



Translation

**EC-Type Examination Certificate**

**- Directive 94/9/EC -**

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

**BVS 04 ATEX E 051**

- (4) **Equipment:** Solenoid type FEB \*\*\*/95
- (5) **Manufacturer:** Dr. Breit GmbH
- (6) **Address:** D - 42579 Heiligenhaus
- (7) The design and construction of this equipment and any acceptable variation thereto are specified in the schedule to this type examination certificate.
- (8) The certification body of EXAM BBG Prüf- und Zertifizier GmbH, notified body no. 0158 in accordance with Article 9 of the 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 BVS PP 04.2094 EG.
- (9) The Essential Health and Safety Requirements are assured by compliance with:
- EN 50014:1997+A1-A2 General requirements  
EN 50020:2002 Intrinsic safety 'i'
- (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 schedule 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 2G EEx ia IIC T5 /T6**  
**I M2 EEx ia I or I M2 EEx ib I**

**EXAM BBG Prüf- und Zertifizier GmbH**

Bochum, dated 17. June 2004

Signed: Dr. Jockers

Certification body

Signed: Dr. Eickhoff

Special services

(13)

Appendix to

(14)

## EC-Type Examination Certificate

**BVS 04 ATEX E 051**

(15) 15.1 Subject and type

Solenoid	type FEB ***/95
Version EEx ia I / IIC T5/T6	
two solenoids (3-wire circuit)	= 001
one solenoid	= 002
Version EEx ib I	
two solenoids (3-wire circuit)	= 003
one solenoid	= 004
Version EEx ia I	
two solenoids (3-wire circuit) *)	= 005
one solenoid *)	= 006
Version EEx ia IIC T5/T6	
two solenoids (3-wire circuit)	= 009
one solenoid	= 010
Version EEx ia IIC T5/T6	
two solenoids (3-wire circuit) *)	= 011
one solenoid *)	= 012
Version EEx ia I / EEx ib I	
two galvanically separated solenoids	= 020

\*) equipped with electronic control unit in order to reduce current consumption when in active status

### 15.2 Description

The Solenoid type FEB \*\*\*/95, providing electrical operation of valves consists of one (two) solenoid(s) (each one) fitted with safety shunts (three diodes in parallel for level of protection EEx ia I / IIC, two diodes in parallel for level of protection EEx ib I respectively).

Solenoid(s) and safety shunt(s) and - if applicable - an electronic control unit to reduce current consumption are completely embedded in casting compound.

For the connection of the external intrinsically safe supply circuit (s) a socket connector ins attached to the stainless steel enclosure of the solenoid.

According to individual application requirements the solenoids provide a rated operating voltage within the range DC 5 V to DC 24 V, a rated current consumption within the range 260 mA to 54 mA and a rated power consumption of 1,3 W.



### 15.3 Parameters

#### 15.3.1 Supply circuit

Solenoid type	Parameters			
	Voltage $U_i$	Current $I_i$	Power $P_i$	Effective internal capacitance / inductance $C_i / L_i$
FEB 002/95	DC 28 V	660 mA	2 W	negligible
FEB 001/95	2 x DC 28 V	2 x 660 mA	2 x 2 W	negligible
FEB 004/95	DC 28 V	2 A	2 W	negligible
FEB 003/95	2 x DC 28 V	2 x 2 A	2 x 2 W	negligible
FEB 006/95	DC 28 V	2 A	2 W	negligible
FEB 005/95	2 x DC 28 V	2 x 2 A	2 x 2 W	negligible
FEB 010/95	DC 28 V	660 mA	2 W	negligible
FEB 009/95	2 x DC 28 V	2 x 660 mA	2 x 2 W	negligible
FEB 012/95	DC 28 V	--	2 W	negligible
FEB 011/95	2 x DC 28 V	--	2 x 2 W	negligible
FEB 020/95 *)	2 x DC 28 V	2 x 660 mA	2 x 2 W	negligible
FEB 020/95 **)	2 x DC 28 V	2 x 2 A	2 x 2 W	negligible

\*) EEx ia I Marking

\*\*) EEx ib I Marking

15.3.2 Ambient temperature range:  $-20\text{ °C} \leq T_a \leq +70\text{ °C}$  (T5)  $+60\text{ °C}$  (T6)

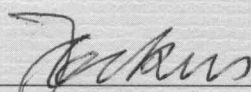
(16) Test and assessment report  
BVS PP 04.2094 EG as of 17.06.2004

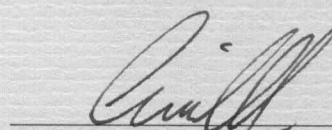
(17) Special conditions for safe use  
None

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.

44809 Bochum, 17. June 2004  
BVS-Scha/Kw A 20030146

**EXAM BBG Prüf- und Zertifizier GmbH**

  
Certification body

  
Special services