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 13ATEX0016X** Issue Number: **7**

(4) Product: **Part-turn Actuator, type SQEx********, SQREx********, SQVEx********, SQRVEx******** and Wall Bracket, type WHEx01.1****

(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/ExTR19.0105/02.

(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**
EN 60079-11 : 2012	**EN 60079-31 : 2014**	**EN 50495 : 2010**

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 ib IIC T4 Gb
II 2 D Ex ib tb IIIC T130 °C Db
Ex ic FISCO field device (optionally integrated)

Note: A typical example is shown, for details see the Annex 1 to this certificate.

Date of certification: 5 February 2025

DEKRA Certification B.V.



L.G. van Schie
Certification Manager

PRODUCTS RvA C 001

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(13) # SCHEDULE

(14) **to EU-Type Examination Certificate DEKRA 13ATEX0016X** Issue No. **7**

(15) **Description**

Part-turn actuator types SQEx********, SQREx********, SQVEx******** and SQRVEx******** are intended to operate industrial valves. The actuators can be provided without or with integral controls. Integral controls can also be provided, separately from the actuator, on the Wall Bracket type WHEx01.1**.

The actuators are available in sizes 05, 07, 10, 12 and 14.

The enclosure provides a degree of protection of IP68 (8 m for 96 h) per EN IEC 60079-0 and EN 60529 when suitable for type of protection Ex tb.

For detailed product information, type designation, marking, thermal and electrtical data see the annex to this certificate; Annex 1 to Report No. NL/DEK/ExTR19.0105/02.

Electrical data

For information about the electrical data see Annex 1 to Report No. NL/DEK/ExTR19.0105/02.

Installation instructions

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

(16) **Report Number**

NL/DEK/ExTR19.0105/02.

(17) **Specific conditions of use**

- For information regarding the dimensions of the flameproof joints the manufacturer shall be contacted.
- Special fasteners shall have a property class of
  - min. A*-70, for all special fasteners except these used at motor type VKX and
  - min. A*-80, for special fasteners used at motor type VKX.
- After tripping of the thermal motor protection (TMS) an acknowledgement (RESET) of the thermal fault is required.
- For use in dust environments, the risk of external electrostatic discharges shall be minimized.

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

Covered by the standards listed at item (9).

(19) **Test documentation**

As listed in Report No. NL/DEK/ExTR19.0105/02.

(13) # SCHEDULE

(14) **to EU-Type Examination Certificate DEKRA 13ATEX0016X** Issue No. **7**

(20) **Certificate history**

Issue 1 -	215898600	initial certificate.
Issue 2 -	216330000	Upgrade of edition of EN 60079-15.
Issue 3 -	217400700	Upgrade of edition of EN 60079-7 and EN 60079-31. 1 Phase motor has been added for SQ.Ex series 05.2 to 14.2 FNICO and FISCO deleted for ACExC 01.01
Issue 4 -	221889800	Expanding of ambient temperature range to +80 °C for Group IIB; Minor construction changes; Updating of standard EN 60079-7 to edition 2015.
Issue 5 -	222684600	Whole new set-up with modular approach. Assessed per latest standard editions.`
Issue 6 -	224206700-3	Actuator types SQVEx and SQRVEx with integral controls type ACVExC 01.2 and motor types VDY, VSY, SDY, SSY are added. Wall Bracket with integral controls type ACVExC 01.2 is added.
Issue 7-	227080900-2	Introduction of a bypass for power failure option.

General product information:

Part-turn actuator types SQEx********, SQREx********, SQVEx******** and SQRVEx******** are intended to operate industrial valves.
The actuators can be provided without or with integral controls. Integral controls can also be provided, separately from the actuator, on the Wall Bracket type WHEx01.1**.

The actuators and wall bracket are assemblies of different modules each with their own enclosure and function.

The part-turn actuators in version AUMA NORM comprise a motor, a gear compartment, a switch compartment, and a terminal compartment (terminal connection).

The part-turn actuators in version with integral controls comprise a motor, a gear compartment, a switch compartment, a control compartment (integral controls) and a terminal compartment (terminal connection).

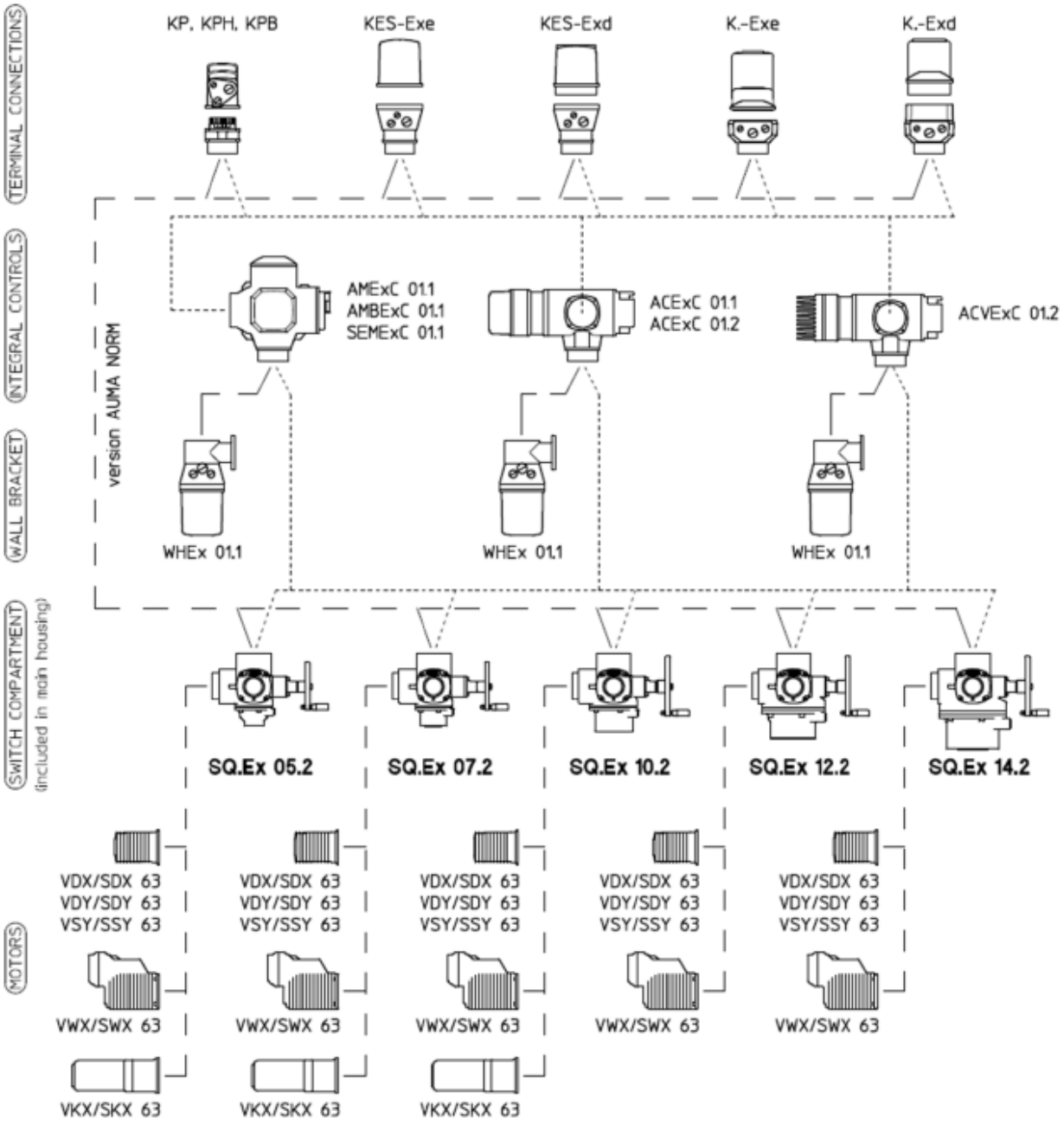
The wall bracket includes a bracket for wall mounting, a control compartment (integral controls) and 2 terminal compartments (terminal connections) one for connections with the actuator and one for the external connections.

Following types of modules with their types of protection can be part of the actuators and wall bracket:

Module / **Type**	**Applied types of protection**				
	Ex db	**Ex eb**	**Ex ib**	**Ex ic FISCO field device**	**Ex tb**
Terminal connections					
KP, KPH, KPB, KT-Exe, KL-Exe		X			X
WHEx 01.1-Exe [4)]		X			X
KES-Exe, KM-Exe		X	Optional [1)]	Optional [2)]	X
KES-Exd, KM-Exd,	X		Optional [1)]	Optional [2)]	X
KT-Exd, KL-Exd	X				X
WHEx 01.1-Exd [4)]	X				X
Integral controls [5)]					
ACExC 01.1, ACExC 01.2	X		Optional [1)]	Optional [3)]	X
AMExC 01.1 AMBExC 01.1 SEMExC 01.1	X		Optional [1)]		X
ACVExC 01.2 [7)]	X		Optional [1)]	Optional [3)]	
Switch compartment [6)]					
With control unit MWG 05.3	X				X
With control unit MS	X		X		X
Motors [6)]					
VDX 63, SDX 63, VWX 63, SWX 63	X				X
VKX 63, SKX 63	X				
VDY 63, SDY 63, VSY 63, SSY 63 [7)]	X				

Note 1): For the optional routing of Ex ib signals from the switch compartment, through the compartment of integral controls, to terminal connection of an actuator.
Note 2): For the optional routing of the Ex ic FISCO fieldbus signal from the integral controls to the terminal connection.
Note 3): When provided with the FISCO Fieldbus interface the integral controls are suitable for connection to a FISCO Fieldbus as an Ex ic FISCO field device. The interface itself is protected by the Ex db and Ex tb enclosure of the integral controls for EPL Gb and Db.
Note 1 to 3): All combinations of the two options; FISCO interface and position transmitter are permitted.
Note 4): not used in the actuator.
Note 5): not used in actuators in version AUMA NORM.
Note 6): not used in the wall bracket.
Note 7): For variable speed operation, actuators with motor types VDY, SDY, VSY and SSY shall operate with integral controls type ACVExC 01.2.

For a graphic overview see below.



Description of the modules

Terminal connection

The terminal connections provide the signal and power connections to AUMA actuators and wall bracket. For the signal and power connections terminals are available within the terminal connection enclosure. The terminal connection type KL-Exd may optionally be equipped with an interface board for Ethernet based communication technologies e.g. Profinet, Ethernet/IP or Modbus TCP/IP.

Integral controls

The integral controls include the electronics to control the actuator motions. The enclosure of integral controls is on one side connected to the switch compartment or to the wall bracket and on the other side to the terminal connections. Optionally integral controls types ACExC01.1, ACExC01.2 and ACVExC 01.2 are provided with a FISCO interface. The integral controls type ACExC 01.2 is optionally provided with a bypass for power failure.

The variable speed actuators types SQVEx and SQRVEx are operated by the integral controls type ACVExC 01.2. The variable speed is achieved by the frequency converter which is installed within the Ex db compartment of the integral controls.

The motor of variable speed actuators and the frequency converter within the ACVExC 01.2 are thermally protected by the TMS 02.1 or TMS 02.2 module mounted in these integral controls with a degree of reliability of the system classified as Safety Integrity Level 1 (SIL 1).

An optional heater can be installed to avoid condensation.

Switch compartment

The switch compartment contains the signaling parts of the actuator, like for torque and valve position and can be provided with control unit MS or MWG 05.3.

The switch compartment with control unit type MS is optionally provided with position transmitter type RWG5020.2Ex, in type of protection Ex ib.

An optional heater can be installed to avoid condensation.

Motor

The motors are providing the power to drive the actuator. The motor shaft is connected with the gear module. The signal and power connections of the motors are provided through one or two bushings into the switch compartment.

An optional heater can be installed to avoid condensation.

In order to guarantee the temperature class and maximum surface temperature, the AC motors are equipped either with thermo switches or PTC's, three for 3-ph (connected in series) and one for 1-ph motors. The DC motors are equipped with thermo switches only. Motors are available with these elements with either a low or a high tripping temperature.

As an option, all motors may be equipped with sensors (e.g. a thermo-sensor to monitor the housing temperature close to the gear compartment, a position switch for detection of hand wheel mode).

Gear unit

The gear compartment is a non-electrical part. The gears inside transfer power from the motor to the valve.

The actuator consists of both electrical and non-electrical parts. This report covers the electrical parts, taken into account the effects of the heat dissipation from the non-electrical parts.

Separately certified parts

Following separately certified parts can be used as part of the equipment. The full specifications of these parts are given in the test report.

Module	Separately certified parts
Terminal connection	Ex e terminals
Integral controls	TMS 02.1 or TMS 02.2 module
Motor and Switch compartment	Bushing(s)

Installation instructions

For actuators without control by the integral control or wall bracket: The PTC's or thermo switches of the motor shall be connected to a suitable control unit, switching off the motor at high winding temperatures as shown in the customer wiring diagram.

For all actuators: After the motor is switched off at high winding temperatures only a manual reset/restart after the PTC's or thermo switches have cooled down is permitted.

The customer wiring diagram, in addition to the general instructions provided with the equipment, shows customer specific details.

Type designation

Actuator:

Type code:	**SQ**	**.**	**Ex**	**07**	**.2**	**-F07**	**/**	**-**	**a**	**3**	**a**	**1**
ID:	I	II	III	IV	V	VI		VII	VIII	IX	X	XI

ID	Explanation	Value	Explanation
I	General	SQ	Part-turn actuator
II	Duty	none R V RV	Short-time duty S2 Intermittent duty S4 short-time duty S2/S9 with variable speed intermittent duty S4/S5/S9 with variable speed
III	Explosion proof version	Ex	For use in environments containing flammable gas / vapour combustible dust substances
IV	Actuator size	05 07 10 12 14	Indicator for standardized actuator sizes
V	Design generation	.2	Indicator for generation series
VI	Flange size	-F**	Indicator for standardized flange sizes. The contents of ** is not relevant for explosion safety.
VII	Blank	-	not used yet
VIII	Motor	a c	Type VDX, SDX, VDY, VSY, SDY, SSY (3 ph) Type VWX, SWX (1 ph) Type VKX, SKX (DC)
IX	Terminal connection	3 4	Ex e: Type KP, KPH, KPB, KES-Exe, K.-Exe Ex d: Type KES-Exd, K.-Exd
X	Position transmitter	a b	without RWG5020.2Ex with RWG5020.2Ex (Ex ib)
XI	Ex-Fieldbus	1 3	without Ex-Fieldbus with FISCO interface

Wall bracket

WH	**Ex**	**01**	**.1**	**/**	**-**	**-**	**3**	**a**	**1**
I	II	III	IV		V	VI	VII	VIII	IX

ID	**Explanation**	**Value**	**Explanation**	
I	General	WH	Wall bracket	
II	Explosion proof version	Ex	For use in environments containing flammable gas / vapour combustible dust substances	
III	Size	01	Indicator for standardized size	
IV	Design generation	.1	Indicator for generation series	
V	Blank	-	not used yet	
VI	Blank	-	not used yet	
VII	Terminal connections	1 2 3 4	Connections to actuator [1)] Ex d Ex e Ex e Ex d	External connections [1)] Ex e Ex d Ex e Ex d
VIII	Blank	-	not used yet	
IX	Ex-Fieldbus	1 3	without Ex-Fieldbus with FISCO Interface	

Note 1: For the combination with other types of protection see page 1.

Ex marking

The marking consists of 1, 2 or 3 lines. A line for explosive gas atmospheres applies generally

Explosive gas atmospheres

Actuator	**II 2 G**	**Ex**	**db**	**eb**	**ib**	**IIC**	**T4**	**Gb**

Additions for ATEX
II 2 G applies generally

Ex symbol
Ex applies generally

Type of protection Ex db
db applies generally

Type of protection Ex eb
eb applies with terminal connection types:
- KP, KPH, KPB, KES-Exe
- KL-Exe, KM-Exe, KT-Exe,

Type of protection Ex ib
ib applies when provided with position transmitter type RWG5020.2Ex.

Group
- IIC: motor types: VDX, SDX, VWX, SWX, VDY, VSY, SDY, SSY with T_{amb} up to +60 °C
- IIB: motor types: VDX, SDX, VWX, SWX, VDY, VSY, SDY, SSY with T_{amb} up to +80 °C
- IIB: motor types: VKX, SKX with T_{amb} up to +60 °C

Temperature class
- T4: motor types VDX, SDX, VKX, SKX, VDY, VSY, SDY, SSY with low tripping temp., T_{amb} up to +60 °C
- T3: motor types VDX, SDX, VKX, SKX, VDY, VSY, SDY, SSY with high tripping temp., T_{amb} up to +60 °C
- T3: motor types VDX, SDX, VDY, VSY, SDY, SSY with low tripping temp., T_{amb} up to +80 °C
- T4: motor types VWX, SWX with low tripping temp., T_{amb} up to +40 °C
- T3: motor types VWX, SWX with high tripping temp., T_{amb} up to +60 °C
- T3: motor types VWX, SWX with low tripping temp., T_{amb} up to +80 °C

Equipment protection level
Gb applies generally

Wall Bracket	**II 2 G**	**Ex**	**db**	**eb**	**IIC**	**T4**	**Gb**

Additions for ATEX
II 2 G applies generally

Ex symbol
Ex applies generally

Type of protection Ex db
db applies generally

Type of protection Ex eb
eb applies with terminal connection types:
- KP, KPH, KPB, KES-Exe
- KL-Exe, KM-Exe, KT-Exe,
- WHEx 01.1-Exe

Group
- IIC applies for T_{amb} up to +60 °C
- IIB applies for T_{amb} up to +80 °C

Temperature class
- T4 applies for T_{amb} up to +60 °C
- T3 applies for T_{amb} up to +80 °C

Equipment protection level
Gb applies generally

Explosive dust atmospheres

A line for explosive dust atmospheres applies to:
- actuators with motor types VDX, SDX, VWX, SWX and T_{amb} up to +60 °C
- wall brackets with T_{amb} up to +60 °C and provided with integral controls type ACExC 01.1, ACExC 01.2, AMExC 01.1 AMBExC 01.1 or SEMExC 01.1.

Actuator	**II 2 D**	**Ex**	**ib**	**tb**	**IIIC**	**T130 °C**	**Db**
Additions for ATEX II 2 D applies generally							
Ex Symbol Ex applies generally							
Type of protection Ex ib ib applies when provided with position transmitter type RWG5020.2Ex.							
Type of protection Ex tb tb applies generally							
Group IIIC applies generally							
Maximum surface temperature - T130 °C: motor types VDX, SDX with low trip. temp., T_{amb} up to +60 °C - T190 °C: motor types VDX, SDX with high trip. temp., T_{amb} up to +60 °C - T130 °C: motor types VWX, SWX with low trip. temp., T_{amb} up to +40 °C - T190 °C: motor types VWX, SWX with low trip. temp., T_{amb} up to +60 °C - T190 °C: motor types VWX, SWX with high trip. temp., T_{amb} up to +60 °C							
Equipment protection level Db applies generally							

Wall Bracket	**II 2 D**	**Ex**	**tb**	**IIIC**	**T130 °C**	**Db**
Additions for ATEX II 2 D applies generally						
Ex Symbol Ex applies generally						
Type of protection Ex tb tb applies generally						
Group IIIC applies generally						
Maximum surface temperature T130 °C applies generally						
Equipment protection level Db applies generally						

FISCO

A line for FISCO applies when provided with integral controls with the optional FISCO interface

Actuator **Wall Bracket**	**Ex ic FISCO field device**
Applies generally	

Thermal data

The limits are based on the surface temperatures and the permissible service temperatures of non-metallic parts. The most critical value is leading.

Equipment	Motor type	Group			Temperature class	Type of duty	Ambient temperature [1]
		IIB	IIC	IIIC			
Actuator in version AUMA NORM	VDX SDX	-	x	x	T4 / T130 °C [2] T3 / T190 °C [3]	S2 - 15 min S4 - 25 % S4 - 50 %	-60 °C to +60 °C
		x	-	-	T3	S2 - 15 min	-60 °C to +75 °C
	VWX SWX	-	x	x	T4 / T130 °C [2] T3 / T190 °C [3]	S2 - 10 min S4 - 20 %	-60 °C to +40 °C
		-	x	x	T3 / T190 °C	S2 - 10 min S4 - 20 %	-60 °C to +60 °C
		x	-	-	T3	S2 - 10 min	-60 °C to +80 °C
		x	-	-	T3	S4 - 20 %	-60 °C to +70 °C
	VKX SKX	x	-	-	T4 [2] T3 [3]	S2 - 15 min	-20 °C to +60 °C
	VDY SDY VSY SSY	-	x	-	T4 [2] T3 [3]	S2 - 15 min [4] S4/S5 - 25 % [4] S4/S5 - 50 % [4]	-60 °C to +60 °C
		x	-	-	T3	S2 - 15 min [4] S4/S5 - 25 % [4]	-60 °C to +70 °C
Actuator in version with integral controls - ACExC 01.1 - ACExC 01.2 - AMExC 01.1 - AMBExC 01.1 - SEMExC 01.1	VDX SDX	-	x	x	T4 / T130 °C [2] T3 / T190 °C [3]	S2 - 15 min S4 - 25 % S4 - 50 %	-60 °C to +60 °C
		x	-	-	T3	S2 - 15 min	-60 °C to +75 °C
		x	-	-	T3	S4 - 25 %	-60 °C to +65 °C
	VWX SWX	-	x	x	T4 / T130 °C [2] T3 / T190 °C [3]	S2 - 10 min S4 - 20 %	-60 °C to +40 °C
		-	x	x	T3 / T190 °C	S2 - 10 min S4 - 20 %	-60 °C to +60 °C
		x	-	-	T3	S2 - 10 min	-60 °C to +80 °C
		x	-	-	T3	S4 - 20 %	-60 °C to +70 °C
	VKX SKX	x	-	-	T4 [2] T3 [3]	S2 - 15 min	-20 °C to +60 °C
Actuator in version with integral controls - ACVExC 01.2	VDY SDY VSY SSY	-	x	-	T4 [2] T3 [3]	S2 - 15 min [4] S4/S5 - 25 % [4] S4/S5 - 50 % [4]	-60 °C to +60 °C
		x	-	-	T3	S2 - 15 min [4] S4/S5 - 25 % [4]	-60 °C to +70 °C
Wall bracket with integral controls - ACExC 01.1 - ACExC 01.2 - AMExC 01.1 - AMBExC 01.1 - SEMExC 01.1	-	-	x	x	T4 / T130 °C	-	-60 °C to +60 °C
	-	x	-	-	T3	-	-60 °C to +80 °C
Wall bracket with integral controls - ACVExC 01.2	-	-	x	-	T4	-	-60 °C to +60 °C
		x	-	-	T3	-	-60 °C to +70 °C

Note 1: the following limitations apply:

- T_{amb} limited to +60 °C in combination with the FISCO interface
- T_{amb} limited to +60 °C in combination with position transmitter RWG5020.2Ex.
- T_{amb} limited to +55 °C in combination with terminal connection KM-Ex. and type of duty S4 - 50 %
- T_{amb} limited to +65 °C in combination with terminal connection KM-Ex. and types of duty S4 - 20 % and S4 - 25 %

Note 2: applies to motors with a low tripping temperature

Note 3: applies to motors with a high tripping temperature

Note 4: Type of duty S9 included as long as it is within the limits of S2 or S4

Electrical data

Equipment	Total power consumption		Power lines[1)]	Control lines
Actuator in version AUMA NORM	max. 55 W	including heaters, excluding motor	max. 690 V max. 25 A	max. 250 V max. 10 A
Actuator with integral controls	max. 180 W	including heaters, excluding motor		
Wall bracket with integral controls	max. 140 W	including heaters		

Note 1): for actuators and wall brackets with integral controls type ACVExC 01.2, see below.

Actuators and Wall brackets with integral controls type ACVExC 01.2:

Max. nominal power PN [1)]	Input voltage range	Input frequency range
0.35 kW	110 V – 120 V AC 1ph	50 Hz – 60 Hz
0.30 kW	220 V – 240 V AC 1ph	
0.30 kW	220 V – 240 V AC 3ph	
0.40 kW	380 V – 480 V AC 3ph	

Note 1): Power at permissible average torque of a specific type of duty.

Motors:

Motor	**VDX, SDX**	**VDY,SDY, VSY, SSY**	**VWX, SWX**	**VKX, SKX**
Type	3 ph AC squirrel cage	3 ph AC squirrel cage	1 ph AC asynchronous	DC
Rated voltage max. [V]	690	690	240	240
Rated current max. [A]	25	25	25	25
Frequency [Hz]	50 or 60	up to 60	50 or 60	N/A
Insulation class	F or H	F or H	F or H	F or H
Type of connection	star or delta connection	star or delta connection	single phase	DC
Type of duty	S2, S4	S2, S4, S5, S9	S2, S4	S2

Maximum nominal power [1)]:

Motor / **Actuator**	**VDX, SDX** (3ph motor)	**VDY,SDY, VSY, SSY**	**VWX, SWX** (1ph motor)	**VKX, SKX** (DC)
SQ.Ex 05.2	0.06 kW	0.06 kW	0.06 kW	0.06 kW
SQ.Ex 07.2	0.12 kW	0.12 kW	0.12 kW	0.06 kW
SQ.Ex 10.2	0.19 kW	0.12 kW	0.19 kW	0.06 kW
SQ.Ex 12.2	0.19 kW	0.12 kW	0.19 kW	-
SQ.Ex 14.2	0.19 kW	0.12 kW	0.19 kW	-

Note 1: Power output on motor shaft at permissible average torque of a specific type of duty.

Position transmitter RWGEx5020.2Ex:

The electronic position transmitter RWGEx5020.2Ex in type of protection intrinsic safety Ex ib IIC is intended for connection to a certified intrinsically safe circuit with following maximum values:
U_i = 28.5 V; I_i = 200 mA; P_i = 0.9 W; C_i and L_i negligibly small.
The electronic position transmitter is considered as being earthed in terms of safety.