

## AM 01.1/AM 02.1

### Technical data Actuator controls

#### General information

Actuator controls AM 01.1/AM 02.1 for controlling multi-turn actuators of the SA/SAR .1, SA/SAR .2 type ranges and part-turn actuators of the SQ/SQR .2 type range.

#### Features and functions

Power supply	<p>Standard voltages AC:</p> <table border="1"> <thead> <tr> <th colspan="12">3-phase AC</th> </tr> <tr> <th colspan="12">Voltages/frequencies</th> </tr> </thead> <tbody> <tr> <td>Volt</td> <td>220</td> <td>230</td> <td>380</td> <td>380</td> <td>400</td> <td>400</td> <td>415</td> <td>440</td> <td>460</td> <td>480</td> <td>500</td> </tr> <tr> <td>Hz</td> <td>60</td> <td>50</td> <td>50</td> <td>60</td> <td>50</td> <td>60</td> <td>50</td> <td>60</td> <td>60</td> <td>60</td> <td>50</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th colspan="4">1-phase AC</th> </tr> <tr> <th colspan="4">Voltages/frequencies</th> </tr> </thead> <tbody> <tr> <td>Volt</td> <td>110 – 120</td> <td>110 – 120</td> <td>220 – 240</td> </tr> <tr> <td>Hz</td> <td>50</td> <td>60</td> <td>50</td> </tr> </tbody> </table> <p>Special voltages AC:</p> <table border="1"> <thead> <tr> <th colspan="10">3-phase AC</th> <th colspan="2">1-phase AC</th> </tr> <tr> <th colspan="10">Voltages/frequencies</th> <th colspan="2">Voltages/frequencies</th> </tr> </thead> <tbody> <tr> <td>Volt</td> <td>220</td> <td>240</td> <td>525</td> <td>575</td> <td>575</td> <td>600</td> <td>660</td> <td>690</td> <td>Volt</td> <td colspan="2">208</td> </tr> <tr> <td>Hz</td> <td>50</td> <td>50</td> <td>50</td> <td>50</td> <td>60</td> <td>60</td> <td>50</td> <td>50</td> <td>Hz</td> <td colspan="2">60</td> </tr> </tbody> </table> <p>Permissible variation of mains voltage: <math>\pm 10\%</math>  Permissible variation of mains frequency: <math>\pm 5\%</math>  Further permissible variations of the mains voltage (options): <math>(-20\%/+15\%)</math>, <math>(-20\%/+10\%)</math>, <math>(-30\%/+30\%)</math>, <math>(-30\%/+10\%)</math></p>	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	Hz	50	60	50	3-phase AC										1-phase AC		Voltages/frequencies										Voltages/frequencies		Volt	220	240	525	575	575	600	660	690	Volt	208		Hz	50	50	50	50	60	60	50	50	Hz	60	
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External supply of the electronics (option)	<p>24 V DC <math>+20\%</math> / <math>-15\%</math>  Current consumption: Basic version approx. 250 mA, 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.</p>																																																																																																																
Current consumption	<p>Current consumption of controls depending on mains voltage:  For permissible variation of mains voltage of <math>\pm 10\%</math>:  100 to 120 V AC = max. 575 mA  208 to 240 V AC = max. 275 mA  380 to 690 V AC = max. 160 mA</p> <p>Current consumption for mains voltage variation: <math>&gt; \pm 10\%</math> on request</p>																																																																																																																
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	<p>Standard: Reversing contactors (mechanically and electrically interlocked) for AUMA power classes A1/A2</p> <p>Options: Reversing contactors (mechanically and electrically interlocked) for AUMA power classes A1/A2 with additional contacts, 1 NC + 1 NO each</p> <p>Reversing contactors (mechanically and electrically interlocked) for AUMA power class A3</p> <p>Thyristor unit for mains voltage up to 500 V AC (recommended for modulating actuators) for AUMA power classes B1, B2 and B3</p> <p>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, refer to the Electric data pertaining to the actuator.</p>																																																																																																																
Control inputs (control)	3 digital inputs: OPEN, STOP, CLOSE (via opto-isolator with one common), respect minimum pulse duration for modulating actuators																																																																																																																
Control voltage/current consumption for control inputs	<p>Standard: 24 V DC, current consumption: approx. 10 mA per input</p> <p>Option: 115 V AC, current consumption: approx. 15 mA per input</p>																																																																																																																

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Status signals (output signals)	Standard: 5 output contacts: <ul style="list-style-type: none"> <li>• 4 NO contacts with one common, max. 250 V AC, 0.5 A (resistive load)               <ul style="list-style-type: none"> <li>- Default configuration: End position CLOSED, end position OPEN, selector switch REMOTE, selector switch LOCAL</li> </ul> </li> <li>• 1 potential-free change-over contact, max. 250 V AC, 0.5 A (resistive load) for collective fault signal               <ul style="list-style-type: none"> <li>- Default configuration: Torque fault, phase failure, motor protection tripped</li> </ul> </li> </ul>
	Options: 5 output contacts with integrated running indication (blinking) for directions OPEN and CLOSE in combination with blinker transmitter <ul style="list-style-type: none"> <li>• 4 NO contacts with one common, max. 250 V AC, 0.5 A (resistive load)               <ul style="list-style-type: none"> <li>- Default configuration: End position and running indication CLOSED, end position OPEN, selector switch REMOTE, selector switch LOCAL</li> </ul> </li> <li>• 1 potential-free change-over contact, max. 250 V AC, 0.5 A (resistive load) for collective fault signal               <ul style="list-style-type: none"> <li>- Default configuration: Torque fault, phase failure, motor protection tripped</li> </ul> </li> </ul>
Voltage output	Standard: Auxiliary voltage 24 V DC $\pm 5\%$ , max. 50 mA for supply of control inputs, galvanically isolated from internal voltage supply
	Option: 115 V AC $\pm 10\%$ , max. 30 mA for supply of the control inputs, galvanically isolated from internal voltage supply (Not possible in combination with PTC tripping device)
Local controls	Standard: <ul style="list-style-type: none"> <li>• Selector switch LOCAL - OFF - REMOTE (lockable in all three positions)</li> <li>• Push buttons OPEN, STOP, CLOSE</li> <li>• 3 indication lights: End position CLOSED (yellow), collective fault signal (red), end position OPEN (green)</li> </ul>
	Options: <ul style="list-style-type: none"> <li>• Protection cover, lockable</li> <li>• Special colours for the 3 indication lights</li> </ul>
Application functions	<ul style="list-style-type: none"> <li>• Selectable type of seating, limit or torque seating for end position OPEN and end position CLOSED</li> <li>• Overload protection against excessive torques over the whole travel</li> <li>• Excessive torque (torque fault) can be excluded from collective fault signal.</li> <li>• Phase failure monitoring with automatic phase correction</li> <li>• Push-to-run operation or self-retaining in REMOTE</li> <li>• Push-to-run operation or self-retaining in LOCAL</li> <li>• Blinker signal from actuator (option) for running indication via indication lights of local controls can be activated/deactivated.</li> </ul>
Motor protection evaluation	Standard: <ul style="list-style-type: none"> <li>• Monitoring the motor temperature in combination with thermostiches within actuator motor</li> </ul>
	Options: <ul style="list-style-type: none"> <li>• Additional thermal overload relay in the controls in combination with thermostiches within the actuator</li> <li>• PTC tripping device in combination with PTC thermistors within actuator motor</li> </ul>
Electrical connection	Standard: AUMA plug/socket connector with screw-type connection
	Options: <ul style="list-style-type: none"> <li>• Terminals or crimp connection</li> <li>• Gold-plated control plug (sockets and plugs)</li> </ul>
Threads for cable entries	Standard: Metric threads
	Options: Pg-threads, NPT-threads, G-threads
Wiring diagram (basic version)	MSP1110KC3--F18E1 TPA00R1AA-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 $\Omega$ )
Wiring diagram (basic version)	MSP1110KC3--F18E1 TPA00R1AA-1E1-000

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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, please contact AUMA
Ambient temperature	Standard: −30 °C to +70 °C
	Options: −60 °C to +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.
Enclosure protection according to EN 60529	Standard: IP68
	Option: DS Terminal compartment additionally sealed against interior (double sealed) According to AUMA definition, enclosure protection IP68 meets the following requirements: <ul style="list-style-type: none"> <li>• Depth of water: maximum 8 m head of water</li> <li>• Duration of continuous immersion in water: Max. 96 hours</li> <li>• Up to 10 operations during immersion</li> <li>• Modulating duty is not possible during immersion.</li> </ul>
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 AM 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 AM 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. 7 kg (with AUMA plug/socket connector)
EU Directives	Electromagnetic Compatibility (EMC): (2014/30/EU) Low Voltage Directive: (2014/35/EU) Machinery Directive: (2006/42/EC)