



Prüf- und Zertifizierungsstelle

ZELM Ex



(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:

ZELM 04 ATEX 0209 X

(4) Equipment: **Electrical Part Turn Actuators Contrac RHDE....**

(5) Manufacturer: **ABB Automation Products GmbH**

(6) Address: **Schillerstrasse 72, 32425 Minden, Deutschland**

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

(8) The Prüf- und Zertifizierungsstelle ZELM Ex, notified body No. 0820 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 ZELM Ex 0530617460.

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

EN 50 014: 1997+A1+A2

EN 50 018: 2000

EN 50 019 :2000

EN 50 020: 2002

EN 50 281-1-1: 1998

EN 13 463-1 :2001

prEN 13 463-5: 2003

prEN 13 463-8: 2003

(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 or protective system in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this Certificate.

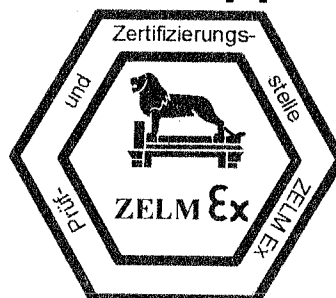
(12) The marking of the equipment shall include the following:



II 2 GD ck EEx ed [ib] ib IIB T4 bzw. IP6x T130°C

Zertifizierungsstelle ZELM Ex


Dipl.-Ing. Harald Zelm



Braunschweig, June 17, 2004

Page 1/3

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ZELM Ex



(13)

SCHEDULE

(14)

EC-TYPE-EXAMINATION CERTIFICATE ZELM 04 ATEX 0209 X

(15) Description of equipment

The electromechanical regulating part turn actuators, consisting of the following main components: motor, gear box, position indicator incl. evaluation electronic and a connection box are constructed for the moving of valves, shutters, ball valves and other mechanical actuators.

Dependent on the used force, resp. torque different motor – gear box combinations are inserted. The motor of the variable speed drive may only be used with the associated frequency converter and the associated motor ptc thermistor temperature monitoring unit, having a separate EC – type – examination Certificate.

The part turn actuators are designed for a maximum ambient temperature range of -25°C to $+60^{\circ}\text{C}$, resp. -30°C to 40°C . The each appropriate ambient temperature range is specified on the type plate.

The type designation of the equipment is:

RHDE250-10;	RHDE500-10
RHDE800-10;	RHDE1250-12
RHDE2500-10;	RHDE2500-25
RHDE4000-10;	RHDE4000-40

Data

Part Turn Actuators Contrac:

Nominal rating:

Supply voltage: 115 V (94 V to 127 V) 47,5 to 63Hz

associated nominal current: 1,8 A to 5,2 A depending on design
resp.

Supply voltage: 230 V (190 V to 253 V) 47,5 to 63 Hz

associated nominal current: 0,9 A to 10 A depending on design
The allocation is made by the labelling, resp. the instruction manual.

Degree of IP protection: minimum IP 6x according to EN 60529:1991

(16) Report No.

ZELM Ex 1250315291



Prüf- und Zertifizierungsstelle ZELM Ex



Schedule to EC-TYPE-EXAMINATION CERTIFICATE ZELM 04 ATEX 0209 X

(17) Special conditions for safe use

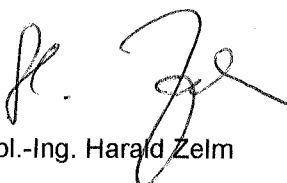
1. The electrical connexion of the part turn actuators may only be realised by the labelled, resp. in the instruction manual mentioned frequency converter.
2. The electrical and mechanical installation instructions have to be observed. Particularly the different ambient temperature ranges of the part turn actuators as well as the associated frequency converter and ptc thermistor temperature monitor unit components.
3. The construction of the system components may only be made by consideration of the wiring plan included in the instruction manual.
4. The electrical part turn actuators may only be used in combination with the motor temperature monitoring unit SD 241B. Alternatively the temperature monitoring unit may be conveniently used in combination with a separat EC – type – examination Certificate if authorised by the manufacturer.
5. The instruction manual has to be observed in particluar the stipulations made concerning the maximum thickness of dust layers in explosion hazardous areas of category 2D.
6. If the equipment is used in dust atmospheres it has to be secured that the constructive default level of protection IP 6x for the housing and the cable glands is maintained.

(18) Essential Health and Safety Requirements

Fulfilled by standards.

Zertifizierungsstelle ZELM Ex

Braunschweig, June 17, 2004


Dipl.-Ing. Harald Zelm





Prüf- und Zertifizierungsstelle

ZELM Ex



1. Supplement

(Supplement according to EC-Directive 94/9 Annex III letter 6)

to EC-type-examination Certificate

ZELM 04 ATEX 0209 X

Equipment: **Electrical Part Turn Actuators Contrac RHDE....**
Manufacturer: **ABB Automation Products GmbH**
Address: **Schillerstrasse 72, 32425 Minden, Germany**

Description of supplement

The changings refer to the extension of the model range by the types RHDE8000-15, RHDE8000-80 and RHDE16000-30. The construction of the controller unit remain unchanged. The gear box and the motors were changed. The special conditions remain unchanged. The electrical data is:

Data

Part Turn Actuators Contrac:

Nominal rating:

Supply voltage:

115 V (94 V to 127 V)

47,5 to 63Hz

associated nominal current:
resp.

4,0 A RHDE8000-80

Supply voltage.

230 V (190 V to 253 V)

47,5 to 63 Hz

associated nominal current:

2,0 A to 10,2 A depending on design

The allocation is made by the labelling, resp. the instruction manual.

Degree of IP protection:

minimum IP 6x according to EN 60529:1991

Report No.

ZELM Ex 0800415356

Special conditions for safe use

not applicable

Essential Health and Safety Requirements

The essential health and safety requirements are furthermore fulfilled by accordance to the listet standards in the EC – type – examination Certificate.

Zertifizierungsstelle ZELM Ex



Braunschweig, June 23, 2004


Dipl.-Ing. Harald Zelm

Page 1/1

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2. Supplement

(Supplement according to EC-Directive 94/9 Annex III letter 6)

to EC-type-examination Certificate

ZELM 04 ATEX 0209 X

Equipment: Electrical Part Turn Actuators Contrac RHDE...-..
Manufacturer: ABB Automation Products GmbH
Address: Schillerstrasse 72, 32425 Minden, Germany

Description of supplement

The changings refer to the extension of the position measuring system by an alternativ sensor. The construction of the controller unit and the position measuring system remain unchanged. The special conditions remain unchanged and also apply to this second supplement. The electrical and mechanical data remain unchanged.

Report No.

ZELM Ex 0190511394

Essential Health and Safety Requirements

The essential health and safety requirements are furthermore fulfilled by accordance to the listet standards in the EC – type – examination Certificate.

Zertifizierungsstelle ZELM Ex



Braunschweig, May 4, 2005


Dipl.-Ing. Harald Zelm

Page 1/1

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Prüf- und Zertifizierungsstelle

ZELM Ex



3. Supplement

(Supplement according to EC-Directive 94/9 Annex III letter 6)

to EC-type-examination Certificate

ZELM 04 ATEX 0209 X

Equipment: **Electrical Part Turn Actuators Contrac RHDE....**
Manufacturer: **ABB Automation Products GmbH**
Address: **Schillerstrasse 72, 32425 Minden, Germany**

Description of supplement

The Contrac part turn actuator series is supplemented by a completely changed mechanical construction. Instead of controlling a part turn actuator the electronic controls a linear actuator. This drives transform a rotating movement into a linear movement by a ball spindle. The movement is absorbed by internal stops. The linear actuators are available in two different positioning lengths, 100 mm RSDE10 / 20, resp. 120 mm RSDE50 and 300 mm. The construction of the controlling unit remain unchanged, the adaptations are realised by software modifications.

The linear actuator is constructed for a maximum ambient temperature range of -20°C to $+60^{\circ}\text{C}$.

The type marking of the equipment is:

**RSDE10-5;
RSDE10-10;
RSDE20-5;
RSDE20-7,5;
RSDE50-5;
RSDE50-10**

The data and the special conditions for safe use of the previous actuators remain unchanged. For the actuators mentioned above the following specifications apply:

Data

Part Turn Actuators Contrac:

Nominal rating:

Supply voltage: 115 V (94 V to 127 V) 47,5 to 63 Hz
associated nominal current: 3,4 A to 4,8 A depending on design, except RSDE50-10
resp.

Supply voltage: 230 V (190 V to 253 V) 47,5 to 63 Hz
associated nominal current: 1,7 A to 6,4 A depending on design
The allocation is made by the labelling, resp. the instruction manual.

Degree of IP protection: minimum IP 6x according to EN 60529:1991



Prüf- und Zertifizierungsstelle ZELM Ex



3. Supplement to EC – type examination Certificate ZELM 04 ATEX 0209 X

Report No.

ZELM Ex 1360411355

Special conditions for safe use

The special conditions for safe use of the EC – type – examination Certificate ZELM 04 ATEX 0209 X remain unchanged. For the linear actuators examined in this supplement the special conditions for safe use are extended by the following points:


7. At the contacting point between actuator and the driven element maximum temperatures of 100°C are allowed. If the linear actuator is used under such conditions, the service intervals for the sealings in that area have to be reduced adequately. The specifications made in the instruction manual shall be considered.
8. If it is not clear, whether the real vibration stress falls below the proven vibrations stress (see instruction manual), the service intervalls shall be reduced adequately. Not allowed is the assambly in horizontal position if vibrations are present. Possible is the isolation of the linear actuators from the vibration source by taking adequate measures. Are those measures realised, the service intervals mentioned in the instruction manual shall be retained.

Essential Health and Safety Requirements

The essential health and safety requirements are furthermore fulfilled by accordance to the listet standards in the EC – type – examination Certificate.

Zertifizierungsstelle ZELM Ex

Braunschweig, May 4, 2005


Dipl.-Ing. Harald Zelm





Prüf- und Zertifizierungsstelle

ZELM Ex



4. Supplement

(Supplement according to EC-Directive 94/9 Annex III letter 6)

to EC-type-examination Certificate

ZELM 04 ATEX 0209 X

Equipment: **Electrical Part Turn Actuators Contrac RHDE....**
Manufacturer: **ABB Automation Products GmbH**
Address: **Schillerstrasse 72, 32425 Minden, Germany**

Description of supplement

The hitherto existing part turn actuators of the types RHD250, RHDE500/800 and the linear actuators RSDE10/20 are complemented by changed materials in the gear box. The previously idealized assumed advantage factors were replaced by measured ones. While introducing the new materials some gear boxes have been modified. Furthermore arised some changes regarding the maximum allowable pivoting range, resulting of measurements made in different pivoting ranges of the part turn actuators. The data of the previous actuators remain unchanged.

Report No.

ZELM Ex 0360611480

Special conditions for safe use

The spezial conditions for safe use mentioned in the EC – type – examination Certificate ZELM 04 ATEX 0209 X remain unchanged. The special conditions for safe used for the part turn actuators are extended by the following point:

9. The pivoting range reaches from 35° to 140°.


Essential Health and Safety Requirements

The essential Health and Safety Requirements are further met by concordance with the standards scheduled in the EC – type – examination Certificate.

Zertifizierungsstelle **ZELM Ex**



Braunschweig, 6th September, 2006

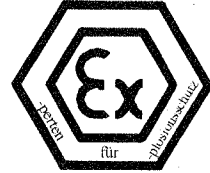

Dipl.-Ing. Harald Zelm

Page 1/1



Prüf- und Zertifizierungsstelle

ZELM Ex



5. Supplement

(Supplement according to EC-Directive 94/9 Annex III letter 6)

to EC-type-examination Certificate

ZELM 04 ATEX 0209 X

Equipment: **Electrical Part Turn Actuators Contrac RHDE....**
Manufacturer: **ABB Automation Products GmbH**
Address: **Schillerstrasse 72, 32425 Minden, Germany**

Description of supplement

The hitherto existing part turn actuators of the types RHDE1250/2500, RHDE4000 and the linear actuators RSDE50 are complemented by changed materials in the gear box. The previously idealized assumed advantage factors were replaced by measured ones. While introducing the new materials some gearbox parts have been modified. The connection options for the internal heating were changed. In the operating instructions the option of using different output elements which can replace the hitherto existing pre-assembled lever were added.

Report No.

ZELM Ex 0370611552

Special conditions for safe use

The technical data of the EC – type – examination Certificate ZELM 04 ATEX 0209 X and the existing supplements remain unchanged. The special conditions for safe use for the part turn and linear actuators are extended by the following points:

10. The operating instructions have to be observed. In particular the details concerning electrostatic charge. Cleaning shall only be performed with a wet cloth. Because of a possible inadmissible electrostatic charge of the equipment the effective influence of high voltage sources shall be avoided.
11. In case of using alternative output elements the information given in the operating instructions shall be observed.

Essential Health and Safety Requirements

The essential Health and Safety Requirements are further met by concordance with the standards mentioned in the EC – type – examination Certificate.

Zertifizierungsstelle ZELM Ex



Braunschweig, 19th September, 2007


Dipl.-Ing. Harald Zelm

Page 1/1

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6. Supplement

(Supplement according to EC-Directive 94/9 Annex III letter 6)

ZELM ex

to EC-type-examination Certificate

ZELM 04 ATEX 0209 X

Equipment: **Electrical Part Turn Actuators Contrac RHDE.... and
Electrical Linear Actuators Contrac RSDE..-**

Manufacturer: **ABB Automation Products GmbH**

Address: **Schillerstrasse 72, 32425 Minden, Germany**

Description of supplement

In the course of this 6. supplement some small internal changes at the actuators, an alternative circuit for the electrical heating of the electronics and a plastic cover which was added within the adaptation of the Directive EC/2006/42 where considered. The compliance with the actual standards was checked and the according modification of the marking was also done within this 6. Supplement.

The marking of the device changes as follows:



**II 2 G ck Ex d e [ib] ib IIB T4 Gb
II 2 D ck Ex tb IIIC T130 °C**

There was a mistake with the wrong named model type RSDE50-5 in the 3. Supplement which is corrected within this supplement.

The type designations for the part turn actuators are:

RHDE250-10;	RHDE500-10;	RHDE800-10;	RHDE1250-12;
RHDE2500-10;	RHDE2500-25;	RHDE4000-10;	RHDE4000-40;
RHDE8000-15;	RHDE8000-80;	RHDE16000-30	

The type designations for the linear actuators are:

RSDE10-5;	RSDE10-10;	RSDE20-5;	RSDE20-7,5;
RSDE50-3;	RSDE50-10;		

The electrical data and all technical data according the EC-type-examination certificate ZELM 04 ATEX 0209 X including the supplements 1 to 5 remain unchanged, and are also valid for this 6 Supplement.

6. Supplement

to EC-type examination certificate ZELM 04 ATEX 0209 X

ZELM ex

The „special conditions for safe use“ were extended as followed:

12. The minimum fill level under consideration of the permitted mounting orientation has to be considered according the manual. Only permitted oil according to the manual must be used. The maintenance intervals must be maintained.

The special conditions for safe use 1- 11 of the EC-type-examination certificate remain unchanged, and are also valid further on.

The electrical part turn actuators Contrac RDHE...- and the electrical linear actuators Contrac RSDE...- may be manufactured in future also in consideration of this 6. Supplement.

Report No.

ZELM Ex 2080811882

Essential Health and Safety Requirements

The essential health and safety requirements are still fulfilled by compliance with the following Standards:

EN 60079-0:2009
EN 60079-11:2007
EN 13463-1:2009

EN 60079-1:2007
EN 60079-31:2009
EN 13463-5:2003

EN 60079-7:2007

EN 13463-8:2003

Braunschweig, 2011-12-16

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stelle**



**Zertifizierungsstelle ZELM ex
Dipl.-Ing. Harald Zelm**

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Sheet 2 of 2

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