



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx BVS 15.0018 issue No.: 0 Certificate history: _____

Status: **Current**

Date of Issue: **2015-04-02** Page 1 of 4

Applicant: **Dr. Breit GmbH**
Carl-Zeiss-Straße 25
42579 Heiligenhaus
Germany

Electrical Apparatus: **Solenoid type FEB ***/95-* and FEB 020/95-****
Optional accessory:

Type of Protection: **Equipment protection by intrinsic safety "i"**

Marking: Ex ia I Mb
Ex ib I Mb
Ex ia IIC T6...T5 Gb

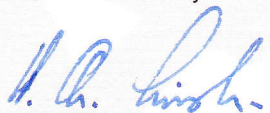
Approved for issue on behalf of the IECEx
Certification Body:

H.-Ch. Simanski

Position:

Head of Certification Body

Signature:
(for printed version)



2.4.2015

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

DEKRA EXAM GmbH
Dinnendahlstrasse 9
44809 Bochum
Germany

 **DEKRA**
DEKRA EXAM GmbH



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Manufacturer: **Dr. Breit GmbH**
Carl-Zeiss-Straße 25
42579 Heiligenhaus
Germany

Additional Manufacturing location
(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2011 Explosive atmospheres - Part 0: General requirements
Edition: 6.0

IEC 60079-11 : 2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition: 6.0

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:
[DE/BVS/ExTR15.0016/00](#)

Quality Assessment Report:

[DE/BVS/QAR14.0002/01](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

Subject and Type

See Annex

Description

The Solenoid type FEB ***/95-* and type FEB 020/95-**, 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 Ex ia I / IIC, two diodes in parallel for level of protection Ex 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 is attached to the stainless steel enclosure of the solenoid.

CONDITIONS OF CERTIFICATION: NO



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EQUIPMENT(continued):

Parameters

1 Supply circuit

Solenoid type	Parameters			
	Max. input voltage U_i	Max. input current I_i	Max. input 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-*	DC 28 V	660 mA	2 W	negligible
FEB 004/95-*	DC 28 V	2 A	2 W	negligible
FEB 003/95-*	DC 28 V	2 A	2 W	negligible
FEB 006/95-*	DC 28 V	2 A	2 W	negligible
FEB 005/95-*	DC 28 V	2 A	2 W	negligible
FEB 010/95-*	DC 28 V	660 mA	2 W	negligible
FEB 009/95-*	DC 28 V	660 mA	2W	negligible
FEB 012/95-*	DC 28 V	--	2 W	negligible
FEB 011/95-*	DC 28 V	--	2 W	negligible
FEB 020/95-*a	2 x DC 28 V	2 x 660 mA	2 x 2 W	negligible
FEB 020/95-*b	2 x DC 28 V	2 x 2 A	2 x 2 W	negligible

2 Ambient temperature range:

-20 °C T_a +70 °C (T5) /+60 °C (T6)

-50 °C T_a +70 °C (T5) /+60 °C (T6)



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Annex
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Subject and Type:

Solenoid type FEB ***/95-* and type FEB 20/95-**

Solenoid		type FEB ***/95-*	
Version Ex ia I Mb / IIC T6...T5 Gb			
two solenoids (3-wire circuit)	= 001		1: For $-20\text{ °C} \leq T_a \leq +70\text{ °C}$ (T5) / +60 °C (T6)
one solenoid	= 002		2: For $-50\text{ °C} \leq T_a \leq +70\text{ °C}$ (T5) / +60 °C (T6)
Version Ex ib I Mb			
two solenoids (3-wire circuit)	= 003		
one solenoid	= 004		
Version Ex ia I Mb			
two solenoids (3-wire circuit)	*) = 005		
one solenoid	*) = 006		
Version Ex ia IIC T6...T5 Gb			
two solenoids (3-wire circuit)	= 009		
one solenoid	= 010		
Version Ex ia IIC T6...T5 Gb			
two solenoids (3-wire circuit)	*) = 011		
one solenoid	*) = 012		

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

Solenoid type FEB 020/95-**

