



## (1) EC-TYPE-EXAMINATION CERTIFICATE (Translation)

(2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 94/9/EC**

(3) EC-type-examination Certificate Number:

**PTB 00 ATEX 2211 X**



(4) Equipment: Solenoids, type 2.52; 2.53; 2.54; 2.55

(5) Manufacturer: Eugen Seitz AG

(6) Address: Spitalstrasse 204; CH-8623 Wetzikon

(7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 9 of the Council Directive 94/9/EC 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 confidential report PTB Ex 00-20214.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

**EN 50014:1997+A1+A2**

**EN 50019:1994**

**EN 50028:1987**

(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 and construction of the specified equipment in accordance with Directive 94/9/EC. Further requirements of this Directive apply to the manufacture and supply of this equipment.

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

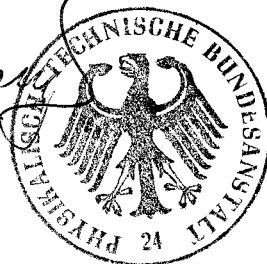
**II 2 G EEx em II T4 or T5 or T6**

Zertifizierungsstelle Explosionsschutz

Braunschweig, January 16, 2001

By order:

Dr.-Ing. U. Johannsmeyer  
Regierungsdirektor



(13)

## SCHEDULE

(14)

### EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 2211 X

(15) Description of equipment

The solenoid breaking surge voltage is limited by means of a varistor or a diode, which is subject to the type of voltage used. The solenoids are of the completely encapsulated type.

#### Electrical data

Type	2A52, 2A54	2A53, 2A55
Type of current	d.c.	d.c.
Rated voltage	6 V ... 250V	6 V ... 125 V
Rated current	0.5 A ... 0.012 A	0.5 A ... 0.024 A
Limit rating	2.8 W	2.8 W
Max. perm. ambient temperature	60 °C	60 °C
Temperature class	T6	T6
Separate installation	yes	yes

Type	2A52, 2A54	2A53, 2A55
Type of current	d.c.	d.c.
Rated voltage	6 V ... 250V	6 V ... 125 V
Rated current	0.8A ... 0.019 A	0.8 A ... 0.038 A
Limit rating	4.5 W	4.5 W
Max. perm. ambient temperature	50 °C	50 °C
Temperature class	T6	T6
Separate installation	yes	yes

Type	2A52, 2A54	2A53, 2A55
Type of current	d.c.	d.c.
Rated voltage	6 V ... 250V	6 V ... 125 V
Rated current	1.1 A ... 0.026 A	1.1 A ... 0.052 A
Limit rating	6.3 W	6.3 W
Max. perm. ambient temperature	40 °C	40 °C
Temperature class	T6	T6
Separate installation	yes	yes

Type	2A52, 2A54	2A53, 2A55
Type of current	d.c.	d.c.
Rated voltage	6 V ... 250V	6 V ... 125 V
Rated current	1 A ... 0.024 A	1 A ... 0.048 A
Limit rating	5.5 W	5.5 W
Max. perm. ambient temperature	60 °C	60 °C
Temperature class	T5	T5
Separate installation	yes	yes

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Type	2A52, 2A54	2A53, 2A55
Type of current	d.c.	d.c.
Rated voltage	6 V ... 250V	6 V ... 125 V
Rated current	1.3 A ... 0.031 A	1.3 A ... 0.062 A
Limit rating	7.2 W	7.2 W
Max. perm. ambient temperature	50 °C	50 °C
Temperature class	T5	T5
Separate installation	yes	yes

Type	2A52, 2A54	2A53, 2A55
Type of current	d.c.	d.c.
Rated voltage	6 V ... 250V	6 V ... 125 V
Rated current	1.7 A ... 0.040 A	1.7 A ... 0.080 A
Limit rating	9.4 W	9.4 W
Max. perm. ambient temperature	40 °C	40 °C
Temperature class	T5	T5
Separate installation	yes	yes

Type	2A52, 2A54	2A53, 2A55
Type of current	d.c.	d.c.
Rated voltage	6 V ... 250V	6 V ... 125 V
Rated current	1.6 A ... 0.038 A	1.6 A ... 0.076 A
Limit rating	8.5 W	8.5 W
Max. perm. ambient temperature	50 °C	50 °C
Temperature class	T4	T4
Separate installation	yes	yes

Type	2A52, 2A54	2A53, 2A55
Type of current	d.c.	d.c.
Rated voltage	6 V ... 250V	6 V ... 125 V
Rated current	2.4 A ... 0.057 A	2.4 A ... 0.115 A
Limit rating	12.8 W	12.8 W
Max. perm. ambient temperature	40 °C	40 °C
Temperature class	T4	T4
Separate installation	yes	yes

Type	2C52, 2C53, 2C54, 2C55
Type of current	alternating current
Rated voltage	12 V ... 250 V
Rated current	0.330 A ... 0.016 A
Limit rating	2.5 W
Max. perm. ambient temperature	60 °C
Temperature class	T6
Frequency	48 Hz ... 62 Hz
Separate installation	yes

## SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 2211 X

Type	2C52, 2C53, 2C54, 2C55
Type of current	alternating current
Rated voltage	12 V ... 250 V
Rated current	0.530 A ... 0.025 A
Limit rating	4.1 W
Max. perm. ambient temperature	50 °C
Temperature class	T6
Frequency	48 Hz ... 62 Hz
Separate installation	yes

Type	2C52, 2C53, 2C54, 2C55
Type of current	alternating current
Rated voltage	12 V ... 250 V
Rated current	0.730 A ... 0.035 A
Limit rating	5.8 W
Max. perm. ambient temperature	40 °C
Temperature class	T6
Frequency	48 Hz ... 62 Hz
Separate installation	yes

Type	2C52, 2C53, 2C54, 2C55
Type of current	alternating current
Rated voltage	12 V ... 250 V
Rated current	0.660 A ... 0.032 A
Limit rating	5 W
Max. perm. ambient temperature	60 °C
Temperature class	T5
Frequency	48 Hz ... 62 Hz
Separate installation	yes

Type	2C52, 2C53, 2C54, 2C55
Type of current	alternating current
Rated voltage	12 V ... 250 V
Rated current	0.870 A ... 0.042 A
Limit rating	6.5 W
Max. perm. ambient temperature	50 °C
Temperature class	T5
Frequency	48 Hz ... 62 Hz
Separate installation	yes

Type	2C52, 2C53, 2C54, 2C55
Type of current	alternating current
Rated voltage	12 V ... 250 V
Rated current	1.1 A ... 0.054 A
Limit rating	8.5 W
Max. perm. ambient temperature	40 °C
Temperature class	T5
Frequency	48 Hz ... 62 Hz
Separate installation	yes

Type	2C52, 2C53, 2C54, 2C55
Type of current	alternating current
Rated voltage	12 V ... 250 V
Rated current	1.1 A ... 0.051 A
Limit rating	7.7 W
Max. perm. ambient temperature	50 °C
Temperature class	T4
Frequency	48 Hz ... 62 Hz
Separate installation	yes

Type	2C52, 2C53, 2C54, 2C55
Type of current	alternating current
Rated voltage	12 V ... 250 V
Rated current	1.5 A ... 0.072 A
Limit rating	11 W
Max. perm. ambient temperature	40 °C
Temperature class	T4
Frequency	48 Hz ... 62 Hz
Separate installation	yes

Type	2E52, 2E54	2E53, 2E55
Type of current	d.c.	d.c.
Rated voltage	12 V ... 250V	12 V ... 125 V
Rated current	0.250 A ... 0.012 A	0.250 A ... 0.024 A
Limit rating	2.8 W	2.8 W
Max. perm. ambient temperature	60 °C	60 °C
Temperature class	T6	T6
Separate installation	yes	yes

Type	2E52, 2E54	2E53, 2E55
Type of current	d.c.	d.c.
Rated voltage	12 V ... 250V	12 V ... 125 V
Rated current	0.400 A ... 0.019 A	0.400 A ... 0.038 A
Limit rating	4.5 W	4.5 W
Max. perm. ambient temperature	50 °C	50 °C
Temperature class	T6	T6
Separate installation	yes	yes

Type	2E52, 2E54	2E53, 2E55
Type of current	d.c.	d.c.
Rated voltage	12 V ... 250V	12 V ... 125 V
Rated current	0.550 A ... 0.026 A	0.550 A ... 0.052 A
Limit rating	6.3 W	6.3 W
Max. perm. ambient temperature	40 °C	40 °C
Temperature class	T6	T6
Separate installation	yes	yes

Type	2E52, 2E54	2E53, 2E55
Type of current	d.c.	d.c.
Rated voltage	12 V ... 250V	12 V ... 125 V
Rated current	0.500 A ... 0.024 A	0.500 A ... 0.048 A
Limit rating	5.5 W	5.5 W
Max. perm. ambient temperature	60 °C	60 °C
Temperature class	T5	T5
Separate installation	yes	yes

Type	2E52, 2E54	2E53, 2E55
Type of current	d.c.	d.c.
Rated voltage	12 V ... 250V	12 V ... 125 V
Rated current	0.650 A ... 0.031 A	0.650 A ... 0.062 A
Limit rating	7.2 W	7.2 W
Max. perm. ambient temperature	50 °C	50 °C
Temperature class	T5	T5
Separate installation	yes	yes

Type	2E52, 2E54	2E53, 2E55
Type of current	d.c.	d.c.
Rated voltage	12 V ... 250V	12 V ... 125 V
Rated current	0.850 A ... 0.040 A	0.850 A ... 0.080 A
Limit rating	9.4 W	9.4 W
Max. perm. ambient temperature	40 °C	40 °C
Temperature class	T5	T5
Separate installation	yes	yes

Type	2E52, 2E54	2E53, 2E55
Type of current	d.c.	d.c.
Rated voltage	12 V ... 250V	12 V ... 125 V
Rated current	0.800 A ... 0.038 A	0.800 A ... 0.076 A
Limit rating	8.5 W	8.5 W
Max. perm. ambient temperature	50 °C	50 °C
Temperature class	T4	T4
Separate installation	yes	yes

Type	2E52, 2E54	2E53, 2E55
Type of current	d.c.	d.c.
Rated voltage	12 V ... 250V	12 V ... 125 V
Rated current	1.2 A ... 0.057 A	1.2 A ... 0.115 A
Limit rating	12.8 W	12.8 W
Max. perm. ambient temperature	40 °C	40 °C
Temperature class	T4	T4
Separate installation	yes	yes

## SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 2211 X

Type	2F52, 2F54	2F53, 2F55
Type of current	universal current	universal current
Rated voltage	12 V ... 250 V	12 V ... 125 V
Rated current	0.850 A ... 0.040 A	0.850 A ... 0.080 A
Limit rating	9.4 W	9.4 W
Max. perm. ambient temperature	40 °C	40 °C
Temperature class	T5	T5
Frequency	40 Hz ... 65 Hz	40 Hz ... 65 Hz
Separate installation	yes	yes
Type	2F52, 2F54	2F53, 2F55
Type of current	universal current	universal current
Rated voltage	12 V ... 250 V	12 V ... 125 V
Rated current	0.650 A ... 0.031 A	0.650 A ... 0.062 A
Limit rating	7.2 W	7.2 W
Max. perm. ambient temperature	50 °C	50 °C
Temperature class	T5	T5
Frequency	40 Hz ... 65 Hz	40 Hz ... 65 Hz
Separate installation	yes	yes
Type	2F52, 2F54	2F53, 2F55
Type of current	universal current	universal current
Rated voltage	12 V ... 250 V	12 V ... 125 V
Rated current	0.500 A ... 0.024 A	0.500 A ... 0.048 A
Limit rating	5.5 W	5.5 W
Max. perm. ambient temperature	60 °C	60 °C
Temperature class	T5	T5
Frequency	40 Hz ... 65 Hz	40 Hz ... 65 Hz
Separate installation	yes	yes
Type	2F52, 2F54	2F53, 2F55
Type of current	universal current	universal current
Rated voltage	12 V ... 250 V	12 V ... 125 V
Rated current	0.250 A ... 0.012 A	0.250 A ... 0.024 A
Limit rating	2.8 W	2.8 W
Max. perm. ambient temperature	60 °C	60 °C
Temperature class	T6	T6
Frequency	40 Hz ... 65 Hz	40 Hz ... 65 Hz
Separate installation	yes	yes
Type	2F52, 2F54	2F53, 2F55
Type of current	universal current	universal current
Rated voltage	12 V ... 250 V	12 V ... 125 V
Rated current	0.400 A ... 0.019 A	0.400 A ... 0.038 A
Limit rating	4.5 W	4.5 W
Max. perm. ambient temperature	50 °C	50 °C
Temperature class	T6	T6
Frequency	40 Hz ... 65 Hz	40 Hz ... 65 Hz
Separate installation	yes	yes

## SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 2211 X

Type	2F52, 2F54	2F53, 2F55
Type of current	universal current	universal current
Rated voltage	12 V ... 250 V	12 V ... 125 V
Rated current	0.550 A ... 0.026 A	0.550 A ... 0.052 A
Limit rating	6.3 W	6.3 W
Max. perm. ambient temperature	40 °C	40 °C
Temperature class	T6	T6
Frequency	40 Hz ... 65 Hz	40 Hz ... 65 Hz
Separate installation	yes	yes

Type	2F52, 2F54	2F53, 2F55
Type of current	universal current	universal current
Rated voltage	12 V ... 250 V	12 V ... 125 V
Rated current	0.800 A ... 0.038 A	0.800 A ... 0.076 A
Limit rating	8.5 W	8.5 W
Max. perm. ambient temperature	50 °C	50 °C
Temperature class	T4	T4
Frequency	40 Hz ... 65 Hz	40 Hz ... 65 Hz
Separate installation	yes	yes

Type	2F52, 2F54	2F53, 2F55
Type of current	universal current	universal current
Rated voltage	12 V ... 250 V	12 V ... 125 V
Rated current	1.2 A ... 0.057 A	1.2 A ... 0.115 A
Limit rating	12.8 W	12.8 W
Max. perm. ambient temperature	40 °C	40 °C
Temperature class	T4	T4
Frequency	40 Hz ... 65 Hz	40 Hz ... 65 Hz
Separate installation	yes	yes

(16) Test report PTB Ex 00-20214

(17) Special conditions for safe use

1. Each magnet of type 2A52, 2C52, 2E52, 2F52, 2A54, 2C54, 2E54 and 2F54 has to be provided on its line side with a circuit breaker as a short-circuit protection that meets the magnet current rating (max.  $3xI_B$  in accordance with DIN 41571 or IEC 60127), or a motor protecting switch with short-circuit and thermal instantaneous tripping function (adjusted to current rated). This circuit breaker may be accommodated in the supply unit or it has otherwise to be separately installed on the line side. The rated voltage of the circuit breaker has to be identical with or greater than the current rating specified for the magnet. The breaking capacity of the fuse link has to be identical with or greater than the maximum short-circuit current expected for the respective location (normally 1500 A).
2. For all magnets of the d.c. type, the max. permissible ripple content is 20 %.




3. Connecting cables made from silicone (or containing silicone) and cables that are not scratch proof shall be protected against mechanical damage (e.g. an edge-protected interrupted conduit system).
4. The solenoids of types 2A53, 2C53, 2E53, 2F53, 2A55, 2C55, 2E55 and 2F55 shall carry a note on their name plates indicating that the circuit breaker provided has a breaking capacity of just 35 A. This note may be dispensed with if resistors are integrated in series with the circuit breaker.
5. The solenoids of types 2A53, 2C53, 3E53, 2F53, 2A55, 2C55, 2E55 and 2F55, which have a rated current smaller than 16.7 mA will not be provided with a circuit breaker. These types have to carry an additional note (adapted circuit breaker in accordance with DIN 41571 or IEC 60127 to be connected on the line side; max. 0.032 A or 0.05 A).
6. The value of the circuit breaker to be connected on the line side will be specified for each solenoid on an adhesive label provided by the manufacturer of the solenoid.
7. For model 54 and 55 solenoids, the cable length must not exceed a maximum of 100 m. The heads of fixing screws will additionally be sealed with resin to prevent cable from becoming loose.

(18) Essential health and safety requirements

Covered by the above standards.

Zertifizierungsstelle Explosionsschutz  
By order:

  
Dr.-Ing. U. Johannsmeyer  
Regierungsdirektor



Braunschweig, January 16, 2001

English Translation

## 1<sup>st</sup> SUPPLEMENT

according to Directive 94/9/EG Annex III Point 6

to EC-Type Examination Certificate PTB 00 ATEX 2211 X

Equipment: Solenoids type 2.52; 2.53; 2.54; 2.55

Marking:  II 2 G EEx em T4 or T5 or T6

Manufacturer: Eugen Seitz AG

Address: Spitalstrasse 204  
8623 Wetzikon 3, Switzerland

### Description of the supplements and changes

For the solenoids 2A52 and 2F52 alternatively the flat terminal connection strips with the part certificate PTB No. Ex-85.B.3112 U may be used. Instead of the flat terminal connection strip "2 DIN 46281" a printed circuit board can be inserted. In future the build in fuse in the solenoids 2.53 and 2.55 will be directly soldered into the printed circuit board without fuse carrier. Instead of the fuse TR5 from the company Wickmann alternatively the fuse MST 250 from the company Schurter is inserted. The printed circuit boards alternatively are treated with solder resist.

Test Report PTB Ex 03-22328

Test laboratory explosion protection  
By order:

Braunschweig, 06. February 2003


Dr.-Ing. u. Johannsmeyer  
Regierungsdirektor

English Translation

## 2<sup>nd</sup> SUPPLEMENT

according to Directive 94/9/EC Annex III Point 6

### to EC-Type Examination Certificate PTB 00 ATEX 2211 X

Equipment: Solenoids type 2.52; 2.53; 2.54; 2.55  
Marking:  II 2 G EEx em T4, T5 or T6  
Manufacturer: Eugen Seitz AG  
Address: Spitalstrasse 204, 8623 Wetzikon, Switzerland

#### Description of the supplements and changes

Solenoids type 2.52, 2.53, 2.54, 2.55 (PTB 00 ATEX 2211 X) may be used in such areas where it is expected that a potentially explosive atmosphere of dust/air-mixtures occasionally occurs.

Marking for dust area:

 II 2 D IP 65 T 80 °C, T 95 °C or T 130 °C

Test Report PTB Ex 03-23340ST

Test laboratory explosion protection  
By order:

Braunschweig, 31. October 2003

Dr.-Ing. U. Johannsmeyer  
Regierungsdirektor



English Translation

## 3<sup>rd</sup> SUPPLEMENT

according to Directive 94/9/EG Annex III Point 6

### to EC-Type-Examination Certificate PTB 00 ATEX 2211 X

Equipment: Solenoids type 2.52; 2.53; 2.54; 2.55

Marking:  II 2 G Ex emb T4/T5/T6 or  
 II 2 D Ex tD A21 IP65 T 80 °C, T 95 °C or T 130 °C

Manufacturer: Eugen Seitz AG

Address: Spitalstrasse 204, 8623 Wetzikon, Switzerland

#### Description of the supplements and changes

Object of this supplement is the expertise of the solenoids type 2.52; 2.53; 2.54; 2.55 according to the requirements of the series of standards EN 60079 and EN 61241. The solenoids are manufactured without any changes.

The electrical data, the special conditions and all other statements in the EC-Type-Examination Certificate are valid unchanged for this third supplement.

The marking of the solenoids may also be made according to the following standards.

#### Used standards

**EN 60079-0:2006**

**EN 60079-7:2003  
EN 60079-18:2004**

**EN61241-0:2006  
EN61241-1:2004**

Test Report PTB Ex 07-27192

Zertifizierungsstelle Explosionsschutz  
By order:

Braunschweig, 11. July 2007

Dr.-Ing. U. Johannsmeyer  
Direktor und Professor

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