



제2021-072351-01-1호

안전인증서

Emerson Process Management Flow Technologies Co., Ltd.

111, Xing Min South Road, Jiangning District, Nanjing, Jiangsu Province, 211100, China

위 사업장에서 제조하는 아래의 품목이 「산업안전보건법」 제84조 및 같은 법 시행규칙 제110조제1항에 따른 안전인증 심사 결과 안전·보건기준에 적합하므로 안전인증표시의 사용을 인증합니다.

품 목
Vortex Flowmeter

형식·모델(용량·등급) / 인증번호

8800D integral vortex transmitter(Ex db [ia] IIC T6...T1 Ga/Gb) / 16-KA4BO-0234X

인증기준
고용노동부고시 제2021-22호

인증조건

1. 제조공장

·본 인증서는 '111, Xing Min South Road, Jiangning District, Nanjing, Jiangsu Province, 211100, China'에서 생산하는 제품에 한함.

2. 제품개요

- 제품개요: 0종/1종 경계지역에 설치(Ga/Gb)되는 와류식 유량계(integral transmitter)임.
- 제품정격: 32 Vdc max. (Fieldbus, digital output), $U_m = 250 V$
42 Vdc max. (4 - 20 mA HART analog and pulse outputs, MODBUS RS-485), $U_m = 250 V$
- 사용주위온도: $-50 \text{ }^\circ\text{C} \leq T_a \leq +70 \text{ }^\circ\text{C}$
- 공정온도에 따른 온도등급: $-200 \text{ }^\circ\text{C} \leq T_{\text{process}} \leq +T_{\text{max}} \text{ }^\circ\text{C}$

	T6	T5	T4	T3	T2	T1
$T_{\text{max}} \text{ (}^\circ\text{C)}$	75	95	130	195	290	427

3. 인증범위: 본 인증서는 위의 형식번호에 한하여 유효함.

4. 안전한 사용을 위한 조건

·관련 IECEx 인증서(IECEx KEM 05.0017X issue No.11) 3 페이지 SPECIFIC CONDITIONS OF USE 참조

5. 인증(변경)사항

·1차 변경(2022.01.28.): 기존 제2016-003211-01호에서 모델명, 온도등급 변경, 통신방식 추가 및 IECEx 인증서 갱신에 따라 변경 발행함.

6. 그 밖의 사항

- 안전인증품의 품질관리, 확인심사 수검, 변경사항 신고 등 인증 받은 자의 의무 준수
- 본 안전인증서는 반드시 관련 IECEx 인증서(IECEx KEM 05.0017X issue No.11)와 함께 사용

2016년 3월 25일

한국산업기술시험원장





No. 2021-072351-01-1

안전인증서

Certificate of Safety

Emerson Process Management Flow Technologies Co., Ltd.

111, Xing Min South Road, Jiangning District, Nanjing, Jiangsu Province, 211100, China

The following product manufactured by the above company has been authorized for the use of safety certification mark as the product has satisfied the safety and health requirements under Article 84 of OCCUPATIONAL SAFETY AND HEALTH ACT and paragraph 1 of Article 110 of ENFORCEMENT ORDINANCE OF the same ACT.

Electrical Equipment

Vortex Flowmeter

Model (Marking) / Certificate No.

8800D integral vortex transmitter(Ex db [ia] IIC T6...T1 Ga/Gb) / 16-KA4BO-0234X

Applied standards

Announcement No. 2021-22 of Ministry of Employment and Labor

Conditions of Certification

1. Manufacturing location(s): This certificate is valid only for the specified products produced at '8111, Xing Min South Road, Jiangning District, Nanjing, Jiangsu Province, 211100, China'.

2. Description of equipment

·The Model 8800D Vortex Flowmeter consists of the flameproof enclosures Ex d and an integral sensor assembly in type of protection intrinsic safety Ex ia.

·Rating: 32 Vdc max. (Fieldbus, digital output), $U_m = 250$ V

42 Vdc max. (4 - 20 mA HART analog and pulse outputs, MODBUS RS-485), $U_m = 250$ V

·Ambient temperature: -50 °C $\leq T_a \leq +70$ °C

·Process temperature: -200 °C $\leq T_{process} \leq +T_{max}$ °C

Temperature	T6	T5	T4	T3	T2	T1
T_{max} (°C)	75	95	130	195	290	427

3. Scope of certification: This certificate is valid only for the models as above.

4. Special conditions for safe use

·See Specific Conditions of Use in the related IECEx certificate (IECEx KEM 05.0017X issue No.11) for the details.

5. Details of certificate changes

·1st Revision (2022.01.28.): This certificate is reissued to include the change of model name, temperature grade and addition of RS-485 option and the IECEx certification update from No. 2016-003211-01.

6. Details of the others

·Manufacturer shall take the responsibility including maintaining quality requirements for the certified products, receiving factory surveillance and informing any changes to the certified products.

·This certificate shall be used with the related IECEx certificate (IECEx KEM 05.0017X issue No.11).

Date of Issue: 2016-03-25

한국산업기술시험원장
KOREA TESTING LABORATORY





제2021-072352-01-1호

안전인증서

Emerson Process Management Flow Technologies Co., Ltd.

111, Xing Min South Road, Jiangning District, Nanjing, Jiangsu Province, 211100, China

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품 목

Vortex Flowmeter

형식·모델(용량·등급) / 인증번호

8800D remote vortex transmitter(Ex db [ia Ga] IIC T6 Gb) / 16-KA4BO-0307X

인 증 기 준

고용노동부고시 제2021-22호

인 증 조 건

1. 제조공장

·본 인증서는 '111, Xing Min South Road, Jiangning District, Nanjing, Jiangsu Province, 211100, China'에서 생산하는 제품에 한함.

2. 제품개요

- 제품개요: 1종 지역에 설치(Gb)되는 와류식 유량계(remote transmitter)임.
- 제품정격: 32 Vdc max. (Fieldbus, digital output), $U_m = 250 V$
42 Vdc max. (4 - 20 mA HART analog and pulse outputs, MODBUS RS-485), $U_m = 250 V$
- 사용주위온도: $-50 \text{ }^\circ\text{C} \leq T_a \leq +70 \text{ }^\circ\text{C}$
- 공정온도: $-200 \text{ }^\circ\text{C} \leq T_{process} \leq +427 \text{ }^\circ\text{C}$

3. 인증범위: 본 인증서는 위의 형식번호에 한하여 유효함.

4. 안전한 사용을 위한 조건

·관련 IECEx 인증서(IECEx KEM 05.0017X issue No.11) 3 페이지 SPECIFIC CONDITIONS OF USE 참조

5. 인증(변경)사항

·1차 변경(2022.01.28.): 기존 제2016-020205-01호에서 모델명, 통신방식 추가 및 IECEx 인증서 갱신에 따라 변경 발행함.

6. 그 밖의 사항

- 안전인증품의 품질관리, 확인심사 수검, 변경사항 신고 등 인증 받은 자의 의무 준수
- 본 안전인증서는 반드시 관련 IECEx 인증서(IECEx KEM 05.0017X issue No.11)와 함께 사용

2016 년 5 월 20 일

한국산업기술시험원장





No. 2021-072352-01-1

안전인증서

Certificate of Safety

Emerson Process Management Flow Technologies Co., Ltd.

111, Xing Min South Road, Jiangning District, Nanjing, Jiangsu Province, 211100, China

The following product manufactured by the above company has been authorized for the use of safety certification mark as the product has satisfied the safety and health requirements under Article 84 of OCCUPATIONAL SAFETY AND HEALTH ACT and paragraph 1 of Article 110 of ENFORCEMENT ORDINANCE OF the same ACT.

Electrical Equipment

Vortex Flowmeter

Model (Marking) / Certificate No.

8800D remote vortex transmitter(Ex db [ia Ga] IIC T6 Gb) / 16-KA4BO-0307X

Applied standards

Announcement No. 2021-22 of Ministry of Employment and Labor

Conditions of Certification

1. Manufacturing location(s): This certificate is valid only for the specified products produced at '8111, Xing Min South Road, Jiangning District, Nanjing, Jiangsu Province, 211100, China'.

2. Description of equipment

- The Model 8800D Vortex Flowmeter consists of the flameproof enclosures Ex d and an remote mounted sensor assembly in type of protection intrinsic safety Ex ia.
- Rating: 32 Vdc max. (Fieldbus, digital output), $U_m = 250$ V
42 Vdc max. (4 - 20 mA HART analog and pulse outputs, MODBUS RS-485), $U_m = 250$ V
- Ambient temperature: -50 °C $\leq T_a \leq +70$ °C
- Process temperature: -200 °C $\leq T_{process} \leq +427$ °C

3. Scope of certification: This certificate is valid only for the models as above.

4. Special conditions for safe use

·See Specific Conditions of Use in the related IECEx certificate (IECEx KEM 05.0017X issue No.11) for the details.

5. Details of certificate changes

·1st Revision (2022.01.28.): This certificate is reissued to include the change of model name and addition of RS-485 option and the IECEx certification update from No. 2016-020205-01.

6. Details of the others

- Manufacturer shall take the responsibility including maintaining quality requirements for the certified products, receiving factory surveillance and informing any changes to the certified products.
- This certificate shall be used with the related IECEx certificate (IECEx KEM 05.0017X issue No.11).

Date of Issue: 2016-05-20

한국산업기술시험원
KOREA TESTING LABORATORY





제2021-072354-01-1호

안전인증서

F-R Tecnologias De Flujo, S.A. De C.V.

Ave. Miguel de Cervantes 111 31136 Chihuahua Mexico

위 사업장에서 제조하는 아래의 품목이 「산업안전보건법」 제84조 및 같은 법 시행규칙 제110조제1항에 따른 안전인증 심사 결과 안전·보건기준에 적합하므로 안전인증표시의 사용을 인증합니다.

품 목

Vortex Flowmeter

형식·모델(용량·등급) / 인증번호

8800D remote vortex transmitter(Ex db [ia Ga] IIC T6 Gb) / 18-KA4BO-0064X

인증기준

고용노동부고시 제2021-22호

인증조건

1. 제조공장

·본 인증서는 'Ave. Miguel de Cervantes 111 31136 Chihuahua Mexico'에서 생산하는 제품에 한함.

2. 제품개요

·제품개요: 1종 지역에 설치(Gb)되는 와류식 유량계(remote transmitter)임.

·제품정격: 32 Vdc max. (Fieldbus, digital output), $U_m = 250 V$

42 Vdc max. (4 - 20 mA HART analog and pulse outputs, MODBUS RS-485), $U_m = 250 V$

·사용주위온도: $-50 \text{ }^\circ\text{C} \leq T_a \leq +70 \text{ }^\circ\text{C}$

·공정온도: $-200 \text{ }^\circ\text{C} \leq T_{\text{process}} \leq +427 \text{ }^\circ\text{C}$

3. 인증범위: 본 인증서는 위의 형식번호에 한하여 유효함.

4. 안전한 사용을 위한 조건

·관련 IECEx 인증서(IECEx KEM 05.0017X issue No.11) 3 페이지 SPECIFIC CONDITIONS OF USE 참조

5. 인증(변경)사항

·1차 변경(2022.01.28.): 기존 제2018-001268-01호에서 모델명, 품목명, 통신방식 추가 및 IECEx 인증서 갱신에 따라 변경 발행함.

6. 그 밖의 사항

·안전인증품의 품질관리, 확인심사 수검, 변경사항 신고 등 인증 받은 자의 의무 준수

·본 안전인증서는 반드시 관련 IECEx 인증서(IECEx KEM 05.0017X issue No.11)와 함께 사용

2018년 2월 8일

한국산업기술시험원장





No. 2021-072354-01-1

안전인증서

Certificate of Safety

F-R Tecnologias De Flujo, S.A. De C.V.

Ave. Miguel de Cervantes 111 31136 Chihuahua Mexico

The following product manufactured by the above company has been authorized for the use of safety certification mark as the product has satisfied the safety and health requirements under Article 84 of OCCUPATIONAL SAFETY AND HEALTH ACT and paragraph 1 of Article 110 of ENFORCEMENT ORDINANCE OF the same ACT.

Electrical Equipment

Vortex Flowmeter

Model (Marking) / Certificate No.

8800D remote vortex transmitter(Ex db [ia Ga] IIC T6 Gb) / 18-KA4BO-0064X

Applied standards

Announcement No. 2021-22 of Ministry of Employment and Labor

Conditions of Certification

1. Manufacturing location(s): This certificate is valid only for the specified products produced at 'Ave. Miguel de Cervantes 111 31136 Chihuahua Mexico'.

2. Description of equipment

·The Model 8800D Vortex Flowmeter consists of the flameproof enclosures Ex d and an remote mounted sensor assembly in type of protection intrinsic safety Ex ia.

·Rating: 32 Vdc max. (Fieldbus, digital output), $U_m = 250$ V

42 Vdc max. (4 - 20 mA HART analog and pulse outputs, MODBUS RS-485), $U_m = 250$ V

·Ambient temperature: -50 °C $\leq T_a \leq +70$ °C

·Process temperature: -200 °C $\leq T_{process} \leq +427$ °C

3. Scope of certification: This certificate is valid only for the models as above.

4. Special conditions for safe use

·See Specific Conditions of Use in the related IECEx certificate (IECEx KEM 05.0017X issue No.11) for the details.

5. Details of certificate changes

·1st Revision (2022.01.28.): This certificate is reissued to include the change of model name, equipment name and addition of RS-485 option and the IECEx certification update from No. 2018-001268-01.

6. Details of the others

·Manufacturer shall take the responsibility including maintaining quality requirements for the certified products, receiving factory surveillance and informing any changes to the certified products.

·This certificate shall be used with the related IECEx certificate (IECEx KEM 05.0017X issue No.11).

Date of Issue: 2018-02-08

한국산업기술시험원장
KOREA TESTING LABORATORY





제2021-072355-01-1호

안전인증서

F-R Tecnologias De Flujo, S.A. De C.V.

Ave. Miguel de Cervantes 111 31136 Chihuahua Mexico

위 사업장에서 제조하는 아래의 품목이 「산업안전보건법」 제84조 및 같은 법 시행규칙 제110조제1항에 따른 안전인증 심사 결과 안전·보건기준에 적합하므로 안전인증표시의 사용을 인증합니다.

품 목

Vortex Flowmeter(Remote Sensor)

형식·모델(용량·등급) / 인증번호

8800D remote vortex sensor(Ex ia IIC T6...T1 Ga) / 18-KA4BO-0065X

인증기준

고용노동부고시 제2021-22호

인증조건

1. 제조공장

·본 인증서는 'Ave. Miguel de Cervantes 111 31136 Chihuahua Mexico'에서 생산하는 제품에 한함.

2. 제품개요

·제품개요: 당 기기는 유체의 흐름을 측정하는 센서임.

·본질안전을 위한 전기적 파라미터: $U_o = 8.91 \text{ V}$, $I_o = 2.05 \text{ A}$, $P_o = 609.33 \text{ mW}$

·공정온도에 따른 온도등급: $-200 \text{ }^\circ\text{C} \leq T_{\text{process}} \leq +T_{\text{max}} \text{ }^\circ\text{C}$

	T6	T5	T4	T3	T2	T1
$T_{\text{max}} \text{ (}^\circ\text{C)}$	75	95	130	195	290	427

3. 인증범위: 본 인증서는 위의 형식번호에 한하여 유효함.

4. 안전한 사용을 위한 조건

·관련 IECEx 인증서(IECEx KEM 05.0017X issue No.11) 3 페이지 SPECIFIC CONDITIONS OF USE 참조

·당 기기는 8800D integral Vortex Flowmeter 장비와 함께 사용하여야 하며, 연결 케이블은 152 m 이하로 사용하여야 함.

5. 인증(변경)사항

·1차 변경(2022.01.28.): 기존 제2018-001290-01호에서 모델명, 온도등급 변경 및 IECEx 인증서 갱신에 따라 변경 발행함.

6. 그 밖의 사항

·안전인증품의 품질관리, 확인심사 수검, 변경사항 신고 등 인증 받은 자의 의무 준수

·본 안전인증서는 반드시 관련 IECEx 인증서(IECEx KEM 05.0017X issue No.11)와 함께 사용

2018년 2월 8일

한국산업기술시험원장





No. 2021-072355-01-1

안전인증서

Certificate of Safety

F-R Tecnologias De Flujo, S.A. De C.V.

Ave. Miguel de Cervantes 111 31136 Chihuahua Mexico

The following product manufactured by the above company has been authorized for the use of safety certification mark as the product has satisfied the safety and health requirements under Article 84 of OCCUPATIONAL SAFETY AND HEALTH ACT and paragraph 1 of Article 110 of ENFORCEMENT ORDINANCE OF the same ACT.

Electrical Equipment

Vortex Flowmeter(Remote Sensor)

Model (Marking) / Certificate No.

8800D remote vortex sensor(Ex ia IIC T6...T1 Ga) / 18-KA4BO-0065X

Applied standards

Announcement No. 2021-22 of Ministry of Employment and Labor

Conditions of Certification

- 1. Manufacturing location(s):** This certificate is valid only for the specified products produced at 'Ave. Miguel de Cervantes 111 31136 Chihuahua Mexico'.
- 2. Description of equipment**
 - The Model 8800D remote vortex sensor is remote mounted sensor in type of protection intrinsic safety Ex ia.
 - Electric parameter for intrinsic safety: $U_0 = 8.91$ V, $I_0 = 2.05$ A, $P_0 = 609.33$ mW
 - Process temperature: -200 °C $\leq T_{process} \leq +T_{max}$ °C

Temperature	T6	T5	T4	T3	T2	T1
T_{max} (°C)	75	95	130	195	290	427

- 3. Scope of certification:** This certificate is valid only for the models as above.
- 4. Special conditions for safe use**
 - See Specific Conditions of Use in the related IECEx certificate (IECEx KEM 05.0017X issue No.11) for the details.
 - The vortex sensor is only to be connected to the associated Model 8800D Vortex Flowmeter electronics. The maximum allowable length of the interconnecting cable is 152 m.
- 5. Details of certificate changes:** None
 - 1st Revision (2022.01.28.): This certificate is reissued to include the change of model name and temperature grade and the IECEx certification update from No. 2018-001290-01.
- 6. Details of the others**
 - Manufacturer shall take the responsibility including maintaining quality requirements for the certified products, receiving factory surveillance and informing any changes to the certified products.
 - This certificate shall be used with the related IECEx certificate (IECEx KEM 05.0017X issue No.11).

Date of Issue: 2018-02-08

한국산업기술시험원
KOREA TESTING LABORATORY





제2022-004793-01-1호

안전인증서

Emerson Process Management Flow Technologies Co., Ltd.

111, Xing Min South Road, Jiangning District, Nanjing, Jiangsu Province, 211100, China

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품 목

Vortex Flowmeter

형식·모델(용량·등급) / 인증번호

8800D(Ex tb IIIC T85 °C Db) / 19-KA4BO-0282X

인증기준

고용노동부고시 제2021-22호

인증조건

1. 제조공장

·본 인증서는 '111, Xing Min South Road, Jiangning District, Nanjing, Jiangsu Province, 211100, China'에서 생산하는 제품에 한함.

2. 제품개요

- 당 기기는 분진 방폭구조의 와류식 유량계임.
- 정격: 42 Vdc 이하 (HART 버전) / 32 Vdc 이하 (Foundation Fieldbus 버전)
- 사용주위온도: $-20\text{ }^{\circ}\text{C} \leq T_a \leq +70\text{ }^{\circ}\text{C}$
- IEC 60529에 따른 보호등급 IP6X를 만족함.

3. 인증범위: 본 인증서는 위의 형식번호에 한하여 유효함.

4. 안전한 사용을 위한 조건

·관련 IECEx 인증서(IECEX BAS 17.0019X issue No.4) 3페이지 SPECIFIC CONDITIONS OF USE 참조

5. 인증(변경)사항

·1차 변경(2022.04.27.): 기존 제2019-019084-01-1호에서 기재사항 변경 및 신규격평가 반영으로 인하여 재발행함.

6. 그 밖의 사항

- 안전인증품의 품질관리, 확인심사 수검, 변경사항 신고 등 인증 받은 자의 의무 준수
- 본 안전인증서는 반드시 관련 IECEx 인증서(IECEX BAS 17.0019X issue No.4)와 함께 사용

2019년 4월 30일

한국산업기술시험원장





No. 2022-004793-01-1

안전인증서

Certificate of Safety

Emerson Process Management Flow Technologies Co., Ltd.

111, Xing Min South Road, Jiangning District, Nanjing, Jiangsu Province, 211100, China

The following product manufactured by the above company has been authorized for the use of safety certification mark as the product has satisfied the safety and health requirements under Article 84 of OCCUPATIONAL SAFETY AND HEALTH ACT and paragraph 1 of Article 110 of ENFORCEMENT ORDINANCE OF the same ACT.

Electrical Equipment

Vortex Flowmeter

Model (Marking) / Certificate No.

8800D(Ex tb IIIC T85 °C Db) / 19-KA4BO-0282X

Applied standards

Announcement No. 2021-22 of Ministry of Employment and Labor

Conditions of Certification

1. Manufacturing location(s)

·This certificate is valid only for the specified products produced at '111, Xing Min South Road, Jiangning District, Nanjing, Jiangsu Province, 211100, China'.

2. Description of equipment

·The Model 8800D Vortex Flowmeter is a two-wire, piezoelectric-based flowmeter designed to measure the flow of a fluid within a pipe.

·Electrical Rating : Max. 42 Vdc (HART) / Max. 32 Vdc (Foundation Fieldbus)

·Ambient temperature: $-20\text{ °C} \leq T_a \leq +70\text{ °C}$

·IP6X degree of protection according to IEC 60529.

3. Scope of certification: This certificate is valid only for the models as above.

4. Special conditions for safe use

·See specific conditions of use on IECEx certificate(IECEx BAS 17.0019X issue No.4) for the details

5. Details of certificate change

·1st Revision(2022.04.27.): This certification is reissued to include the change of description and the assessment in accordance with the latest editions of the standards from No.2019-019084-01-1.

6. Details of others

·Manufacturer shall take the responsibility including maintaining quality requirements for the certified products, receiving factory surveillance and informing any changes to the certified products.

·This certificate shall be used with the related IECEx certificate(IECEx BAS 17.0019X issue No.4)

Date of Issue: 2019-04-30

한국산업기술시험원장
KOREA TESTING LABORATORY





제2022-004794-01-1호

안전인증서

F-R Tecnologias De Flujo, S.A. De C.V.

Ave. Miguel de Cervantes 111, 31136, Chihuahua, Mexico

위 사업장에서 제조하는 아래의 품목이 「산업안전보건법」 제84조 및 같은 법 시행규칙 제110조제1항에 따른 안전인증 심사 결과 안전·보건기준에 적합하므로 안전인증표시의 사용을 인증합니다.

품 목

Vortex Flowmeter

형식·모델(용량·등급) / 인증번호

8800D(Ex tb IIIC T85 °C Db) / 19-KA4BO-0283X

인증기준

고용노동부고시 제2021-22호

인증조건

1. 제조공장

·본 인증서는 'Ave. Miguel de Cervantes 111, 31136, Chihuahua, Mexico'에서 생산하는 제품에 한함.

2. 제품개요

- 당 기기는 분진 방폭구조의 와류식 유량계임.
- 정격: 42 Vdc 이하 (HART 버전) / 32 Vdc 이하 (Foundation Fieldbus 버전)
- 사용주위온도: $-20\text{ }^{\circ}\text{C} \leq T_a \leq +70\text{ }^{\circ}\text{C}$
- IEC 60529에 따른 보호등급 IP6X를 만족함.

3. 인증범위: 본 인증서는 위의 형식번호에 한하여 유효함.

4. 안전한 사용을 위한 조건

·관련 IECEx 인증서(IECEx BAS 17.0019X issue No.4) 3페이지 SPECIFIC CONDITIONS OF USE 참조

5. 인증(변경)사항

·1차 변경(2022.04.27.): 기존 제2019-019083-01-1호에서 기재사항 변경 및 신규격평가 반영으로 인하여 재발행함.

6. 그 밖의 사항

- 안전인증품의 품질관리, 확인심사 수검, 변경사항 신고 등 인증 받은 자의 의무 준수
- 본 안전인증서는 반드시 관련 IECEx 인증서(IECEx BAS 17.0019X issue No.4)와 함께 사용

2019년 4월 30일

한국산업기술시험원장





No. 2022-004794-01-1

안전인증서

Certificate of Safety

F-R Tecnologias De Flujo, S.A. De C.V.

Ave. Miguel de Cervantes 111, 31136, Chihuahua, Mexico

The following product manufactured by the above company has been authorized for the use of safety certification mark as the product has satisfied the safety and health requirements under Article 84 of OCCUPATIONAL SAFETY AND HEALTH ACT and paragraph 1 of Article 110 of ENFORCEMENT ORDINANCE OF the same ACT.

Electrical Equipment

Vortex Flowmeter

Model (Marking) / Certificate No.

8800D(Ex tb IIIC T85 °C Db) / 19-KA4BO-0283X

Applied standards

Announcement No. 2021-22 of Ministry of Employment and Labor

Conditions of Certification

1. Manufacturing location(s)

·This certificate is valid only for the specified products produced at 'Ave. Miguel de Cervantes 111, 31136, Chihuahua, Mexico'.

2. Description of equipment

·The Model 8800D Vortex Flowmeter is a two-wire, piezoelectric-based flowmeter designed to measure the flow of a fluid within a pipe.

·Electrical Rating : Max. 42 Vdc (HART) / Max. 32 Vdc (Foundation Fieldbus)

·Ambient temperature: $-20\text{ °C} \leq T_a \leq +70\text{ °C}$

·IP6X degree of protection according to IEC 60529.

3. Scope of certification: This certificate is valid only for the models as above.

4. Special conditions for safe use

·See specific conditions of use on IECEx certificate(IECEx BAS 17.0019X issue No.4) for the details

5. Details of certificate change

·1st Revision(2022.04.27.): This certification is reissued to include the change of description and the assessment in accordance with the latest editions of the standards from No.2019-019083-01-1.

6. Details of others

·Manufacturer shall take the responsibility including maintaining quality requirements for the certified products, receiving factory surveillance and informing any changes to the certified products.

·This certificate shall be used with the related IECEx certificate(IECEx BAS 17.0019X issue No.4)

Date of Issue: 2019-04-30

한국산업기술시험원장
KOREA TESTING LABORATORY





제2021-072353-01-1호

안전인증서

Emerson Process Management Flow Technologies Co., Ltd.

111, Xing Min South Road, Jiangning District, Nanjing, Jiangsu Province, 211100, China

위 사업장에서 제조하는 아래의 품목이 「산업안전보건법」 제84조 및 같은 법 시행규칙 제110조제1항에 따른 안전인증 심사 결과 안전·보건기준에 적합하므로 안전인증표시의 사용을 인증합니다.

품 목

Vortex Flowmeter(Remote Sensor)

형식·모델(용량·등급) / 인증번호

8800D remote vortex sensor(Ex ia IIC T6...T1 Ga) / 22-KA4BO-0092X

인증기준

고용노동부고시 제2021-22호

인증조건

1. 제조공장

·본 인증서는 '111, Xing Min South Road, Jiangning District, Nanjing, Jiangsu Province, 211100, China'에서 생산하는 제품에 한함.

2. 제품개요

- 제품개요: 당 기기는 유체의 흐름을 측정하는 센서임.
- 본질안전을 위한 전기적 파라미터: $U_o = 8.91 \text{ V}$, $I_o = 2.05 \text{ A}$, $P_o = 609.33 \text{ mW}$
- 공정온도에 따른 온도등급: $-200 \text{ }^\circ\text{C} \leq T_{\text{process}} \leq +T_{\text{max}} \text{ }^\circ\text{C}$

	T6	T5	T4	T3	T2	T1
$T_{\text{max}} \text{ (}^\circ\text{C)}$	75	95	130	195	290	427

3. 인증범위: 본 인증서는 위의 형식번호에 한하여 유효함.

4. 안전한 사용을 위한 조건

- 관련 IECEx 인증서(IECEx KEM 05.0017X issue No.11) 3 페이지 SPECIFIC CONDITIONS OF USE 참조
- 당 기기는 8800D integral Vortex Flowmeter 장비와 함께 사용하여야 하며, 연결 케이블은 152 m 이하로 사용하여야 함.

5. 인증(변경)사항: 없음.

6. 그 밖의 사항

- 안전인증품의 품질관리, 확인심사 수검, 변경사항 신고 등 인증 받은 자의 의무 준수
- 본 안전인증서는 반드시 관련 IECEx 인증서(IECEx KEM 05.0017X issue No.11)와 함께 사용

2022년 1월 28일

한국산업기술시험원장





No. 2021-072353-01-1

안전인증서

Certificate of Safety

Emerson Process Management Flow Technologies Co., Ltd.

111, Xing Min South Road, Jiangning District, Nanjing, Jiangsu Province, 211100, China

The following product manufactured by the above company has been authorized for the use of safety certification mark as the product has satisfied the safety and health requirements under Article 84 of OCCUPATIONAL SAFETY AND HEALTH ACT and paragraph 1 of Article 110 of ENFORCEMENT ORDINANCE OF the same ACT.

Electrical Equipment

Vortex Flowmeter(Remote Sensor)

Model (Marking) / Certificate No.

8800D remote vortex sensor(Ex ia IIC T6...T1 Ga) / 22-KA4BO-0092X

Applied standards

Announcement No. 2021-22 of Ministry of Employment and Labor

Conditions of Certification

- 1. Manufacturing location(s):** This certificate is valid only for the specified products produced at '8111, Xing Min South Road, Jiangning District, Nanjing, Jiangsu Province, 211100, China'.
- 2. Description of equipment**
 - The Model 8800D remote vortex sensor is remote mounted sensor in type of protection intrinsic safety Ex ia.
 - Electric parameter for intrinsic safety: $U_0 = 8.91 \text{ V}$, $I_0 = 2.05 \text{ A}$, $P_0 = 609.33 \text{ mW}$
 - Process temperature: $-200 \text{ }^\circ\text{C} \leq T_{\text{process}} \leq +T_{\text{max}} \text{ }^\circ\text{C}$

Temperature	T6	T5	T4	T3	T2	T1
$T_{\text{max}} \text{ (}^\circ\text{C)}$	75	95	130	195	290	427

- 3. Scope of certification:** This certificate is valid only for the models as above.
- 4. Special conditions for safe use**
 - See Specific Conditions of Use in the related IECEx certificate (IECEx KEM 05.0017X issue No.11) for the details.
 - The vortex sensor is only to be connected to the associated Model 8800D Vortex Flowmeter electronics. The maximum allowable length of the interconnecting cable is 152 m.
- 5. Details of certificate changes:** None
- 6. Details of the others**
 - Manufacturer shall take the responsibility including maintaining quality requirements for the certified products, receiving factory surveillance and informing any changes to the certified products.
 - This certificate shall be used with the related IECEx certificate (IECEx KEM 05.0017X issue No.11).

Date of Issue: 2022-01-28

한국산업기술시험원장
KOREA TESTING LABORATORY





제2021-072356-01-1호

안전인증서

F-R Tecnologias De Flujo, S.A. De C.V.

Ave. Miguel de Cervantes 111 31136 Chihuahua Mexico

위 사업장에서 제조하는 아래의 품목이 「산업안전보건법」 제84조 및 같은 법 시행규칙 제110조제1항에 따른 안전인증 심사 결과 안전·보건기준에 적합하므로 안전인증표시의 사용을 인증합니다.

품 목

Vortex Flowmeter

형식·모델(용량·등급) / 인증번호

8800D integral vortex transmitter(Ex db [ia] IIC T6...T1 Ga/Gb) / 22-KA4BO-0093X

인증기준

고용노동부고시 제2021-22호

인증조건

1. 제조공장

·본 인증서는 'Ave. Miguel de Cervantes 111 31136 Chihuahua Mexico'에서 생산하는 제품에 한함.

2. 제품개요

·제품개요: 당 기기는 0종/1종 경계지역에 설치(Ga/Gb)되는 와류식 유량계(integral transmitter)임.

·제품정격: 32 Vdc max. (Fieldbus, digital output), $U_m = 250 V$

42 Vdc max. (4 - 20 mA HART analog and pulse outputs, MODBUS RS-485), $U_m = 250 V$

·사용주위온도: $-50 \text{ }^\circ\text{C} \leq T_a \leq +70 \text{ }^\circ\text{C}$

·공정온도에 따른 온도등급: $-200 \text{ }^\circ\text{C} \leq T_{\text{process}} \leq +T_{\text{max}} \text{ }^\circ\text{C}$

	T6	T5	T4	T3	T2	T1
$T_{\text{max}} \text{ (}^\circ\text{C)}$	75	95	130	195	290	427

3. 인증범위: 본 인증서는 위의 형식번호에 한하여 유효함.

4. 안전한 사용을 위한 조건

·관련 IECEx 인증서(IECEx KEM 05.0017X issue No.11) 3 페이지 SPECIFIC CONDITIONS OF USE 참조

5. 인증(변경)사항: 없음.

6. 그 밖의 사항

·안전인증품의 품질관리, 확인심사 수검, 변경사항 신고 등 인증 받은 자의 의무 준수

·본 안전인증서는 반드시 관련 IECEx 인증서(IECEx KEM 05.0017X issue No.11)와 함께 사용

2022년 1월 28일

한국산업기술시험원장





No. 2021-072356-01-1

안전인증서

Certificate of Safety

F-R Tecnologias De Flujo, S.A. De C.V.

Ave. Miguel de Cervantes 111 31136 Chihuahua Mexico

The following product manufactured by the above company has been authorized for the use of safety certification mark as the product has satisfied the safety and health requirements under Article 84 of OCCUPATIONAL SAFETY AND HEALTH ACT and paragraph 1 of Article 110 of ENFORCEMENT ORDINANCE OF the same ACT.

Electrical Equipment

Vortex Flowmeter

Model (Marking) / Certificate No.

8800D integral vortex transmitter(Ex db [ia] IIC T6...T1 Ga/Gb) / 22-KA4BO-0093X

Applied standards

Announcement No. 2021-22 of Ministry of Employment and Labor

Conditions of Certification

1. Manufacturing location(s): This certificate is valid only for the specified products produced at 'Ave. Miguel de Cervantes 111 31136 Chihuahua Mexico'.

2. Description of equipment

·The Model 8800D Vortex Flowmeter consists of the flameproof enclosures Ex d and an integral sensor assembly in type of protection intrinsic safety Ex ia.

·Rating: 32 Vdc max. (Fieldbus, digital output), $U_m = 250$ V

42 Vdc max. (4 - 20 mA HART analog and pulse outputs, MODBUS RS-485), $U_m = 250$ V

·Ambient temperature: -50 °C $\leq T_a \leq +70$ °C

·Process temperature: -200 °C $\leq T_{process} \leq +T_{max}$ °C

Temperature	T6	T5	T4	T3	T2	T1
T_{max} (°C)	75	95	130	195	290	427

3. Scope of certification: This certificate is valid only for the models as above.

4. Special conditions for safe use

·See Specific Conditions of Use in the related IECEx certificate (IECEx KEM 05.0017X issue No.11) for the details.

5. Details of certificate changes: None

6. Details of the others

·Manufacturer shall take the responsibility including maintaining quality requirements for the certified products, receiving factory surveillance and informing any changes to the certified products.

·This certificate shall be used with the related IECEx certificate (IECEx KEM 05.0017X issue No.11).

Date of Issue: 2022-01-28

한국산업기술시험원장
KOREA TESTING LABORATORY

