Certificate

(1) EC Type Examination Certificate

(2) Equipment or protective system intended for use in potentially explosive atmospheres – Directive 94/9/EC

(3) TÜV-A 13ATEX0006X

(4) Equipment: Rotary actuator ex(r)CM03

(5) Applicant: Schiebel Antriebstechnik GmbH

(6) Address: 1230 Wien; Josef Benc-Gasse 4

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

(8) TÜV AUSTRIA SERVICES GMBH, notified body number 0408 in accordance with article 9 of Directive 94/9/EC of the European Parliament and Council of 23 March 1994, certifies that this equipment or protective system has been found to comply with the design and construction of equipment and protective system intended for use in potentially explosive atmospheres, given in Annex II of the Directive.
The examination and test results are recorded in confidential report 2013-ET/PZW-EX-0-000305.

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

EN 60079-0:2009	EN 60079-1:2007	EN 60079-7:2007

(10) If the sign X is placed after the certificate number, it indicates that the equipment or protective system 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 with 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 or protective system shall include the following:

II 2 G Ex de IIC T4 oder T6 Gb

17.10.2013
Date of issue

Dipl.-Ing. Kurt Mayerhofer
Certification representative

End of validity

(13) # SCHEDULE

(14) EC Type Examination Certificate TÜV-A 13ATEX0006X

(15) **Description of equipment**

The actuator consists of a flameproof protected main compartment with built-in electric and main electronic components (motor, control unit, frequency converter). This enclosure has a cover with operating elements and display for local operating and state readout. The motor shaft and , sensor shaft extend from the control box into the gearbox. Two cables bushing in the separating wall connect electrically the flameproof protected box ("d") with the terminal box in increased safety ("e") protection type. The terminal box contains the explosion proof cable terminals and a mounting wall for up to 3 explosion proof cable glands. The terminal box is closed with a water proof sealed cover.

Type variations

Typ ex (r) CM03 .. ....

	Explosion - proof versions
	Only for versions with control operating mode (S4)
	Compact multiturn versions
	Product class 32Nm
A, AM	Output drive A/Am with stem nut
B, B1, BSo	Output drive B, B1, B2 with plug sleeve
C, CSo	Output drive C with claw coupling
D, Do	Output drive D, DO free shaft or two shafts
E, B3,ESo	Output drive E, B3, ESo with bore & keyway
Edo	Output drive Edo with bore & keyway on bottom and free shaft with keyway on top
X	Without output drive
XTR	extended temperature range (acc. to temperature class)
ER	position feedback signal - 0/4..20mA
SR	Positioner - 0/4..20mA
PID	PID positioner for 2 inputs - 0/4..20mA
DP1	Profibus DP interface - 1 channel
DP2	Profibus DP interface - 2 channel (redundant design)
CTVS	Isolating transformer for galvanic separation of the 0/4..20mA position feedback signal
CTVR	Isolating transformer for galvanic separation of the 0/4-20mA positioner signal
KP	parameterization of the binary inputs and outputs different as the basic configuration

RP	Relay PCB
ID	System identification (e.g. Tag.No.) on the display of the integrated control
AP	Programming of a torque characterization curve in reference to the displacement and torque of the valve
IP68	increased mechanical degree of protection IP68
DS	double sealed
T6	T6 temperature class

Temperature class: T4 or T6

General standard temperature class **T4**.
Ambient temperature –20°C to +40°C or -40°C to +60°C
The protection device / temperature limiter S-125 has the response temperature of **130°C**.

Special designs with temperature class **T6** are possible.
Ambient temperature –20°C to +40°C or -40°C to +40°C
The protection device / temperature limiter SF76E has the response temperature of **76°C**.

Electrical data

Supply voltage U_{AC} / U_{DC}	90 – 240 VAC 50-60Hz/100 – 200 VDC ±10%	
	230V	115V
Nominal power $P_{n30\%}$	235W	238W
Nominal power $P_{n50\%}$	334W	343W
Nominal current $I_{n30\%}$	1,04A	2,11A
Nominal current $I_{n50\%}$	1,47A	3,02A
Supply voltage alternative U_n	20...30VDC	
Nominal voltage U_n	24V	
Nominal current $I_{n30\%}$	4,6A	
Nominal current $I_{n50\%}$	6,8A	
Control operating mode EN60034-1	S2 – 15min	
Control operating mode EN60034-1	S4 – 1200c/h – 40%ED	
Ambient temperature T_{amb} (standard T4/T6):	-20°C to +40°C	
Ambient temperature T_{amb} (extended T4):	-40°C to +60°C	Additional marking XTR
Ambient temperature T_{amb} (standard T4/T6):	-40°C to +40°C	Additional marking T6 XTR
Degree of protection:	IP 54	

- Nominal power P_n30%, nominal current I_n30% related to maximal revolutions per minute and 30% of nominal torque, acc. to EN15714-2
- Nominal power P_n50%, nominal current I_n50% related to maximal revolutions per minute and 50% of nominal torque

(16) **Test report**

2013-ET/PZW-EX-0-000305

(17) **Special conditions**

(17.1) The yield stress of the screws for the flameproof enclosure must exceed 400 N/mm²

(17.2) For some product versions (depending on built-in components: heating up, electric capacity) is required a following warning marking acc. to EN 60079-0, 29.11 a), subjected to the delay before opening the enclosure after de-energizing:

WARNING – AFTER DE-ENERGIZING, DELAY 5 MINUTES BEFORE OPENING!

(17.3) On demand can the manufacturer apply any required combination of explosion proof cable glands, cable terminals and bushing according to product documentation. It must be secured that the creepage distances and air clearances comply with the standard requirements and that the terminals are accessible and there is sufficient mounting space inside the terminal compartment.

Routine test

The test pressure for routine tests is 16,7bar. The reference pressure is <11,1bar.

(18) **Basic safety and health requirement**

Covered by application of above mentioned standards.
No further requirements.

(1) # 1. Ergänzung zu EG-Baumusterprüfbescheinigung

gemäß Richtlinie 94/9/EG Anhang III Ziffer 6

(2) Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen - **Richtlinie 94/9/EG**

(3) TÜV-A 13ATEX0006X

(4) Gerät: Stellantrieb mit Failsafe-funktion ex(r)CM03 FS

(5) Hersteller: Schiebel Antriebstechnik GmbH

(6) Anschrift: 1230 Wien; Josef Benc-Gasse 4

(7) Die Bauart dieses Gerätes sowie die verschiedenen zulässigen Ausführungen sind in der Anlage zu dieser 1. Ergänzung zu der Baumusterprüfbescheinigung festgelegt.

Folgende Ergänzung wurde durchgeführt:

- Neuer Gerätetyp FS mit Failsafe-Funktion – das Durchführen einer Bewegung des Stellantriebes bei Ausfall der elektrischen Energieversorgung – wurde hinzugefügt.

(8) Die Ergebnisse der Prüfung sind in dem vertraulichen Prüfbericht Nr. TÜV-A 2014-ET/PZW-EX-0-000805 festgelegt.

(9) Die grundlegenden Sicherheits- und Gesundheitsanforderungen erfüllt durch Übereinstimmung mit:

EN 60079-0:2012	EN 60079-1:2007	EN 60079-7:2007

(12) Die Kennzeichnung des Gerätes lautet neu:

II 2G Ex de IIC T4 oder T6

25. 09. 2015
Datum der Ausstellung
Date of issue

Dipl.-Ing. Kurt Mayerhofer
Zertifizierungsbeauftragter
Certification representative

Ende der Gültigkeit
End of validity

(13) # Anlage

(14) ## 1. Ergänzung zu EG-Baumusterprüfbescheinigung TÜV-A 13ATEX0006X

(15) **Beschreibung:**

Der Stellantrieb besteht aus einem druckfest gekapselten Steuerungsraum für den Einbau diverser elektrischer bzw. elektronischer Komponenten. Dieser Raum wird durch den Bediendeckel verschlossen, über den die Bedienung und Statusanzeige der Vorortsteuerung erfolgt. Am Antriebsflansch wird bei „FS" Version anstelle des in Basisversion ausgeführten Handrads die Failsafe-Einheit angebaut. Diese besteht aus unterschiedlichen mechanischen Getrieben sowie einem Federpaket als Energiespeicher. Die elektrischen Komponenten der Failsafe-Einheit sind in einem druckfest gekapselten Raum eingebaut. Der Stellantrieb wird im Normalbetrieb durch einen Elektromotor angetrieben. Bei Ausfall der elektrischen Energieversorgung wird die Failsafe-Funktion aktiviert und die Bewegung über das eingebaute Federpaket als Energiespeicher ausgeführt.
Die Bewertung der Wirksamkeit der Failsafe-Funktion war nicht Gegenstand des vorliegenden Zertifikates.

Typenschlüssel

Typ ex (r) CM03 .. ...

ex	explosionsgeschützte Ausführung
r	nur bei Ausführung Regelbetrieb (S4)
CM	Baureihe Kompaktdrehantrieb (compact Multiturn)
03	Baugröße bis 32Nm

A, AM	Gewindebuchse ohne bzw. mit Gewinde
B, B1, BSo	Steckbuchse mit Bohrung und Nut, je nach Abmessung
C, CSo	Klauenkupplung, je nach Abmessung
D, Do	Wellenende, 2. Wellenende
E, B3,ESo	Bohrung mit Nut, je nach Abmessung
Edo	Kombination Bohrung mit Nut mit 2. Wellenende
X	keine Abtriebsform
FS	**Failsafe – Funktion (neu hinzugefügt)**

XTR	erweiterter Temperaturbereich (nach Temperaturklasse)
ER	0/4..20mA Positionsrückmeldung
SR	Stellungsregler
PID	PID- Stellungsregler für 2 Eingangssignale 0/4..20mA
DP1	Profibus DP 1 Kanal
DP2	Profibus DP 2 Kanal (redundant)
CTVS	Trennverstärker für 0/4..20mA Positionsrückmeldung
CTVR	Trennverstärker für Stellungsregler
KP	Kundenprogrammierung u. erweitertes Prüfprotokoll im Werk SCHIEBEL
RP	Relaisplatine
ID	Zusatzpaket „ID" (KKS-Nummernanzeige)
AP	Armaturenkennlinienanpassung
IP68	erhöhte mechanische Schutzart IP68
DS	double sealed
T6	Temperaturklasse T6
**	weiters sind möglich, soweit nicht ex-relevant

Der Typenschlüssel wurde um die Gerätetyp ex (r) CM03 FS erweitert. Hier wird am Antriebsflansch die Failsafe-Einheit angebaut. Die bisherigen Typen bleiben unverändert.

Temperaturklasse: T4 oder T6

Allgemein gilt als Standardausführung die Temperaturklasse T4.
Umgebungstemperatur –20°C bis +40°C oder -40°C bis +60°C
Der Schutz- und Temperaturbegrenzer S-125 hat die Ansprechtemperatur von 130°C.
Sonderausführungen mit Temperaturklasse T6 sind möglich.
Umgebungstemperatur –20°C bis +40°C oder -40°C bis +40°C
Der Schutz- und Temperaturbegrenzer Typ SF76E hat hier die Ansprechtemperatur von 76°C.

Technische Daten:

Versorgungsspannung U_{AC} / U_{DC}	90 – 240 VAC 50-60Hz/100 – 200 VDC ±10%	
	230V	115V
Nennleistung $P_{n30\%}$	235W	238W
Nennleistung $P_{n50\%}$	334W	343W
Nennstrom $I_{n30\%}$	1,04A	2,11A
Nennstrom $I_{n50\%}$	1,47A	3,02A
Versorgungsspannung Alternativausführung U_n	20…30VDC	
Nennspannung U_n	24V	
Nennstrom $I_{n30\%}$	4,6A	
Nennstrom $I_{n50\%}$	6,8A	
Nennbetriebsart Steuerbetrieb EN60034-1	S2 – 15min	
Nennbetriebsart Regelbetrieb EN60034-1	S4 – 1200c/h – 40%ED	
Umgebungstemperatur T_{amb} (Standard T4/T6):	-20°C bis +40°C	
Umgebungstemperatur T_{amb} (erweitert T4):	-40°C bis +60°C	Bestellzusatz XTR
Umgebungstemperatur T_{amb} (Standard T4/T6):	-40°C bis +40°C	Bestellzusatz T6 XTR
Gehäuseschutzart:	IP 54	

- Nennleistung P_n30%, Nennstrom I_n30% bezogen auf Maximaldrehzahl und 30% Nennmoment nach EN15714-2

- Nennleistung P_n50%, Nennstrom I_n50% bezogen auf Maximaldrehzahl und 50% Nennmoment

(16) **Prüfbericht**

TÜV-A 2014-ET/PZW-EX-0-000805

(17) **Besondere Bedingungen**

Das Zeichen „X" nach der Zertifikatsnummer weist auf besondere Betriebsbedingungen hin.
Die besonderen Bedingungen bleiben unverändert:

(17.1) Die Zugfestigkeit der Befestigungsschrauben für Exd-Gehäuse muss mind. 400 N/mm² betragen.

(17.2) Bei gewissen Ausführungsvarianten (in Abhängigkeit der Einbauteile: Erwärmung, Kapazität) ist ein Warnschild gem. EN 60079-0, 29.11 a) über die erforderliche Wartezeit von 5 Min. nach dem Abschalten bis zum Öffnen des Deckels vorzusehen:

WARNUNG - NACH DEM ABSCHALTEN 5 MINUTEN WARTEN VOR DEM ÖFFNEN

(17.3) Der Hersteller kann nach Bedarf diverse Kombinationen von explosionsgeschützten Kabelverschraubungen, Leitungsdurchführungen und Reihenklemmen gem. Dokumentation verwenden. Es muss sichergestellt werden, dass die vorgeschriebenen Luft- und Kriechstrecken eingehalten werden, die Klemmen zugänglich sind und der Montageraum ausreichend ist.

(17.4) Stückprüfung (alle Exemplare)

Der Prüfdruck für die Stückprüfungen ist 16,7bar für Hauptgehäuse mit dem Bezugsdruck von <11,1bar.
Der Prüfdruck für die Stückprüfungen ist 15,2bar für FS Gehäuse mit dem Bezugsdruck von <10,1bar.
Beide Stückprüfungen können mit dem höheren Druck durchgeführt werden.

(18) **Grundlegende Sicherheits- und Gesundheitsanforderungen**

Durch Übereinstimmung mit den genannten Normen erfüllt.

Keine weiteren Anforderungen.

Certificate

(1) **2. SUPPLEMENT to EU - TYPE EXAMINATION**

acc. Directive 2014/34/EU Annex III figure 6

(2) **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU**

(1)

(3)	2. Supplement to EU - Type Examination Certificate Number:	**TÜV-A 13ATEX0006X**
(4)	Product:	Rotary actuator ex(r)CM06
(5)	Manufacturer:	Schiebel Antriebstechnik GmbH
(6)	Address:	1230 Vienna, Josef Benc-Gasse 4

(7) This 2nd supplementary certificate extends EU – Type Examination Certificate No. TÜV-A 13ATEX0006X to apply to products designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

(8) TÜV AUSTRIA SERVICES GMBH, Notified Body number 0408, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that the product, as modified by this supplementary certificate, has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive. The examination and test results are recorded in confidential Report No. TÜV-A 2016-000194

(9) In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Supplementary Certificates to such EC-Type Examination Certificates, and new issues of such certificates, may continue to bear the original certificate number issued prior to 20 April 2016

(12) The marking of the product remains without changes:

II 2G Ex de IIC T4 or T6 Gb

Vienna	May 19th, 2017	Dipl.-Ing. Kurt Mayerhofer
Place	*Date*	*approved by*

TÜV AUSTRIA SERVICES GMBH
Deutschstraße 10
1230 Vienna/ Austria
Tel.: +43 5 0454 6402
E-mail: wien.et@tuv.at
Web http://www.tuv.at

(13)

(14)

Schedule

2. Supplement to EU - Type Examination
TÜV-A 13ATEX0006X

(15) **General description of equipment**

(15.1) **General description of the variation acc. to 2nd supplement**

The actuator consists of a flameproof ("d") protected main compartment with built-in electric and main electronic components (motor, control unit. frequency converter). This enclosure has a cover with operating elements and display for local operating and state readout. The motor shaft and, sensor shaft extend from the control box into the gearbox. Two cables bushing in the separating wall connect electrically the flameproof protected box ("d") with the terminal box in increased safety ("e") protection type. The terminal box contains the explosion proof cable terminals and a mounting wall for up to 3 explosion proof cable glands. The terminal box is closed with a waterproof sealed cover.

The subject of this second supplement is the introduction of a second size of an explosion-proof electrical actuator series in compact design, both as a standard rotary actuator and as well as a failsafe actuator (extension "FS" in the type code) with increased output torque. The design remains mainly unchanged compared to the model ex (r) CM03 tested in type-examination certificate TÜV-A 13ATEX0006X up to the dimensioning of the mechanical part.
The failsafe version (failsafe function means driving to a safety position in the event of a failure of the electrical power supply) essentially consists of the electrical basic actuator described in the design certificate ex (r) CM03 (TÜV-A 13ATEX0006X, 1st supplement.
As with size ex (r) CM03 FS ..., an additional flameproof ("d") compartment according to EN 60079-1 is fitted, which is larger in size. On the other hand there is also the possibility to equip the failsafe version with a handwheel. This flameproof compartment is connected to the connection box of the basic actuator in the degree of protection increased safety ("e") according to EN 60079-7 via an external cable connection. On the output flange of the basic actuator, the failsafe unit is installed, consisting of different mechanical gears as well as a spring package as energy storage.

The different types of variants are described by the following markings and additions:

Deutschstraße 10
1230 Vienna / Austria
Tel.: +43 5 0454 6402
E-mail: wien.et@tuv.at
Web http://www.tuv.at

(15.2) **Type variations**

Standard version: ex (r) CM06 .. ....

ex	explosion proof version
r	only for versions with control operating mode (S4)
CM	compact multiturn version
06	product size up to 65Nm

Additional markings 1: output variations:

A, Am	stem nut without/with thread
B, B1, BSo	plug sleeve with with bore and keyway
C, CSo	claw coupling
D,Do	free shaft or two shafts
E, B3, ESo	bore and keyway
EDo	bore and keyway on bottom and free shaft with keyway on top
X	without output drive

Failsafe version: ex (r) CM06 FS ** ******

ex	explosion proof version
r	Only for versions with control operating mode (S4)
CM	Compact multiturn version
06	product size up to 65Nm
FS	Failsafe version

Additional markings 1: Failsafe version:

QT***	Failsafe actuator for 90° part turn movement, figure following relates to the maximum output torque in daNm e. g. FSQT200 means maximum output torque 2000 Nm
****.****	Failsafe actuator for linear movement, figure combination following relates to the idle stroke in mm and remaining force in kN e. g. FS20.5 means 20mm idle stroke and remaining force of 5kN at the end of stroke = failsafe position

Additional markings 2: options (for both standard and fail safe version)

XTR	extended temperature range (acc. to temperature class)
ER	position feedback signal - 0/4..20mA
SR	positioner - 0/4..20mA
PID	PID positioner for 2 inputs - 0/4..20mA
DP1	profibus DP interface - 1 channel
DP2	profibus DP interface - 2 channels (redundant design)
RP	relay board
KP	customers programming and increased test protocol at manufacturers site additional package "ID" (labelling)
AP	adaption of characteristic of valve
IP68	increased degree of protection IP68
DS	double sealed
HA	hand wheel
******	other extensions possible as long not ex-relevant

TÜV AUSTRIA SERVICES GMBH

Deutschstraße 10
1230 Vienna / Austria
Tel.: +43 5 0454 6402
E-mail: wien.et@tuv.at
Web http://www.tuv.at

(15.3) **Temperature class: T4 or T6**

General standard temperature class T4.
Ambient temperature –20°C to +40°C or -40°C to +60°C

Special designs with temperature class T6 are possible.
Ambient temperature –20°C to +40°C or -40°C to +40°C
Protection is ensured by installing a suitable temperature limiter.

(15.4) **Technical data**

Supply voltage U_{AC} / U_{DC}	90 – 240 VAC 50-60Hz/100 – 200 VDC ±10%	
Nominal voltage U_n	230V	115V
Nominal power $P_{n30\%}$	490W	470W
Nominal power $P_{n50\%}$	630W	610W
Nominal current $I_{n30\%}$	2,17A	4,1A
Nominal current $I_{n50\%}$	2,85A	5,4A
Supply voltage alternative U_n	20 – 30VDC	
Nominal voltage U_n	24V	
Nominal current $I_{n30\%}$	4,6A	
Nominal current $I_{n50\%}$	6,8A	
Control operating mode EN60034-1	S2 – 15min	
Control operating mode EN60034-1	S4 – 1200c/h – 40%ED	
Ambient temperature T_{amb} (standard T4/T6):	-20°C to +40°C	
Ambient temperature T_{amb} (extended T4):	-40°C to +60°C	Additional marking XTR
Ambient temperature T_{amb} (standard T4/T6):	-40°C to +40°C	Additional marking T6 XTR
Degree of protection:	IP 54 (min), higher degree possible	

- Nominal power $P_{n30\%}$, nominal current $I_{n30\%}$ related to maximal revolutions and 30% of nominal torque, acc. to EN15714-2
- Nominal power $P_{n50\%}$, nominal current $I_{n50\%}$ related to maximal revolutions and 50% of nominal torque

(16) **Test report**

TÜV-A 2016-000194

Deutschstraße 10
1230 Vienna / Austria
Tel.: +43 5 0454 6402
E-mail: wien.et@tuv.at
Web http://www.tuv.at

(17) **Special Conditions of Use**

For type variation ex(r)CM06... following special conditions apply:

(17.1) The yield stress of the screws for the flameproof enclosure must exceed 400 N/mm²

(17.2) For some product versions (depending on built-in components: heating up, electric capacity) a warning marking acc. to EN 60079-0, 29.11 a) is required, subjected to the delay of 10 minutes before opening the enclosure after de-energizing:

WARNING – AFTER DE-ENERGIZING, DELAY 10 MINUTES BEFORE OPENING!

(17.3) On demand the manufacturer is allowed to use different combination of explosion proof cable glands, cable terminals and bushing according to product documentation. It must be secured that the creepage distances and air clearances comply with the standard requirements and that the terminals are accessible and there is sufficient mounting space inside the terminal compartment.

(17.4) Routine tests (all exemplars)

Test pressure of product tests is 16,7bar (242psi) for main casing with reference pressure of <11,1bar (161psi).

(18) **Essential Health and Safety Requirements**

Covered by application of above mentioned standards.

TÜV AUSTRIA SERVICES GMBH
Deutschstraße 10
1230 Vienna / Austria
Tel.: +43 5 0454 6402
E-mail: wien.et@tuv.at
Web http://www.tuv.at

(19) **Drawings and Documents**

Number	Sheet	Issue	Date	Description
TÜV-A 13ATEX0006X	4	--	17.03.2013	EU – Type Examination Certificate
2013-ET/PZW-EX-0-000305	32	--	17.10.2013	related test report
TÜV-A 13ATEX0006X – 1. Supplement	4	--	25.09.2015	EU – Type Examination Certificate
2014-ET/PZW-EX-0-000805	7	--	25.09.2015	related test report
Ex-acceptance CM overview	1	--	01.03.2017	Overview sheet acc. TÜV-A 13ATEX0006X
BAB exCM06 1616	20	--	22.04.2016	Construction description Actuator
exCM06 3715+ enclosures	44	--	20.09.2016	Construction description with supplementary documents and drawings
OM-GERMAN-CM-V1.2-2017.02.02	57	V1.2	02.02.2017	Operation manual ACTUSMART CM, revision of control mode 1.2
OM-GERMAN-CMFS-V1.01-2016.02.10	71	V1.01	10.02.2016	Operation manual Linear ACTUSAFE CM FS

Deutschstraße 10
1230 Vienna / Austria
Tel.: +43 5 0454 6402
E-mail: wien.et@tuv.at
Web http://www.tuv.at

ZERTIFIKAT | CERTIFICATE | CERTIFICAT | CERTIFICADO | СЕРТИФИКАТ | شهادة | 证书 | 인증서

TÜV AUSTRIA

Certificate

(1) **3rd SUPPLEMENT to EU - TYPE EXAMINATION**

according to Directive 2014/34/EU Annex III clause 6

(2) **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU**

(3)	3. Supplement to EU - Type Examination Certificate Number:	**TÜV-A 13ATEX0006X**
(4)	Product	Add-on module 400V, **Type SDC-480-4A-V3.0** for actuators ex(r)CM03...(FS)(HA) or ex(r)CM06...(FS)(HA)
(5)	Manufacturer:	Schiebel Antriebstechnik GmbH
(6)	Address:	A-1230 Vienna, Josef Benc-Gasse 4

(7) This 3rd supplement certificate extends EU – Type Examination Certificate No. TÜV-A 13ATEX0006X to apply to products designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

(8) TÜV AUSTRIA SERVICES GMBH, Notified Body number 0408, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that the product, as modified by this 3rd supplement certificate, has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential Report No. TUV-A 2017-000114 and partial Report TUV-A 2017-000114-1 Klima.

(9) In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Supplement Certificates to such EC-Type Examination Certificates, and new issues of such certificates, may continue to bear the original certificate number issued prior to 20 April 2016

(12) The marking of the product shall be:

II 2 G Ex db eb mb IIC T4 Gb **or**

II 2 G Ex db eb mb IIC T6 Gb

Vienna	2018-02-28	Dipl.-Ing. Dr. Kurt Mayerhofer
Place	*Date*	*approved by*

TÜV AUSTRIA SERVICES GMBH

Deutschstraße 10
1230 Vienna / Austria
Tel.:+ 43 5 0454-6402
E-mail: wien.et@tuv.at
Web http://www.tuv.at

(13)

Schedule

(14) 3rd SUPPLEMENT to EU - TYPE EXAMINATION
TÜV-A 13ATEX0006X

(15) **Description of the variation to the Product:**

The actuator on hand consists of a flameproof ("d") protected main compartment with the main electrical components (motor, control unit. frequency converter) built-in. This enclosure is equipped with a cover with operating elements and a display for local operating and state readout. The motor shaft and sensor shaft extend from the control box into the gearbox. Two cable bushings in the separating wall provide electrical connection of the flameproof protected box ("d") with the terminal box in increased safety ("e") protection type. The terminal box contains the explosion proof cable terminals and a mounting wall for up to 3 explosion proof cable glands. The terminal box is closed with a waterproof sealed cover (IP 54).

Subject of this 3rd supplement is an optional add-on module for assembly with the existing parts of the actuator, allowing the application of a supply voltage of 3x 400V AC.
(Type name of the add-on module: SDC-480-4A-V3.0)

The new module can be inserted into the existing Ex e protected section of the actuator. Embedded into the Ex e section inside the new module, the electronic circuitry for the voltage conversion is enclosed by casting compound according to requirements of EN 60079-18, equipment protection by encapsulation "m". The rest of the module is designed with equipment protection increased safety "e" - in the same way as the connecting devices. Both connecting links to the existing modules are designed identically to the existing links with respect to construction and dimensions. (notch and O-ring seal MVQ-70 red)

Deutschstraße 10
1230 Vienna / Austria
Tel.:+ 43 5 0454-6402
E-mail: wien.et@tuv.at
Web http://www.tuv.at

Technical specifications:

Supply voltage U_{AC}		
Rated voltage U_n	3x 380 V_{AC} - 3x 480 V_{AC} +/-10%, 50-60Hz	
	ex(r)CM03	
Rated voltage U_n	380V	480V
Rated current $I_{n50\%}$	0,84A	0,67A
	ex(r)CM06	
Rated voltage U_n	380V	480V
Rated current $I_{n50\%}$	1,63A	1,3A
Rated voltage on the output side	380 V_{DC}	
Rated current $I_{n50\%}$ based on maximum speed and 50% nominal torque	---	
Operation in control mode EN 60034-1	S2-15min	
Operation in automatic control mode EN 60034-1	S4-1200c/h - 40%ED	
Output voltage	380V $_{DC}$	
Ambient temperature T_{amb} (standard T4/T6):	-20°C bis +40°C	---
Ambient temperature T_{amb} (extended T4):	-40°C bis +60°C	Order extension XTR
Ambient temperature T_{amb} (extended T6):	-40°C bis **+40°C**	Order extension T6 XTR
Housing minimum protection	IP54 (min), or better	

(16) **Test report**

TUV-A 2017-000114

Deutschstraße 10
1230 Vienna / Austria
Tel.:+ 43 5 0454-6402
E-mail: wien.et@tuv.at
Web http://www.tuv.at

(17) **Specific Conditions of Use**

The character „X" after the certificate number indicates special operation conditions.

(17.1) The yield stress of the screws for the flameproof enclosure must exceed 400 N/mm².

(17.2) For some product versions (depending on built-in components: heating up, electric capacity, etc.) the following warning marking according to EN 60079-0, 29.11 a) has to be applied, referring to an idle time before opening the enclosure after de-energizing:
WARNING – AFTER DE-ENERGIZING, DELAY 5 MINUTES BEFORE OPENING!

(17.3) As required, the manufacturer can apply any released combination of explosion proof cable glands, cable terminals and bushings according to product documentation.
It must be made sure that the creepage distances and air clearances will comply with the standard's requirements and that the terminals are accessible and there is sufficient mounting space inside the terminal compartment.

(17.4) Routine tests (to be performed on all produced parts)

- **Pressure test main compartment:**
  The test pressure for routine tests is 16,7 bar for main compartments with a reference pressure of < 11,1bar.

- **Add-on module 400V Type SDC-480-4A-V3.0:**
  Visual examination of the casting compound, related to cracking and to loss of adhesive strength to the enclosure

- **Add-on module 400V Type SDC-480-4A-V3.0:**
  Voltage withstanding test, test voltage of 2270 V DC to be applied for 1 sec between frame ground and all other cables short-circuited on each produced part
  Condition for compliance: flashover or breakdown must not occur

(18) **Essential Health and Safety Requirements**

Covered by application of above mentioned standards.
No further requirements.

TÜV AUSTRIA SERVICES GMBH

Deutschstraße 10
1230 Vienna / Austria
Tel.:+ 43 5 0454-6402
E-mail: wien.et@tuv.at
Web http://www.tuv.at

TÜV AUSTRIA

(19) **Drawings and documents**

Document / drawing no. / reference no / file name	Rev	Pages	Date	Description
TÜV-A 13ATEX0006X	--	4	17.03.2013	EU type examination
2013-ET/PZW-EX-0-000305	--	32	17.10.2013	Corresponding test report
TÜV-A 13ATEX0006X – 1st supplement	--	4	25.09.2015	EU type examination
2014-ET/PZW-EX-0-000805	--	7	25.09.2015	Corresponding test report
TÜV-A 13ATEX0006X – 2nd supplement		6	19.05.2017	EU type examination
TUV-A 2016-000194.doc		30	17.05.2017	Corresponding test report
Ex-Abnahme CM Übersicht	-	1	01.03.2017	Overview chart to TÜV-A 13ATEX0006X
BAB exCM06 1616 mit Zeichnungen		44	22.04.2016	Bauartbeschreibung Stellantrieb Type description actuator
BAB exCM06 1744		7	31.10.2017	Bauartbeschreibung des 400V-Moduls als Zusatz zu Baureihe ex(r)CM Type description of the 400V module as add-on to the ex (r) CM series
TUV-A 2017-000114-1 Klima TÜV AUSTRIA	--	4	24.01.2017	Prüfung Klimabeständigkeit ex(r)CM 400V Modul, 3 Vergussmassen Climatic resistance ex(r)CM 400V module, 3 potting compound
Betriebsanleitung ACTUSMART CM, Steuerungsversion 1.2, OM-GERMAN-CM-V1.2-V1.05-2017.11.27	--	57	27.11.2017	Instructions for use
SCP 41.40.01 Fa. Schiebel	--	1	18.07.2016	Circuit diagram, power connection 3 phase
Schiebel BLDC 400V AC, TP14002	D1	1	22.03.2016	Electrical diagram
EG-KF-CM-GERMAN-V1.03-2018.02.14	--	2	14.02.2018	Sample declaration of conformity

Deutschstraße 10
1230 Vienna / Austria
Tel.:+ 43 5 0454-6402
E-mail: wien.et@tuv.at
Web http://www.tuv.at