

# Certificate



(1) **3<sup>rd</sup> 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**


- (3) 3<sup>rd</sup> Supplement to EU - Type Examination Certificate Number: **TÜV-A 16ATEX0007X**
- (4) Product **Product Family RTS (Rotary Actuators)  
Types CM-xx, CL-xx, FL-xx, FQ-xx**  
  
**Introduction of Add-on Supply Module 400V for types as listed in point (15)**
- (5) Manufacturer: **Emerson Process Management  
Valve Automation, Inc.**
- (6) Address: **19200 NW Freeway, Houston, TX 77065, USA**
- (7) This 3<sup>rd</sup> supplement certificate extends EU – Type Examination Certificate No. TÜV-A 16ATEX0007X 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 Feb. 26<sup>th</sup>, 2014, certifies that the product, as modified by this 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 2019-0002102e2.
- (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 include the following:

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

 **II 2 G Ex db eb mb IIC T6 Gb**

Vienna  
Place

2019-09-24  
Date

  
Dipl.-Ing. Dr. Kurt Bruckner  
Notified Body 0408  
TÜV AUSTRIA SERVICES GMBH





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## Schedule

(14) 3<sup>rd</sup> SUPPLEMENT to EU - TYPE EXAMINATION  
TÜV-A 16ATEX0007X

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

The actuator on hand consists of a main compartment with the main electrical components (motor, control unit, frequency converter), with equipment protection by a flameproof enclosure "db". This compartment is equipped with a cover with operating elements and a display for local operation 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 enclosure box "db" with the terminal box protected by increased safety "eb". 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 3<sup>rd</sup> supplement** is an optional add-on supply module for assembly with certain types of the existing parts of the actuator, allowing the application of a nominal supply voltage of 3 x 400 V<sub>AC</sub>. The new module (Part no. SDC-480-4A-V3.0) can be inserted into the existing section of the actuator protected by increased safety "eb". Embedded into this section, and 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", here in particular "mb". The rest of the module is designed with equipment protection increased safety "eb" - in the same way as the connecting devices. Both connecting links to the existing modules are designed identically to fit the existing links, with respect to construction and dimensions (notch and O-ring seal MVQ-70 red).





**Technical specifications for types equipped with the add-on Supply Module 400V:**

Nominal supply voltage $U_n$	3 x 400 V <sub>AC</sub> 50-60Hz	
Supply voltage range	3 x 380 V <sub>AC</sub> ÷ 3 x 480 V <sub>AC</sub> +/-10%	
Power ratings when applied with types:	<b>CM-32B-XX</b> <b>FL-05B-XX, FL-15B-XX, FL-25B-XX</b> <b>FQ-03B-XX, FQ-06B-XX</b>	
Supply voltage	380V <sub>AC</sub>	480V <sub>AC</sub>
Rated current $I_{n50\%}$	0,84A	0,67A
Power ratings when applied with types:	<b>CM-64B-XX</b> <b>FL-40B-XX</b> <b>FQ-10B-XX, FQ-20B-XX, FQ-30B-XX, FQ-50B-XX</b>	
Supply voltage	380V <sub>AC</sub>	480V <sub>AC</sub>
Rated current $I_{n50\%}$	1,63A	1,3A
Rated voltage on the output side of the module	380 V <sub>DC</sub>	
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 <sub>DC</sub>	
Ambient temperature $T_{amb}$ (standard T4/T6):	-20°C ÷ +40°C	---
Ambient temperature $T_{amb}$ (extended T4):	-40°C ÷ +60°C	Order extension XTR
Ambient temperature $T_{amb}$ (extended T6):	-40°C ÷ +40°C	Order extension T6 XTR
Housing minimum protection	IP54 (min), or better	



**Emerson Product Lineup and part number codes description:**

Code digits: *aa – bbc – defgh - ii – j – k*

Code digit	Encoded item	Description
aa	Type of Actuator	CM: Multiturn actuator
		CL: Linear actuator
		FL: Linear failsafe actuator
		FQ: 90°part turn failsafe actuator
bb	Scale Size (in combination with aa)	CM-32
		CM-64
		CL-05
		CL-15
		CL-25
		FL-05
		FL-15
		FL-25
		FL-40
		FQ-03
		FQ-06
		FQ-10
		FQ-20
		FQ-30
FQ-50		
c	Power Supply	A: Single Phase
		B: 3x400V
d	Enclosure	C: DC
		NB: without output drive
		0: Weather Proof
		1: ATEX
		2: IECEX
e	Operation Mode	3: NA, NEC 500
		4: NA, NEC 505
		0: S2-15min (On/Off)
f	Bus Connection	M: S4/1200c/h 40% (modulating)
		0: no bus
g	Manual Override	*: bus type (not ex-relevant)
		0: no manual override
h	Brand	H: manual override
		B: Bettis
		E: EIM
ii	OP Type	00: No adaption
		L*: Linear
		T*: Thrust
		G*: Quarter Turn
		F*: Failsafe
j	Hardware Options	0: None
		A: Relay Board
		B: Coating - C5
k	Software Options	0: None
		M: SR Positioner
		N: ER Position Feedback
		O: PID Positioner
		P: ID on display
		*: other SW adders (not ex-relevant)



(16) **Test report**

TUV-A 2019-000210 e2

(17) **Specific Conditions of Use**

Remark: The original specific conditions remain unchanged, plus an additional requirement (17.5).

(17.1) The yield stress of the screws for the flameproof enclosure must exceed 400 N/mm<sup>2</sup>

(17.2) For some of the product versions (depending on built-in components: heating up, electric capacity) the following warning marking acc. to EN 60079-0, 29.12 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 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.

(17.4) Routine tests (on all assembled products)

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

(17.5) Routine tests on each Supply module 400V Type SDC-480-4A-V3.0

- Visual inspection of the potting compound on each delivered part for cracks and loss of adhesion to the housing
- Dielectric strength test between all I/O wires shorted against chassis ground with a DC voltage of 2260 V applied for 1 sec; Condition: no breakdown and no flashover.





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

Compliance with the Essential Health and Safety Requirements is not affected by this variation and covered by the application the harmonised ATEX standards.

(19) **Drawings and documents**

Document / Drawing no / File name/ Reference	Rev.	Description	Pages	Date of issue
TUV-A 2019-000210e2	--	Test report TÜV AUSTRIA	10	2019-09-24 / 2020-07-31
TÜV-A 16ATEX0007X	--	Type examination certificate Emerson	5	2017-03-20
TÜV-A 16ATEX0007X, 1 <sup>st</sup> Supplement	--	related 1 <sup>st</sup> supplement	5	2017-03-20
TÜV-A 16ATEX0007X, 2 <sup>nd</sup> Supplement	--	related 2 <sup>nd</sup> supplement	4	2018-05-18
EU Declaration of Conformity RTS V1.5.docx	--	EU-Declaration of conformity for Product family RTS, Types CM xx, CL xx, FL xx, FQ xx	1	2019-09-23
Confirmation of the identical construction V1.6.docx	--	Confirmation of cross reference table and production	4	Sept. 2019
38638-1.pdf, RTS ATEX Tag Artwork	--	Principal Drawing Type plate	1	2019-05-14
Operating manual for Bettis RTS FQ Series: manual-bettis-rts-fq-iom-en-1272604.pdf	4	Different Manuals available, depending on the model of actuator; e.g. Bettis Emerson RTS FQ Series Part Number MAN-02-04-60-0351-EN Rev. 4	81	Sept. 2019



# 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**

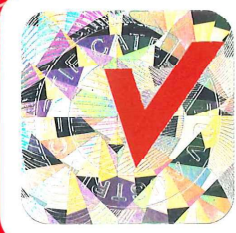
- (3) 2. Supplement to EU - Type Examination Certificate Number: **TÜV-A 16ATEX0007 X**
- (4) Product **Rotary actuators (extension of type program)**
- (5) Manufacturer: Emerson Process Management, Valve Automation, Inc.
- (6) Address: 19200 Northwest Freeway, Houston, TX. 77065, USA
- (7) This 2<sup>nd</sup> supplement certificate extends EU – Type Examination Certificate No. TÜV-A 16ATEX0007X 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 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 2017-000201.
- (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 remains without changes shall include the following:

 **II 2 G Ex d e IIC T4 or T6 Gb**

Vienna  
Place

May 18<sup>th</sup>, 2018  
Date

  
Dipl.-Ing. Dr. Kurt Bruckner  
approved by



(13)

# Schedule



(14)

## 2. SUPPLEMENT to EU - TYPE EXAMINATION TÜV-A 16ATEX0007X

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

- New size of rotary actuators was added.

#### Type variations:

#### VARTS-aa-bbc-defgh-i

VARTS:	Common identification for actuator		
aa:	Type of actuator:	CM	Multiturn actuator
		CL	Linear actuator
		FL	Linear failsafe actuator
		FQ	90° part turn failsafe actuator
bb:	Size:	CM-32	
		CM-64	
		CL-05	
		CL-15	
		CL-25	
		FL-05	
		FL-15	
		FL-25	
		FL-40	
		FQ-03	
		FQ-06	
		FQ-10	
		FQ-20	
		FQ-30	
FQ-50			
c:	Power supply:	A:	90 – 240 VAC 50-60Hz 100 – 200 VDC ±10%
		C:	24VDC
d:	Explosion proof	0:	not Explosion Proof
		1:	Explosion Proof
e:	mode of operation:	0:	S2-15min (On/OFF)
		M:	S4/1200c/h 40% DC (modulating)
f:	bus connection:	0:	no bus
		*:	bus type (not ex-relevant)
g:	manual override:	0:	no manual override
		H:	manual override
h:	Brand:	B:	Bettis
		E:	EIM
i:	Failsafe-direction:	0:	Open
		1:	Close





**Temperature class: T4 or T6**

General standard temperature class **T4**.

Ambient temperature  $-20^{\circ}\text{C}$  to  $+40^{\circ}\text{C}$  or  $-40^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$

Special designs with temperature class **T6** are possible.

Ambient temperature  $-20^{\circ}\text{C}$  to  $+40^{\circ}\text{C}$  or  $-40^{\circ}\text{C}$  to  $+40^{\circ}\text{C}$

Protection is realized by using of appropriate implemented temperature limiters.

**Electrical data**

Supply voltage $U_{AC} / U_{DC}$	90 – 240 VAC 50-60Hz/100 – 200 VDC $\pm 10\%$	
	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 EN60034-2	S4 – 1200c/h – 40%DC	
Ambient temperature $T_{amb}$ (standard T4/T6):	$-20^{\circ}\text{C}$ to $+40^{\circ}\text{C}$	
Ambient temperature $T_{amb}$ (extended T4):	$-40^{\circ}\text{C}$ to $+60^{\circ}\text{C}$	Additional marking XTR
Ambient temperature $T_{amb}$ (standard T6):	$-40^{\circ}\text{C}$ to $+40^{\circ}\text{C}$	Additional marking T6 XTR
Degree of protection:	IP54 (minimum requirement of standards) IP66/IP67 (manufacturer's specification)	

- 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**

TUV-A 2017-000201



**(17) Specific Conditions of Use**

The sign "X" placed after the certificate number indicates that the product is subject to the Specific Conditions of Use. For new type variations following special conditions apply:

(17.1) The yield stress of the screws for the flameproof enclosure must exceed 400 N/mm<sup>2</sup>

(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, 29.12 a), 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 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.

(17.4) Routine tests (all exemplars)

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

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

Covered by application of above mentioned standards.

**(19) Drawings and documents**

Description	Sheet	Date
TÜV-A 16ATEX0007X type examination certificate	5	20.03.2017
TÜV-A 16ATEX0007X type examination certificate – 1 <sup>st</sup> supplement	5	20.03.2017
TÜV-A 2016-IN-AT-OS-EE-EX-0-000348: test report	9	20.03.2017
Declaration product equality	1	27.07.2016
Private Label Supplier Agreement	5	19.05.2016
Housing Nameplate Proposal	8	14.03.2017
BAB exCM06 3917: type and size description	5	29.09.2017