Technical data Actuator controls AUMA MATIC

AM 01.1
AM 02.1

Actuator controls AUMA MATIC AM 01.1/AM 02.1 for controlling multi-turn actuators of the SA/SAR type range and part-turn actuators of the SG/SGR type range. For versions with fieldbus interfaces see separate documents.

Features and functions

Voltage supply

Standard voltages:

3-ph AC voltages/frequencies											**1-ph AC** voltages/frequencies		
Volt	220	230	240	380	400	415	440	460	480	500	Volt	110,115,120	220,230,240
Hz	50	50	50	50	50	50	60	60	60	50	Hz	60	50

Special voltages:

3-ph AC voltages/frequencies					**1-ph AC** voltages/frequencies	
Volt	525	575	660	690	Volt	208
Hz	50	50	50	50	Hz	60

Permissible variation of the nominal voltage: ± 10 %
Permissible variation of the mains frequency: ± 5 %

Current consumption with controls depending on mains voltage:
100 to 120 V AC = max. 575 mA
208 to 240 V AC = max. 275 mA
380 to 690 V AC = max. 160 mA

External supply of the electronics (option)

24 V DC + 20 %/– 15 %,
Current consumption: Basic version approx. 200 mA, with options up to 500 mA

Switchgear

Standard: Reversing contactors[1] (mechanically and electrically interlocked)
For motor power up to 1.5 kW, nominal motor current up to 9 A (OPEN - CLOSE duty) or 5.2 A (modulating duty)

Options: Reversing contactors[1] (mechanically and electrically interlocked)
For motor power up to 7.5 kW, nominal motor current up to 20 A (OPEN - CLOSE duty) or 18 A (modulating duty)

Thyristor unit (recommended for modulating actuators)
For motor power up to 1.5 kW, 500 V AC with internal fuses
For motor power up to 3.0 kW, 500 V AC with internal fuses
For motor power up to 5,5 kW, 500 V AC, external fuses required

Control

Standard: Control inputs 24 V DC, OPEN - STOP - CLOSE (via opto-isolator, with one common), current consumption: approx. 10 mA per input
Observe min. duration of impulse for modulating actuators

Option: Control inputs 115 V AC, OPEN - STOP - CLOSE (via opto-isolator, with one common), current consumption: approx. 15 mA per input

Output signals

Standard: 5 output relays with gold-plated contacts:
4 NO contacts with one common, max. 250 V AC, 0.5 A (resistive load)
Standard 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:
Torque fault, phase failure, motor protection tripped

Option: Signals in combination with positioner (refer to page 2):
End position OPEN, end position CLOSED (requires tandem switch within actuator)
Selector switch REMOTE, selector switch LOCAL via selector switch 2nd level
1 potential-free change-over contact, max. 250 V AC, 0.5 A (resistive load)
For collective fault signal:
torque fault, phase failure, motor protection tripped

Voltage output

Standard: Auxiliary voltage 24 V DC, max. 50 mA to supply the control inputs, galvanically isolated from internal voltage supply

Option: Auxiliary voltage 115 V AC, max. 30 mA to supply the control inputs[2], 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

1) The reversing contactors are designed for a lifetime of 2 million starts. For applications requiring a high number of starts, we recommend the use of thyristor units.

2) Not possible in combination with PTC tripping device

Functions	Standard:	Switch-off mode adjustable limit or torque seating for end position OPEN and end position CLOSED
		Overload protection against excessive torques over 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 transmitter signal of actuator can be switched on or off (option)
	Options:	Positioner[3]: Nominal position value via analogue input E1 = 0/4 – 20 mA Galvanic isolation for position nominal value (0/4 – 20 mA) and position feedback (0/4 – 20 mA) Adjustable behaviour on loss of signal Adjustable sensitivity (dead band) and pause time Positioner for Split Range operation[3]
Motor protection evaluation	Standard:	Monitoring of the motor temperature in connection with thermoswitches in the actuator motor
	Options:	Additional thermal overload relay in the controls in combination with thermoswitches within the actuator motor
		PTC tripping device in combination with PTC thermistors in the actuator motor
Electrical connection	Standard:	AUMA plug/socket connector with screw type connection: Threads for cable glands: M-threads: 1 x M20 x 1.5; 2 x M25 x 1.5 Pg-threads: 1 x Pg13.5; 2 x Pg21 NPT-threads: 1 x ½" NPT; 2 x ¾" NPT
	Options:	M-threads: 1 x M20 x 1.5; 2 x M25 x 1.5; 1 x M32 x 1.5 1 x M20 x 1.5; 1 x M25 x 1.5; 1 x M32 x 1.5
		Pg-threads: 1 x Pg13.5; 2 x Pg21; 1 x Pg29 1 x Pg13.5; 1 x Pg21; 1 x Pg29
		NPT-threads: 2 x ¾" NPT; 1 x 1¼" NPT
		G-threads: 2 x G¾"; 1 x G1"; 1 x G1¼" 2 x G¾"; 1 x G1¼"
		Special threads, other than standard mentioned above, possible
		Gold-plated control plug (pins and sockets)
		Parking frame for wall mounting of the disconnected plug
		Protection cover for plug compartment (when plug is removed)
Wiring diagram (basic version)	MSP 1110KC3--F18E1 KMS TP110/001	
Further options for version with RWG in the actuator		
Position feedback (option)	Analogue output E2 = 0/4 – 20 mA (load max. 500 Ω)	
Service conditions		
Enclosure protection according to EN 60 529	Standard:	IP 67 (when mounted)
	Options:	IP 68[4]
		Terminal compartment additionally sealed against interior (double sealed)
Corrosion protection	Standard:	KN Suitable for installation in industrial units, in water or power plants with a low pollutant concentration
	Options:	KS Suitable for installations in occasionally or permanently aggressive atmosphere with a moderate pollutant concentration (e.g. wastewater treatment plants, chemical industry)
		KX Suitable for installation in extremely aggressive atmosphere with high humidity and high pollutant concentration
		KX-G same as KX, however aluminium-free version (outer parts)
Finish coating	Standard:	Two-component iron-mica combination
	Option:	Special primer/special finish coat (customer's choice)
Colour	Standard:	AUMA silver-grey (similar to RAL 7037)
	Option:	Other colours than standard colour are possible on request

3) Requires position transmitter in actuator

4) For version in enclosure protection IP 68, higher corrosion protection KS or KX is strongly recommended.

Ambient temperature	Standard: – 25 °C to + 70 °C Options: – 40 °C to + 70 °C, low temperature version – 50 °C to + 70 °C, extreme low temperature version incl. heating system – 60 °C to + 70 °C, extreme low temperature version incl. heating system Low temperature versions incl. heating system for connection to external power supply 230 V AC or 115 V AC.
Vibration resistance[5] according to IEC 60 068-2-6	1 g, from 10 Hz to 200 Hz
Weight	Approx. 7 kg (with AUMA plug/socket connector)
Accessories	
Wall bracket[6]	AUMA MATIC mounted separately from the actuator, including plug/socket connector. Connecting cables on request. Recommended for high ambient temperatures, difficult access, or in case of heavy vibrations during service.
Further information	
EU Directives	Electromagnetic Compatibility (EMC): (89/336/EEC) Low Voltage Directive: (73/23/EEC) Machinery Directive: (98/37/EC)
Reference documents	Product description, “Actuator controls AUMA MATIC” Dimension sheets “Multi-turn actuators/part-turn actuators with integral controls AUMA MATIC”

5) Resistant to vibrations during start-up or for failures of the plant. However, a fatigue strength may not be derived from this.

6) Cable length between actuator and AUMA MATIC max. 100 m. Not suitable for version with potentiometer in the actuator. Instead of the potentiometer, an RWG has to be used in the actuator