.

1.2 Do not rub the surface of the product that has a plastic unit and/or a layer of paint. Friction could cause an increase in electrostatic charge and ignition of a potentially explosive atmosphere

1.3 A time delay is mandatory after you de-energize the device, and before you open the flameproof compartment, in an atmosphere that contains a potentially explosive gas. For the time delay, refer to device nameplate or to the table that follows:

Temperature class	T6	T5	T2～T4
Delay time （min）	10	10	No restriction

II. SPECIAL REQUIREMENTS

2.1. Electrical parameters:

NEPSI approved code	Electrical parameters
M	Power supply：$U_{n\,max}$ = 36 V d.c. Output：4~20mA Maximum voltage：Um = 250V

NEPSI approved code	Circuit type	Max.input voltage Ui (V)	Max.input current Ii (mA)	Max.input Power Pi (W)	Max. internal parameters	
					Ci (nF)	Li (μH)
L	4~20mA	30	300	1.0	16	27
	Fieldbus	24	300	1.2	1	2
	Fieldbus （FISCO field device）	17.5	380	5.32	1	2

2.2 Do not open the enclosure in explosive dust atmospheres.

2.3 When the ambient temperature is more than 65℃, use heat-resistant cables and cable glands rated for continuous operation above 80℃.

2.4 Process temperature must be limited to the operating temperature range of the process sealing gasket.

2.5 Keep the enclosure clean to prevent dust accumulation, Do not use compressed air.

2.6 Do not repair the device or replace components. If it is necessary speak or write with the manufacturer.

2.7 During installation, operation and maintenance, users must comply with the relevant requirements of the product instruction manual, GB3836.13-2013 "Explosive atmospheres-Part 13: Equipment repair, overhaul and reclamation", GB3836.15-2000 "Electrical apparatus for explosive gas atmospheres Part 15: Electrical installations in hazardous areas (other than mines)", GB3836.16-2006 "Electrical apparatus for explosive gas atmospheres Part 16: Inspection and maintenance of electrical installation (other than mines)", GB15577–2007 “Safety regulations for dust explosion prevention and protection”, GB12476.2–2010 “Electrical apparatus for use in the presence of combustible dust Part 2: Selection and installation” and GB50257-2014 "Code for construction and acceptance of electric device for explosion atmospheres and fire hazard electrical equipment installation engineering".

III. MANUFACTURER'S RESPONSIBILITY

3.1 The instruction manual shall include all the clauses mentioned above.

3.2 The manufacturer shall exactly conform to the documents approved by NEPSI.

3.3 The nameplate shall add the following:

3.3.1 Identification of NEPSI.

3.3.2 Certificate No.

National Supervision and Inspection Centre
For Explosion Protection and Safety of Instrumentation
Feb. 05, 2018