



EXPLOSION PROTECTION

CERTIFICATE OF CONFORMITY

Cert NO.GYJ12.1129X

This is to certify that the product

Vortex frequency flowmeter

manufactured by Krohne Messtechnik GmbH

(Address:Ludwig-Krohne Strasse 5, Duisburg, Germany)

which model is OPTISWIRL 4070C

Ex marking Ex dia [ia Ga] II C T1~T6 Ga/Gb

product standard /

drawing number APPR GD 821019—02~03

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

This Approval shall remain in force until 2017.05.21

Remarks 1.Conditions for safe use are specified in the attachment to this certificate.

Director



National Supervision and Inspection Centre for
Explosion Protection and Safety of Instrumentation
Issued Date 2012.05.22

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

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

(GYJ12.1129X)

(Attachment I)

Attachment I to GYJ12.1129X

Vortex frequency flowmeter typed OPTISWIRL 4070C, manufactured by Krohne Messtechnik GmbH has been certified National Supervision and Inspection Center for Explosion Protection and Safety of Instrumentation (NEPSI).

Vortex frequency flowmeter accords with following standards:

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

GB 3836.2-2010 Explosive atmospheres Part 2: Equipment protection by flameproof enclosures" d"

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

Vortex frequency flowmeter has the Ex-marking Ex d ia [ia Ga] II C T1~T6 Ga/Gb.

1. Special condition for safe use

Symbol "X" denotes special condition for safe use: The earth connection shall be connected to the equipotential bonding system.

2. Condition for safe use

2.1 The ambient temperature of vortex frequency flowmeter is $(-40 \sim +60) ^\circ\text{C}$.

2.2 The relation among temperature class, ambient temperature and maximum temperature of process medium is listed in following table 1 to table 3.

Table 1 Converter is mounted above the sensor

Max. Temp. of process medium $^\circ\text{C}$	Temp. class									
	T6	T5	T4		T3			T2/T1		
Max. ambient temp.	60	60	50	60	40	50	60	40	50	60
Nominal diameter										
DN15~25	60	75	110	110	175 [☆]	175	125 [☆]	235 [☆]	180 [☆]	125 [☆]
DN 40~50	60	75	110	110	175	175	115	215	165	115
DN65~100	60	75	110	110	175	175	110	200	155	110
DN150~DN300	60	75	110	110	175	175	130 [☆]	240 [☆]	190 [☆]	130 [☆]

☆ The temperature of connection cable is much than 80°C .

Table 2 Converter is mounted on the side of sensor

Max. Temp. of process medium °C	Temp. class									
	T6	T5	T4		T3			T2/T1		
Max. ambient temp	60	60	50	60	40	50	60	40	50	60
Nominal diameter										
DN15~25	60	75	110	110	175 [☆]	175 [☆]	145 [☆]	240 [☆]	205 [☆]	145 [☆]
DN 40~50	60	75	110	110	175	175 [☆]	135 [☆]	240 [☆]	205 [☆]	135 [☆]
DN65~100	60	75	110	110	175	175 [☆]	130 [☆]	240 [☆]	195 [☆]	130 [☆]
DN150~DN300	60	75	110	110	175	175	150 [☆]	240 [☆]	235 [☆]	150 [☆]

☆ The temperature of connection cable is much than 80°C.

Table 3 Sensor is lacquered

Max. Temp. of process medium °C	Temp. class		
	T6	T5	T4~T1
Max. ambient temp	60	60	60
Nominal diameter			
DN15~DN300	60	75	90

2.3 Safe parameters

Terminals	Safe parameters					
A+, A	U _i =30V	I _i =100mA	P _i =1W	L _i =600 μH	C _i =15nF	
B+, B	U _i =30V	I _i =100mA	P _i =1W	L _i =600 μH	C _i =15nF	

2.4 End users is not permitted to change any components insides.

2.5 During installation and maintenance, observe the warning “ After de-energizing, Delay X min before opening”. The relation between X and temperature class is listed as following.

Temp. Class	X
T5, T6	1
T1~T4	0

2.6 The Cable gland and blanking plug, certified to GB 3836.1-2010 and GB 3836.2-2010 with Ex marking Ex d II C Gb shall be used. The engaged threads shall be no less than 5.

2.7 When installation, use and maintenance of vortex frequency flowmeter, observe following standards.
GB3836.13-1997 Electrical apparatus for explosive gas atmospheres Part 13: Repair and overhaul for apparatus used in explosive gas atmospheres

GB3836.15-2000 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 50257:1996 Code for construction and acceptance of electric device for explosion atmospheres and fire hazard electrical equipment installation engineering

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


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.

3.4 Following items should be added to the nameplate

- a) NEPSI log 
- b) Ex marking
- c) Number of certificate
- d) Ambient temperature range
- e) Safe parameters

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

May 22th, 2012