



Translation

EC-Type Examination Certificate

(1)

(2)

- Directive 94/9/EC -

**Equipment and protective systems intended for use
in potentially explosive atmospheres**

(3)

BVS 10 ATEX E 112

(4)

Product: Pressurised enclosure system type F870S

(5)

Manufacturer: Gönzheimer Electronic GmbH

(6)

Address: 67433 Neustadt/Weinstraße, Germany

(7)

This product and any acceptable variations thereto are specified in the appendix to this certificate and the documents referred to therein.

(8)

DEKRA EXAM GmbH, Notified Body number 0158, in accordance with Article 9 of Directive 94/9/EC of the European Parliament and of the Council, dated 23 March 1994, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential Report No. BVS PP 10.2213 EG.

(9)

The Essential Health and Safety Requirements are assured in consideration of:

EN 60079-0:2006	General requirements	EN 61241-0:2006	General requirements
EN 60079-1:2007	Flameproof Enclosure "d"	EN 61241-1:2004	Protection by Enclosure "tD"
EN 60079-2:2007	Pressurised Enclosure "p"	EN 61241-11:2006	Intrinsic Safety "iD"
EN 60079-7:2007	Increased Safety "e"	EN ISO 13849-1:2008	Safety of machinery
EN 60079-11:2007	Intrinsic Safety "i"		
EN 60079-18:2004	Encapsulation "m"		

(10)

If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Special Conditions for Use specified in the appendix to this certificate.

(11)

This EC-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive 94/9/EC apply to the manufacturing process and supply of this product. These are not covered by this certificate.

(12)

The marking of the product shall include the following:

 II 2G
II 2D **See paragraph 15.1**

DEKRA EXAM GmbH

Bochum, 2010-09-17

Signed: Christian Simanski

signed: Dr. Franz Eickhoff

Certification Body

Special services unit

Page 1 of 4 of BVS 10 ATEX E 112

This certificate may only be reproduced in its entirety and without any change.



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(13)

Appendix

(14)

EC-Type Examination Certificate

BVS 10 ATEX E 112

(15) 15.1 Subject and type

Pressurised enclosure system type F870S

Consisting of

Type of protection

Control unit of type F870S * * * * *

(the full name the asterisks will be replaced by letters and numbers indicating the different variants)

Ex e d mb ib [px] IIC T4
Ex tD [ibD] [pD] A21 IP65 T 100°C

Operating panel type BT871*

(the asterisk will be replaced by the numbers 0 = front installation or 5 = field enclosure)

Ex ib IIC T4
Ex ibD21 T 135°C

Sensor type ES872

Ex ib IIC T4
Ex ibD21 T 135°C

Configuration module type CM873

Ex ib IIC T4
Ex ibD21 T 135°C

15.2 Description

The pressurised enclosure system of type F 870S is used for the construction of explosion protected electrical equipment of the type of protection pressurised enclosure according to both EN/IEC 60079-2 and EN/IEC 61241-4. The system consists of the control unit FS870 with sensors installed for pressure and flow rate, the operating panel of type BT871, the sensor of type ES872, the configuration module of type CM873 and other auxiliary devices.

The sensor or the configuration module can be connected to terminals 11-14, and the operating tableau can be connected to terminals 15-18.

The control unit F870S for pressurised enclosure systems meets the requirements for a use in safety functions up to a performance level d. According to Table 4 of EN ISO 13849-1/12.2008, this level corresponds with a safety integrity level (SIL) 2.

15.3 Parameters

15.3.1	Control unit				
15.3.1.1	Mains voltage (terminals 21,22 – 19,20) type FS870S.6.*.*.*.*				
	Nominal voltage		DC	24	V
	Max. voltage	Um	AC/DC	63	V
	Type FS870S.0.*.*.*.*				
	Nominal voltage		AC	100-230	V
	Max. voltage	Um	AC	253	V
15.3.1.2	Relay contact circuits Power 1 (terminals 28-29) and 2 (terminals 30-31) and signal contact (terminals 32,33)				
	Switching voltage		AC	250	V
	Max. voltage	Um	AC	253	V
	Switching current			5	A
15.3.1.3	Ethernet circuits (terminals 39-44)				
	Max. voltage	Um	AC/DC	63	V
15.3.1.4	Valve output (terminals 36,37)				
	Nominal voltage		DC	24	V
	Current limited by fuse at terminals 34-35				
15.3.1.5	Intrinsically safe input/output circuits of protection level Ex ib				
15.3.1.5.1	Digital inputs (terminals 1-2, 3-4 and 5-6) Values per circuit				
	Voltage	Uo	DC	5.4	V
	Current	Io		6.2	mA
	Power	Po		8.3	mW
	Max. external inductance	Lo		0.5	mH
	Max. external capacitance	Co		100	nF
15.3.1.5.2	LED outputs (terminals 7-8 and 9-10) Values per circuit				
	Voltage	Uo	DC	5.4	V
	Current	Io		9.7	mA
	Power	Po		13	mW
	Max. external inductance	Lo		0.5	mH
	Max. external capacitance	Co		100	nF
15.3.2	Ambient temperature range	Ta		-20 °C up to +60 °C	
15.3.3	Surface temperature for the control unit for the operating panel and the sensor	T		100 °C 135 °C	
15.3.4	Degrees of protection as per EN 60529 for the control unit			IP6X	

(16) Test and assessment report

BVS PP 10.2213 EG, as of 2010-09-17

(17) Special Conditions for Use

None

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

DEKRA Testing and Certification GmbH
Bochum, 2020-08-12
BVS-Alh/Ar



Managing Director

Translation

(1) 1st Supplement to EC-Type Examination Certificate

(2) Equipment and protective systems intended for use in potentially explosive atmospheres
Directive 94/9/EC
Supplement accordant with Annex III number 6

(3) No. of EC-Type Examination Certificate: **BVS 10 ATEX E 112**

(4) Product: **Pressurised enclosure system type F870S**

(5) Manufacturer: **Gönzheimer Elektronik GmbH**

(6) Address: **Dr.-Julius-Leber-Str. 2, 67433 Neustadt/Weinstraße, Germany**

(7) This product and any acceptable variations thereto are specified in the appendix to this certificate and the documents referred to therein.

(8) DEKRA EXAM GmbH, Notified Body number 0158, in accordance with Article 9 of Directive 94/9/EC of the European Parliament and of the Council, dated 23 March 1994, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential Report No. BVS PP 10.2213 EG.

(9) The Essential Health and Safety Requirements are assured in consideration of:

EN 60079-0:2012+A11:2013	General requirements
EN 60079-1:2014	Flameproof Enclosure "d"
EN 60079-7:2007	Increased Safety "e"
EN 60079-2:2014	Pressurised Enclosure "p"
EN 60079-11:2012	Intrinsic Safety "i"
EN 60079-18:2009	Encapsulation "m"
EN 60079-31:2009	Protection by Enclosure "t"
EN ISO 13849-1:2008	Safety of machinery

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Special Conditions for Use specified in the appendix to this certificate.

(11) This EC-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive 94/9/EC apply to the manufacturing process and supply of this product. These are not covered by this certificate.

(12) The marking of the product shall include the following:


II 2G
II 2D
See paragraph 15.1

DEKRA EXAM GmbH
Bochum, 2015-10-12

Signed: Christian Simanski

signed: Dr. Franz Eickhoff

Certification Body

Special services unit



- (13) Appendix to
- (14) **1st Supplement to EC-Type Examination Certificate BVS 10 ATEX E 112**
- (15) 15.1 Subject and type

Pressurised enclosure system type F870S

Consisting of

Control unit of type F870S * * * * *
 (the full name the asterisks will be replaced by letters and numbers indicating the different variants)
 Operating panel type BT871*
 (the asterisk will be replaced by the numbers 0 = front installation or 5 = field enclosure)

Sensor type ES872

Configuration module type CM873

Type of protection

II 2G Ex e db mb ib [pxb] IIC T4 Gb
 II 2D Ex tb IIIC T100°C [ib] [pxb] Db

II 2G Ex ib IIC T4 Gb
 II 2D Ex ib IIIC T135°C Db

II 2G Ex ib IIC T4 Gb
 II 2D Ex ib IIIC T135°C Db

II 2G Ex ib IIC T4 Gb
 II 2D Ex IIIC T135°C Db

15.2 Description

The pressurised enclosure system of type F870S can now also be manufactured according to the test documents listed in the pertinent test and assessment report.

The pressurised enclosure system is tested and assessed according to the currently valid version of standard EN 60079-*. The marking has been modified.

Listing of all components used referring to older standards

Subject and type	Certificate	Standards
Empty enclosure type series AL-KE 25...	PTB 98 ATEX 3101 U	EN 60079-0:2009

15.3 Parameters

Unchanged

- (16) Report Number

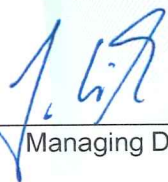
BVS PP 10.2213 EG / N1, as of 2015-10-12

- (17) Special Conditions for Use

Unchanged

We confirm the correctness of the translation from the German original.
 In the case of arbitration only the German wording shall be valid and binding.

DEKRA Testing and Certification GmbH
 Bochum, 2020-08-12
 BVS-Alh/Ar



Managing Director

Translation

EU-Type Examination Certificate Supplement 2

Change to Directive 2014/34/EU

Equipment intended for use in potentially explosive atmospheres
Directive 2014/34/EU

EU-Type Examination Certificate Number: **BVS 10 ATEX E 112**

Product: **Pressurised enclosure system type F870S**

Manufacturer: **Gönzheimer Elektronik GmbH**

Address: **Dr.-Julius-Leber-Str. 2, 67433 Neustadt/Weinstraße, Germany**

This supplementary certificate extends EC-Type Examination Certificate No. BVS 10 ATEX E 112 to apply to products designed and constructed in accordance with the specification set out in the appendix of the said certificate but having any acceptable variations specified in the appendix to this certificate and the documents referred to therein.

DEKRA EXAM GmbH, Notified Body number 0158, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential Report No. BVS PP 10.2213 EU.

The Essential Health and Safety Requirements are assured in consideration of:

EN 60079-0:2012 + A11:2013	General requirements
EN 60079-1:2014	Flameproof Enclosure “d”
EN 60079-2:2014	Pressurised Enclosure “p”
EN 60079-7:2015	Increased Safety “e”
EN 60079-11:2012	Intrinsic Safety “i”
EN 60079-18:2015	Encapsulation “m”
EN 60079-31:2014	Protection by Enclosure “t”

If the sign “X” is placed after the certificate number, it indicates that the product is subject to the Special Conditions for Use specified in the appendix to this certificate.

This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

The marking of the product shall include the following:

 **II 2G**
II 2D See paragraph 15.1

DEKRA EXAM GmbH
Bochum, 2018-07-09

signed: Jörg Koch

Certifier

signed: Dr. Michael Wittler

Approver

13 **Appendix**

14 **EU-Type Examination Certificate**

**BVS 10 ATEX E 112
Supplement 2**

15 **Product description**

15.1 **Subject and type**

Pressurised enclosure system type F870S

Consisting of

Control unit of type F870S * * * * *

(the full name the asterisks will be replaced by letters and numbers indicating the different variants)

Operating panel type BT871*

(the asterisk will be replaced by the numbers 0 = front installation or 5 = field enclosure)

Sensor type ES872

Configuration module type CM873

Type of protection

II 2G Ex eb db mb ib [pxb] IIC T4 Gb
II 2D Ex tb IIIC T100°C [ib] [pxb] Db

II 2G Ex ib IIC T4 Gb
II 2D Ex ib IIIC T135°C Db

II 2G Ex ib IIC T4 Gb
II 2D Ex ib IIIC T135°C Db

II 2G Ex ib IIC T4 Gb
II 2D Ex ib IIIC T135°C Db

15.2 **Description**

With this supplement the certificate is changed to Directive 2014/34/EU.

(Annotation: In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Supplementary Certificates to such EC-Type Examination Certificates, and new issues of such certificates, may continue to bear the original certificate number issued prior to 20 April 2016.)

The pressurised enclosure system of type F 870S is used for the construction of explosion protected electrical equipment of the type of protection pressurised enclosure according to both EN/IEC 60079-2 and EN/IEC 61241-4. The system consists of the control unit FS870 with sensors installed for pressure and flow rate, the operating panel of type BT871, the sensor of type ES872, the configuration module of type CM873 and other auxiliary devices. The sensor or the configuration module can be connected to terminals 11-14, and the operating tableau can be connected to terminals 15-18.

The control unit F870S for pressurised enclosure systems meets the requirements for a use in safety functions up to a performance level d. According to Table 4 of EN ISO 13849-1/12.2008, this level corresponds with a safety integrity level (SIL) 2 (test report FLES PB 10008).

Reason for the supplement:

- change to Directive 2014/34/EU
- standards have been upgraded
- new compound material being used
- modifications in the population and layout

15.3 Parameters

15.3.1 Control unit

15.3.1.1 Mains voltage (terminals 21,22 – 19,20)
type FS870S.6.*.*.*.*

Rated voltage		DC	24	V
Max. voltage	U_m	AC/DC	63	V

Typ FS870S.0.*.*.*.*

Rated voltage		AC	100-230	V
Max. voltage	U_m	AC	253	V

15.3.1.2 Relay contact circuits Power 1 (terminals 28-29) and 2 (terminals 30-31) and signal contact (terminals 32,33)

Switching voltage			AC250	V
Max. voltage	U_m	AC	253	V
Switching current			5	A

15.3.1.3 Ethernet circuits (terminals 39 – 44)

Max. voltage	U_m	AC/DC	63	V
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15.3.1.4 Valve output (terminals 36,37)

Rated voltage		DC	24	V
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Current limited by fuse at terminals 34-35

15.3.1.5 Intrinsically safe input/output circuits of protection level Ex ib

15.3.1.5.1 Digital inputs (terminals 1-2, 3-4 and 5-6)

Values per circuit

Voltage	U_o	DC	5.4	V
Current	I_o		6.2	mA
Power	P_o		8.3	mW
Max. external inductance	L_o		0.5	mH
Max. external capacitance	C_o		100	nF

15.3.1.5.2 LED outputs (terminals 7-8 and 9-10)

Values per circuit

Voltage	U_o	DC	5.4	V
Current	I_o		9.7	mA
Power	P_o		13	mW
Max. external inductance	L_o		0.5	mH
Max. external capacitance	C_o		100	nF

15.3.2 Ambient temperature range

T_a	-20 °C up to +60 °C
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15.3.3 Surface temperature

	T	
for the control unit	100	°C
for the operating panel and the sensor	135	°C

15.3.4 Degrees of protection as per EN 60529 for the control unit

IP6X

16 Report Number

BVS PP 10.2213 EU, as of 2018-07-09

17 Special Conditions for Use

None

18 Essential Health and Safety Requirements

The Essential Health and Safety Requirements are covered by the standards listed under item 9.

Drawings and Documents

Drawings and documents are listed in the confidential report.

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

DEKRA Testing and Certification GmbH
Bochum, 2020-08-12
BVS-Alh/Ar



Managing Director

