Technical data Actuator controls

General information
AMExC 01.1 actuator controls for controlling multi-turn actuators of the SAEx/SAREx .1, SAEx/SAREx .2 type ranges and part-turn actuators of the SQEx/SQREx .2 type range.

Features and functions		
Explosion protection	Standard:	I2G Ex de IIC T4 or T3 Gb II2D Ex tb IIIC T130 °C or T190 °C Db IP6x
	Option:	II2G Ex d IIC T4 or T3 Gb
Test certificate	In combination with SAEx: DEKRA 11ATEX0008 X In combination with SQEx: DEKRA 13ATEX0016 X	
Power supply	Standard voltages AC:	

3-phase AC Voltages/frequencies											
Volt	220	230	380	380	400	400	415	440	460	480	500
Hz	60	50	50	60	50	60	50	60	60	60	50

1-phase AC Voltages/frequencies				
Volt	110 – 120	110 – 120	220 – 240	220 – 240
Hz	50	60	50	60

Special voltages AC:

3-phase AC Voltages/frequencies									**1-phase AC** Voltages/frequencies	
Volt	220	240	525	575	575	600	660	690	Volt	208
Hz	50	50	50	50	60	60	50	50	Hz	60

Permissible variation of mains voltage: ±10 %
Permissible variation of mains frequency: ±5 %
Permissible variation of mains voltage: >±10 % auf Anfrage

External supply of the electronics (option)	24 V DC +20 % / –15 % Current consumption: Basic version approx. 250 A, with options up to 500 mA For external electronics supply, the power supply of actuator controls must have an enhanced isolation against mains voltage in compliance with IEC 61010-1 and the output power be limited to 150 VA.	
Current consumption	Current consumption of actuator controls depending on mains voltage: For permissible variation of mains voltage of ±10 %: • 100 to 120 V AC = max. 575 mA • 208 to 240 V AC = max. 275 mA • 380 to 690 V AC = max. 160 mA	
	Current consumption for mains voltage variation: > ±10 % on request	
Overvoltage category	Category III according to IEC 60364-4-443	
Rated power	Actuator controls are designed for nominal motor power, refer to Electrical data pertaining to the actuator	
Switchgear	Standard:	Reversing contactors (mechanically and electrically interlocked) for AUMA power classes A1/A2
	Options:	Reversing contactors (mechanically and electrically interlocked) for AUMA power classes A1/A2 with additional contacts, 1 NC + 1 NO each
		Reversing contactors (mechanically and electrically interlocked) for AUMA power class A3
		Thyristor unit for mains voltage up to 500 V AC (recommended for modulating actuators) for AUMA power classes B1,B2
	Reversing contactors are designed for a lifetime of 2 million starts. For applications requiring a high number of starts, we recommend using thyristor units. For the assignment of AUMA power classes, please refer to Electrical data pertaining to the actuator	
Control inputs	3 digital inputs: OPEN, STOP, CLOSE (via opto-isolator with one common), respect minimum pulse duration for modulating actuators	

Technical data Actuator controls

Control voltage/current consumption for control inputs	Standard:	24 V DC, current consumption: approx. 10 mA per input
	Option:	115 V AC, current consumption: approx. 15 mA per input
Status signals (output signals)	Standard:	5 output contacts: • 4 NO contacts with one common, max. 250 V AC, 0.5 A (resistive load) - Default configuration: End position CLOSED, end position OPEN, selector switch REMOTE, selector switch LOCAL • 1 potential-free change-over contact, max. 250 V AC, 0.5 A (resistive load) for collective fault signal - Default configuration: Torque fault, phase failure, motor protection tripped
	Options:	5 output contacts with integrated running indication(blinking) for directions OPEN and CLOSE in combination with blinker transmitter • 4 NO contacts with one common, max. 250 V AC, 0.5 A (resistive load) - Default configuration: End position and running indication CLOSED, end position OPEN, selector switch REMOTE, selector switch LOCAL • 1 potential-free change-over contact, max. 250 V AC, 0.5 A (resistive load) for collective fault signal - Default configuration: Torque fault, phase failure, motor protection tripped
Voltage output	Standard:	Auxiliary voltage 24 V DC: max. 50 mA for supply of control inputs, galvanically isolated from internal voltage supply.
	Option:	Auxiliary voltage 115 V AC: max. 30 mA for supply of control inputs, galvanically isolated from internal voltage supply
Local controls	Standard:	• Selector switch LOCAL - OFF - REMOTE (lockable in all three positions) • Push buttons OPEN, STOP, CLOSE • 3 indication lights: End position CLOSED (yellow), collective fault signal (red), end position OPEN (green)
	Option:	• Protection cover, lockable
Application functions	• Selectable type of seating, limit or torque seating for end position OPEN and end position CLOSED • Overload protection against excessive torques across the whole travel • Excessive torque (torque fault) can be excluded from collective fault signal. • Phase failure monitoring with automatic phase correction • Push-to-run operation or self-retaining in REMOTE • Push-to-run operation or self-retaining in LOCAL • Blinker signal from actuator (option) for running indication via indication lights of local controls can be activated/deactivated.	
Motor protection evaluation	Standard:	• Monitoring the motor temperature in combination with thermoswitches within actuator motor
	Options:	• Additional thermal overload relay in actuator controls combined with thermoswitches within actuator • PTC tripping device in combination with PTC thermistors within actuator motor
Electrical connection	Standard:	AUMA Ex plug/socket connector with screw-type terminals (KP)
	Options:	• AUMA Ex plug/socket connector with terminal blocks (KES), increased safety Ex e • AUMA Ex plug/socket connector with terminal blocks (KES), flameproof enclosure Ex d • AUMA Ex plug/socket connector (KT); screw-type motor terminals; push-in type control terminals
Threads for cable entries	Standard:	Metric threads
	Options:	Pg-threads, NPT-threads, G-threads
Wiring diagram (basic version)	MSPE310KC3--FF8EC TPA00R2AA-101-000	

Further options for version with electronic position transmitter in actuator	
Position feedback signal (option)	Analogue output E2 = 0/4 – 20 mA (load max. 500 Ω)
Wiring diagram (basic version)	MSPE310KC3--FF8EC TPA00R2AA-1E1-000

Technical data Actuator controls

Service conditions		
Use	Indoor and outdoor use permissible	
Mounting position	Any position	
Installation altitude	≤ 2 000 m above sea level > 2,000 m above sea level on request	
Ambient temperature	Standard:	–40 °C to +40 °C/+60 °C
	Options:	–60 °C to +40 °C/+60 °C, extreme low temperature version
		Low temperature versions incl. heating system for connection to external power supply 230 V AC or 115 V AC or internal version 400 V AC
Enclosure protection according to EN 60529	IP68 Terminal compartment additionally sealed against interior of actuator controls (double sealed)	
	According to AUMA definition, enclosure protection IP68 meets the following requirements: • Depth of water: maximum 8 m head of water • Duration of continuous immersion in water: Max. 96 hours • Up to 10 operations during continuous immersion • Modulating duty is not possible during continuous immersion.	
Pollution degree according to IEC 60664-1	Pollution degree 4 (when closed), pollution degree 2 (internal)	
Vibration resistance according to IEC 60068-2-6	1 g, from 10 to 200 Hz Resistant to vibration during start-up or for failures of the plant. However, a fatigue strength may not be derived from this. (Not valid in combination with gearboxes)	
Corrosion protection	Standard:	KS: Suitable for use in areas with high salinity, almost permanent condensation, and high pollution.
	Options:	KX: Suitable for use in areas with extremely high salinity, permanent condensation, and high pollution.
		KX-G: Same as KX, however aluminium-free version (outer parts)
Coating	Double layer powder coating Two-component iron-mica combination	
Colour	Standard:	AUMA silver-grey (similar to RAL 7037)
	Option:	Available colours on request

Accessories	
Wall bracket	For actuator controls mounted separately from the actuator, including plug/socket connector, connecting cable on request. Recommended for high ambient temperatures, difficult access, or heavy vibration during service. Cable length between actuator and actuator controls is max. 100 m (not suitable for version with potentiometer in the actuator). Instead of the potentiometer, the actuator has to be equipped with an electronic position transmitter.

Further information	
Weight	approx. 12 kg (including Ex-plug/socket connector with screw-type terminals)
EU Directives	ATEX Directive: (2014/34/EU) Electromagnetic Compatibility (EMC): (2014/30/EU) Low Voltage Directive: (2014/35/EU) Machinery Directive: (2006/42/EC)