

(1) **EC-Type Examination Certificate**

(2) Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC

(3) No. of the EC-Type Examination Certificate: **BVS 14 ATEX H 014 X**(4) Equipment: **High-performance valves of types:**
HP 111, HP 114 DN50 to DN1200
HP 111-E, HP 114-E DN50 to DN200
HP 114-C DN80 to DN400
HP 112, HP 112-E, HP 112-S DN80 to DN600
HP-L, HP-LW DN50 to DN600
HP 311 DN80 to DN600
HP 312 DN80 to DN600
HP 314 DN80 to DN600(5) Manufacturer: **EBRO Armaturen Gebr. Bröer GmbH**(6) Address: **Karlstrasse 8**
D-58135 Hagen, Germany

(7) The design and construction of this equipment and any acceptable variation thereto are specified in the appendix to this type examination certificate.

(8) The certification body of DEKRA EXAM GmbH, Notified Body No. 0158 according to Article 9 of Directive 94/9/EC of the European Parliament and the Council of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive. The examination and test results are recorded in the test and assessment report PP 14EXAM 10390 EG.

(9) The Essential Health and Safety Requirements are assured by compliance with

DIN EN 13463-1:2009**DIN EN 13463-5:2011****IEC/TS 60079-32-1:2013**

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the appendix to this certificate.

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

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

 **II 1D c TX -20°C ≤ Ta ≤ +60°C** or  **II 1DG c TX -20°C ≤ Ta ≤ +60°C**

 DEKRA EXAM GmbH
 Bochum, Germany, dated 05/02/2015

signed: Simanski

signed: Dr. Hübner

Certification body

Special services unit

TRANSLATION

- (13) Appendix to
- (14) **EC-Type Examination Certificate
BVS 14 ATEX H 014 X**
- (15) 15.1 Subject and Type

The high-performance valves of the following types:

HP 111, HP 114 DN50 to DN1200
 HP 111-E, HP 114-E DN50 to DN200
 HP 114-C DN80 to DN400
 HP 112, HP 112-E, HP 112-S DN80 to DN600
 HP-L, HP-LW DN50 to DN600
 HP 311 DN80 to DN600
 HP 312 DN80 to DN600
 HP 314 DN80 to DN600

15.2 Description

The high-performance valves of the types 111, HP 112, H P114, HP 111-E, HP 112-E, HP 114-E, HP 112-S, HP 114-C, HP-L, HP-LW, HP 311, HP 312 and HP 314 are intended to shut down, permit and control the flow of certain media in pipelines within specified pressure and temperature limitations. The high-performance valves are designed as butterfly wafer-type valves; inside the valve enclosure, which is flanged on both sides, a disc turns which has double bearings. The operation of the high-performance valves is driven by a pneumatic or electric drive which is mounted from the outside onto a shaft seat; the drive is not subject of this EC-type examination. The maximum drive torque permitted is specified in the operating manual.

The valve-related maximum temperature and pressure values depend on both the material used for the enclosure and the material used for the seat; they can be found in the technical documentation and on the type labels. The sealings listed in Table 1 are used as material for the seats.

The attached equipment are listed below in.

Table 1: overview of sealings and temperature limits

Type	Explosive dusts		Explosive gases and/or vapours	
	Sealing material	Upper temperature limit	Sealing material	Upper temperature limit
HP 111, HP 114	PTFE	230 °C	Inconel	450 °C
HP 111-E, HP 114-E				
HP 114-C	TriEx	600 °C	TriEx	600 °C
HP 112, HP 112-E, HP 112-S	Graphite	450 °C	Graphite	450 °C
HP-L, HP-LW				
HP 311	TriEx	450 °C	TriEx	450 °C
HP 312				
HP 314				

The high-performance valves are suitable for use in Gas-Ex and Dust-Ex atmospheres. Depending on the seal variant used, the high-performance shut-off and control valves fulfil the requirements of the equipment categories 1D or 1DG.

15.3 Parameters

Max. relative speed: < 1.0 m·s⁻¹
 Max. torque dusts: < 125 Nm
 Max. torque gases/vapours: < 60 Nm

TRANSLATION

(16) Test and Assessment Report

PP 13EXAM 10390 EG, as of 05.02.2015

(17) Special Conditions for Safe Use

The high-performance valves must be grounded, i.e., the resistance to earth should be less than $10^6 \Omega$.

The maximum surface temperature of the high-performance valves depends on the temperature of the processed media. The user has to ensure that the maximum media temperature T_F does not exceed the permitted temperature limits according to the safety-relevant parameters of the gases, vapours and dusts and to the temperature limit values stated in Table 1.

The handled gases or vapours must show of the following safety-relevant data:

Ignition temperature $\geq 1.25 \cdot T_F$ determined according to DIN EN 14522

The handled dusts must show of the following safety-relevant data:

Ignition temperature $\geq 3/2 \cdot T_F$ determined according to DIN EN 50281-2-1

Smouldering temperature $\geq T_F + 75 K$ determined according to DIN EN 50281-2-1

No substances shall be used that are susceptible to ignition or explosion caused by impacts or friction (e.g. according to class 4.1 ADR); neither shall hybrid mixtures be used. Principally, the machine is not suitable for processing or dosing self-decomposing substances.

During the operation, no potential sources of ignition (e.g. glowing or burning particles, smouldering nests, foreign bodies) may ingress the high-performance shut-off and control valves.

If the high-performance shut-off and control valves are used in areas where potentially explosive atmospheres may occur, the equipment shall only be operated together with equipment that is suitable for the individual application and supplied in compliance with Directive 94/9/EC. The assembly of the high-performance shut-off and control valves with equipment that has not been subject of this EC-Type Examination (e.g. the drive) a separate risk assessment with regard to additional ignition hazards has to be carried out.

When selecting and erecting electrical equipment the requirements of DIN EN 60079-14 have to be observed.

In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, Germany, dated 24.02.2015
14EXAM 10390

DEKRA EXAM GmbH



Certification body



Special services unit

1st Supplement to the EC-Type Examination Certificate

- (1)
- (2) Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC
- (3) No. of the supplement to the EC-Type Examination Certificate: **BVS 14 ATEX H 014 X N1**
- (4) Equipment: **High-performance valves of types:**
HP 111, HP 114 DN50 to DN1200
HP 111-E, HP 114-E DN50 to DN200
HP 114-C DN80 to DN400
HP 114-K3 DN50 to DN600
HP 112, HP 112-E, HP 112-S DN80 to DN600
HP 311 DN80 to DN600
HP 312 DN80 to DN600
HP 314 DN80 to DN600
- (5) Manufacturer: **EBRO Armaturen Gebr. Bröer GmbH**
- (6) Address: **Karlstrasse 8**
D-58135 Hagen, Germany
- (7) The design and construction of this equipment and any acceptable variation thereto are specified in the appendix to this type examination certificate.
- (8) The certification body of DEKRA EXAM GmbH, Notified Body No. 0158 according to Article 9 of Directive 94/9/EC of the European Parliament and the Council of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive. The examination and test results are recorded in the test and assessment reports PP 14EXAM 10390 EG and PP 14EXAM 10390 EG N1.
- (9) The Essential Health and Safety Requirements are assured by compliance with

DIN EN 13463-1:2009

DIN EN 13463-5:2011

IEC/TS 60079-32-1:2013

- (10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the appendix to this certificate.
- (11) This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.
- (12) The marking of the equipment shall include the following:

⊕ II 1D c TX -20°C ≤ Ta ≤ +60°C or **⊕ II 1DG c TX -20°C ≤ Ta ≤ +60°C**

DEKRA EXAM GmbH
 Bochum, Germany, dated 04/12/2015

signed: Simanski

signed: Hesener

Certification body

Special services unit

- (13) Appendix to
- (14) **1st Supplement to the EC-Type Examination Certificate
BVS 14 ATEX H 014 X**
- (15) 15.1 Subject and Type

The high-performance valves of the following types:

HP 111, HP 114 DN50 to DN1200
 HP 111-E, HP 114-E DN50 to DN200
 HP 114-C DN80 to DN400
 HP 114-K3 DN50 to DN600
 HP 112, HP 112-E, HP 112-S DN80 to DN600
 HP 311 DN80 to DN600
 HP 312 DN80 to DN600
 HP 314 DN80 to DN600

15.2 Description

The high-performance valves of the types HP 111, HP 112, HP 114, HP 111-E, HP 112-E, HP 114-E, HP 112-S, HP 114-C, HP 114-K3, HP 311, HP 312 and HP 314 are intended to shut down, permit and control the flow of certain media in pipelines within specified pressure and temperature limitations. The high-performance valves are designed as butterfly wafer-type valves; inside the valve enclosure, which is flanged on both sides, a disc turns which has double bearings. The operation of the high-performance valves is driven by a pneumatic or electric drive which is mounted from the outside onto a shaft seat; the drive is not subject of this EC-type examination. The maximum drive torque permitted is specified in the operating manual.

The valve-related maximum temperature and pressure values depend on both the material used for the enclosure and the material used for the seat; they can be found in the technical documentation and on the type labels. The sealings listed in Table 1 are used as material for the seats.

The attached equipment are listed below in.

Table 1: overview of sealings and temperature limits

Type	Explosive dusts		Explosive gases and/or vapours	
	Sealing material	Upper temperature limit	Sealing material	Upper temperature limit
HP 111, HP 114	R-PTFE	230 °C	Inconel	600 °C
HP 114-C, HP 114-K3	Inconel	600 °C		
HP 111-E, HP 114-E	R-PTFE	230 °C	Inconel	450 °C
	Inconel	450 °C		
HP 112, HP 112-E, HP 112-S	R-PTFE	230 °C	Inconel	400 °C
	Inconel	400 °C		
HP 311	Inconel	600 °C	Inconel	600 °C
HP 312	Lamellar seals of metal graphite	600 °C	Lamellar seals of metal graphite	600 °C
HP 314				

The high-performance valves are suitable for use in Gas-Ex and Dust-Ex atmospheres. Depending on the seal variant used, the high-performance valves fulfil the requirements of the equipment categories 1 D or 1 DG.

15.3 Parameters

Max. relative speed: < 1.0 m·s⁻¹
 Max. torque dusts: < 125 Nm
 Max. torque gases/vapours: < 60 Nm

15.4 Description of the Supplement

Only R-PTFE or Inconel sealings are used for the high-performance valves of types HP 111, HP 112, H P114, HP 111-E, HP 112-E, HP 114-E, HP 112-S, and HP 114-C. For the high-performance valves of types HP 311, HP 312 and HP 314 only Inconel sealings or lamellar sealings of metal graphite are used. The overview of the sealings and their respective upper temperature limits given in Table 1 has been revised accordingly.

The high-performance valves of types HP-L and HP-LW are no longer subject of this EC-Type Examination.

The high-performance valve of type HP 114-K3 has been added to the scope of this EC-Type Examination.

(16) Test and Assessment Report

PP 14EXAM 10390 EG, as of 05.02.2015

PP 14EXAM 10390 EG N1, as of 04.12.2015

(17) Special Conditions for Safe Use

The high-performance valves must be grounded, i.e., the resistance to earth should be less than $10^6 \Omega$.

The maximum surface temperature of the high-performance valves depends on the temperature of the processed media. The user has to ensure that the maximum media temperature T_F does not exceed the permitted temperature limits according to the safety-relevant parameters of the gases, vapours and dusts and to the temperature limit values stated in Table 1.

The handled gases or vapours must show of the following safety-relevant data:

Ignition temperature $\geq 1.25 \times T_F$ determined according to DIN EN 14522

The handled dusts must show of the following safety-relevant data:

Ignition temperature $3/2 \times T_F$ determined according to DIN EN 50281-2-1

Smouldering temperature $\geq T_F + 75 K$ determined according to DIN EN 50281-2-1

No substances shall be used that are susceptible to ignition or explosion caused by impacts or friction (e.g. according to class 4.1 ADR); neither shall hybrid mixtures be used. Principally, the machine is not suitable for processing or dosing self-decomposing substances.

During the operation, no potential sources of ignition (e.g. glowing or burning particles, smouldering nests, foreign bodies) may ingress the high-performance valves.


If the high-performance valves are used in areas where potentially explosive atmospheres may occur, the equipment shall only be operated together with equipment that is suitable for the individual application and supplied in compliance with Directive 94/9/EC. The assembly of the high-performance valves with equipment that has not been subject of this EC-Type Examination (e.g. the drive) a separate risk assessment with regard to additional ignition hazards has to be carried out.

When selecting and erecting electrical equipment the requirements of DIN EN 60079-14 have to be observed.

In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, Germany, dated 18.01.2016
15EXAM 11253

DEKRA EXAM GmbH



Certification body



Special services unit