CERTIFICATE

(1) EU-Type Examination

(2) **Equipment or protective systems intended for use in potentially explosive atmospheres - Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number: **DEKRA 16ATEX0080 X** Issue Number: **4**

(4) Product: **Fail safe unit, types FQMEx 05.1, FQMEx 07.1, FQMEx 10.1 and FQMEx 12.1**

(5) Manufacturer: **AUMA Riester GmbH & Co. KG**

(6) Address: **Aumastrasse 1, 79379 Müllheim, Germany**

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

(8) DEKRA Certification B.V., Notified Body number 0344 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product 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 test report number NL/DEK/ExTR16.0057/04.

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

EN IEC 60079-0 : 2018 **EN 60079-1 : 2014**
EN 60079-7 : 2015 + A1 : 2018

except in respect of those requirements listed at item 18 of the Schedule.

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

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

II 2 G Ex db eb IIB T4 Gb (With terminal connection KP, KPH, KPB or KES-Exe)
II 2 G Ex db IIB T4 Gb (With terminal connection KES-Exd)

Date of certification: 16 March 2021

DEKRA Certification B.V.

R. Schuller
Certification Manager

PRODUCTS RvA C 001

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(13) # SCHEDULE

(14) **to EU-Type Examination Certificate DEKRA 16ATEX0080 X** Issue No. **4**

(15) **Description**

The fail safe units types FQMEx 05.1, FQMEx 07.1, FQMEx 10.1 and FQMEx 12.1 combined with an electric actuator are designed for the operation of safety related industrial valves for a swing angle of 90°, e.g. butterfly -, ball - or plug valves.

AUMA part-turn actuators with fail safe unit ensure that the valve is operated to a safe position in the event of power failure or in case an emergency signal is issued. Selection can be made whether the valve is to be operated into open or closed.

During "normal operation" all AUMA actuator functions are available as usual in normal operation. The torque is transmitted directly from the actuator through the Fail safe unit to the valve.

The fail safe operation is completely independent of the power supply and is exclusively supplied on a mechanical basis by means of the energy stored in the coiled up constant force spring. A fail safe operation is initiated in case of power failure or if an emergency signal is issued. This is independent of AC actuator controls. The constant force spring is activated during fail safe operation and transmits the generated torque to the valve by means of planetary gearing.

For the connection of the electrical wirings a separate terminal connection is used:
The fail safe unit in combination with terminal connections KP, KPH, KPB or KES-Exe are in type of protection "Ex db eb". The fail safe unit in combination with terminal connection KES-Exd is in type of protection "Ex db".
Within terminal connections KP, KPH, KPB or KES-Exe the wiring connection shall be "Ex e".
Within terminal connection KES-Exd the wiring connection shall be “Ex d”.

Within the flameproof compartment of the Fail safe unit, a heating system can be installed optionally. This internal heater, if provided, automatically switches off at an ambient temperature above 0 °C. On the outside of the housing, the fail safe units may be equipped with a thermal insulating cover.

For thermal data, type designation, sizes and technical data and electrical data, refer to Annex 1 to Report No. NL/DEK/ExTR16.0057/04.

Installation instructions

The instructions provided with the product shall be followed in detail to assure safe operation.

(16) **Report Number**

No. NL/DEK/ExTR16.0057/04.

(17) **Specific conditions of use**

- The flameproof joints of the fail safe units are not intended to be repaired.
- The property class of the special fasteners for the Fail Safe compartment is min. A2-80.
- The property class of the special fasteners for the Terminal Connections is min. A2-70.

(13) # SCHEDULE

(14) **to EU-Type Examination Certificate DEKRA 16ATEX0080 X** Issue No. **4**

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

Covered by the standards listed at item (9).

(19) **Test documentation**

As listed in Report No. NL/DEK/ExTR16.0057/04.

(20) **Certificate history**

Issue 0 -	218609800	Initial certificate
Issue 1 -	219786600	Addition of two new types and Specific conditions of use (X-marking).
Issue 2 -	221473900	Constructional changes.
Issue 3 -	223140100	Assessment against recent editions of the standard. Constructional and rating changes.
Issue 4 -	223800500-1	Constructional and rating changes.

Annex 1 to Report No. NL/DEK/ExTR16.0057/04

Thermal data

Fail safe unit type	Terminal connection	Temperature class	Ambient temperature
FQMEx 05.1 FQMEx 07.1	KES-Exe, KES-Exd KP, KPH, KPB	T4	-60 °C to +80 °C *)
FQMEx 10.1 FQMEx 12.1	KES-Exe, KES-Exd	T4	-60 °C to +80 °C *)
	KP, KPH, KPB	T4	-40 °C to +80 °C *)

*) Ambient temperature limited to +60 °C in combination with the thermal insulating cover.

Type designation

FQMEx Series

FQM Ex 05 . 1 - F05 / - - 3 - -
I II III IV V VI VII VIII IX X XI

Designation	Explanation	Value	Explanation
I	General	FQM	Fail safe unit
II	Blank	-	Not used yet
III	Explosionproof version	Ex	For use in environments containing flammable gas
IV	Unit size	05 07 10 12	Indicator for standardized unit sizes
V	Design generation	1	Indicator for generation series
VI	Flange size	F***	Indicator for standardized flange sizes (not relevant for Ex)
VII	Blank	-	not used yet
VIII	Blank	-	Not used yet
IX	Terminal connection	3 4	Type KP, KPH, KPB or KES-Exe Type KES-Exd
X	Blank	-	Not used yet
XI	Blank	-	Not used yet

Sizes and technical data

Type	Output torque	Operating time for 90° in ''normal mode'' (depends on actuator)	Operating time for 90° in ''emergency mode'' (depends on fail safe unit)	Max. swing angle
FQMEx 05.1	150 Nm	Depends on actuator	5 to 40 s	105°
FQMEx 07.1	300 Nm		5 to 40 s	105°
FQMEx 10.1	600 Nm		10 to 60 s	105°
FQMEx 12.1	1 200 Nm		10 to 60 s	105°

Electrical data

Power supply	
Current type:	3-phase AC
Mains voltage:	380 – 480 V
Frequency:	50/60 Hz
Power consumption:	510 W max.
Current type:	1-phase AC
Mains voltage:	100 – 240 V
Frequency:	50/60 Hz
Power consumption:	510 W max.
Control circuits:	
Voltage:	250 V max.
Current:	5 A max.

Installation instructions

The instructions provided with the equipment shall be followed in detail to assure safe operation.