

REGADA[®]

ELECTRIC ACTUATORS



Power in details...

products overview

STANDARD

CONTROL

According to the standard EN 15714-2 the electric actuators of STANDARD line meet the classification of the operating mode class A, in other words, they are determined to operation Open-Close, where the actuator is required to drive the valve through its entire travel from the fully open position to the fully closed position or vice-versa. In order to be handled well they are equipped with standard electromechanical control units consisting of gears, cams, switches and mechanical position indicator. They are used to control valves, such as ball valves, butterfly valves, gate valves and closing valves as well. They also meet the requirements of the class B inching/positioning, where the actuator is required to occasionally drive the valve to any position (fully open, intermediate and fully closed). They can be also equipped with position transmitters to show the output position and give feedback. Duty cycle of S2- 10 (15) minutes or S4- 25%, 6-90 c/hour could not be surpassed in neither of these two cases.

ELECTRIC ACTUATORS

STANDARD

FOR GENERAL INDUSTRY

Electric actuators STANDARD are the basic actuators manufactured with enclosure IP 54, IP 66, IP 67 and IP 68 (8m/48 hour) and designed for general industrial applications, such as water, chemical, energy industry and etc. They can be installed in usual outdoor environments or inside of buildings, indoor, without explosive atmosphere. The actuators are controlled by the electromechanical control units.



ELECTRIC ACTUATORS

STANDARD^{Ex}

FOR POTENTIALLY EXPLOSIVE ENVIRONMENT

Electric actuators STANDARD Ex line are designed for application in the environments with potentially explosive atmosphere and they are certified in accordance with requirements of the valid directive 94/9/EC. Electric actuators are designed as devices of the class II, category 2G or 2D. They can be installed in zones 1 and 2 for gases or in the zone 21 and 22 for dusts. Actuators are certified also according to the standard EN/IEC 60079-0, 60079-1, 60079-7, 60079-31 for environment with potentially explosive atmosphere. They are equipped with standard electromechanical control units in quality of actuators for a general industry.



ELECTRIC ACTUATORS

STANDARD ATOM

FOR NUCLEAR PLANTS

Electric actuators for nuclear power stations are designed to active duty located outside containment with reactors of type VVER. They can be used for the selected devices of the security class II and III (2 and 3).

The main characteristic features of the electric actuators for nuclear plants:

- 40 years lifetime
- Seismicity resistance up to 8g (within a frequency interval 4-35 Hz)
- Functional resistance to an emergency environment HELB (3-6 hours), in the fume environment with a temperature 110 °C and pressure ranged between 0,2
- Seismic group 1a



REMATIC

CONTROL

According to the standard EN 15714-2 the electric actuators REMATIC line meet the classification of the operation mode class C, in other words, they are designed for a modulating duty, where actuator is supposed to drive a valve to any position between fully open and fully closed one.

They are equipped with an electronic control system DMS3 – REMATIC loaded with digital inputs OPEN, STOP, CLOSE and one analogue input 0/4 - 20 mA or 0/2 10 V at disposal in order to control an electric actuator by the superior control system.

Feedback report to the control system is secured by a relay Ready and 2-7 signalled outputs (programmable relays) and the only analogue output 4 - 20 mA, according to the actual position. Change of the actuators mode from the analogue 4-20 mA into digital 24 V could be remote switched.

The actuators can be switched off at end positions from position or from torque that is adjustable with a program depending on the size of an actuator. Blocking of the torque at the end positions as well as during motor starting is possible in case of actuators with control system DMS3-Rematic. For position monitoring electric actuators are equipped with LED position indicator (from the size 0.1). Indication of running and failures is signalized by three LED diodes located on the control unit, at LED display or on the local control unit. Actuators are equipped with a function „Reaction to failure“ (Stop, Move to position Open, Move to position Closed or Move to defined position) and ESD function.

They are equipped with an anti-condensation system (space heater controlled by the control unit with programmatically adjustable temperature by user) in order to secure a suitable environment under a top cover.

Parameter setting is performed: by buttons and blinking LED diodes on the control board (9 functions) or via local control unit or by PC software (all functions).

Actuators can be equipped with a local control unit with LCD display for the position monitoring, diagnostics, parameterization and local control of the actuator.

Electronic control system DMS3 is available also in version MODBUS RTU or PROFIBUS DP V0/V1.

Actuators Rematic are designed for control ball valves, butterfly valves, gate valves and control valves.

FOR GENERAL INDUSTRY

ELECTRIC ACTUATORS REMATIC



Electric actuators Rematic are manufactured with enclosure IP 67 and IP 68 (8m/48 hours) so that they can be installed in various applications of general industry such as water, chemical, energy industry and etc. They meet the requirements for a modulating operation with a duty cycle S4-25%, 90 - 1200 c/hour. Larger types of actuators with a three-phase motor are equipped with reverse contactors or with a contactless switching in case of large number of closures. They are installed in usual outdoor environments or inside of buildings without explosive atmosphere.

FOR POTENTIALLY EXPLOSIVE ENVIRONMENT

ELECTRIC ACTUATORS REMATIC^{Ex}



Electric actuators Rematic Ex in explosion-proof version are designed for applications in the environments with potentially explosive atmosphere, as well as actuators Standard Ex. The actuators are certified in accordance with a valid directive 94/9/EC and standard EN/IEC 60079-0, 60079-1, 60079-7, 60079-31 as well, for the environments with potentially explosive atmosphere. They are controlled by electronic control system DMS3 – REMATIC. Larger types of actuators with a three-phase motor can be equipped with reverse contactors or contactless switching. They are installed mainly at modulating operations in an explosive environment with duty cycle S4-25%, 90 - 1200 c/hour.



ELECTRIC PART-TURN ACTUATORS

Part-turn actuators transmit torque to the valve for less than one revolution. It does not have to be capable of withstanding thrust.

They are used to control valves such as ball valves, butterfly valves, needle valves, air dampers and etc.

Torque range	4 to 1200 Nm
Operating time range	5 to 160 s/90°
Operating angle	60°, 90°, 160° to 360°
Stop ends range	60° to 90° to 120°
Mechanical connection	ISO 5211
Supply Voltage	230 V, 50/60 Hz, 400 V, 50/60 Hz 220 V, 50/60 Hz, 380 V, 50/60 Hz 120 V 50/60 Hz 24 V 50/60 Hz, 24 V DC
Control	STANDARD REMATIC
Space heater	with or without thermal switch
Local control unit	on request
Operating mode	Open - Close, S2-10 min., S4-25%, max. 6 - 90 c/hour Modulating duty, S4-25%, max. 1200 c/hour
Ambient temperature range	-25 to +55°C, -50 to + 40 °C
Corrosivity category	C3, C4
Enclosure	IP 67, IP 68 (8 m/48 hour)



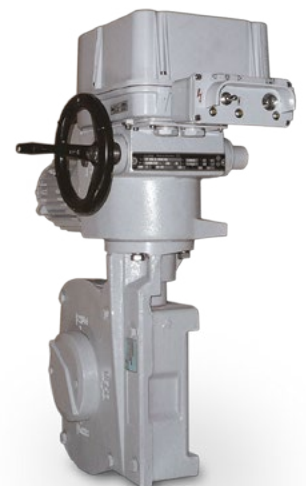
ELECTRIC PART-TURN ACTUATORS FOR HIGH TORQUES

Part-turn electric actuators for high torques consist of multi-turn electric actuators and worm gearbox. These combinations are considered as part-turn actuators according to standard EN 15714-2. Actuators model SO 2, MO 3 a MO 3.4, MO 3-Ex, MO 3.4-Ex, UP 2-Ex as well as their Rematic versions are used for connection to the gearboxes.

Gearboxes are available in version for ON-OFF operation with minimal lifetime 2500-5000 cycles or for modulating operation with lifetime of 5 million cycles.

Torque range	1000 to 200 000 Nm
Operating time range	21 to 193 s/90° depending on the type of gearbox
Operating angle	90°
Mechanical connection	flange stand with lever and pull-rod

More informations about multi-turn actuators can be found in datasheets of individual models



EXPLOSION PROOF ELECTRIC PART-TURN ACTUATORS



Type	ATEX / IECEx	Enclosure
SP 1-Ex	II 2G c Ex de IIB T6 Gb	IP 67
SP 2-Ex to 2.4-Ex	II 2G c Ex de IIB T5 Gb	IP 67
UP 0-Ex	II 2G Ex d IIB+H2 T6 Gb	IP 66, IP 67, IP 68
UP 1-Ex to UP 2.5-Ex	II 2G Ex d(de) IIC T5 Gb	IP 66, IP 67, IP 68
UP 0-Ex, SP 1-Ex	II 2D Ex tb IIIC T85°C Db	
SP 2-Ex to 2.4-Ex	II 2D Ex tb IIIC T100°C Db	
UP 1-Ex to UP 2.5-Ex	II 2D Ex tb IIIC T100°C Db	

- the same indication and enclosure also applies to REMATIC Ex version

Torque range	7,5 to 1200 Nm
Operating time range	5 to 160 s/90°
Operating angle	60°, 90°, 160° až 360°
Stop ends range	60° to 90° to 120°
Mechanical connection	ISO 5211
Supply Voltage	230 V, 50/60 Hz, 400 V, 50/60 Hz 220 V, 50/60 Hz, 380 V, 50/60 Hz 120 V 50/60 Hz 24 V 50/60 Hz, 24 V DC
Control	STANDARD (all types) REMATIC (UPR 1PA-Ex to UPR 2.5PA-Ex)
Space heater	with thermal switch
Local control unit	on request for UP 1-Ex, UP 2-Ex, UP 2.4-Ex, UP 2.5-Ex
Operating mode	Open - Close, S2-10 min., S4-25%, max. 6 - 90 c/hour Modulating duty, S4-25%, max. 1200 c/hour
Ambient temperature range	-25 to +55°C, -50 to + 40 °C
Corrosivity category	C3, C4

ELECTRIC ACTUATORS WITH STAND AND LEVER



Part-turn actuators with a stand and lever transmit a torque on a valve by a track rod, pull-rods and levers located on a valve and actuator.

They are used to control dampers, ball valves and butterfly valves on which an actuator cannot be placed directly.



Torque range	4 to 1200 Nm
Operating time range	5 to 160 s/90°
Operating angle	60°, 90°

Any type of part-turn actuator with both STANDARD and REMATIC control as well as its Ex-version can be equipped with stand and a lever.
Other specifications are identical to specifications mentioned above.



ELECTRIC MULTI-TURN ACTUATORS

Multi-turn actuators transmit torque to a valve or on gearbox for at least one revolution. These actuators, equipped with a linear adapter, may be capable of withstanding thrust. They are used to control wedging and knife gate valves and valves with a screw. They are available in version for rising or non-rising spindle.

Torque range	5 to 1000 Nm
Operating time range	10 to 95 rpm
Mechanical connection	flanges - ISO 5210, DIN 3338, ST CKBA 062-2009 <i>other non-standard construction</i>
Supply voltage	230 V, 50/60 Hz, 400 V, 50/60 Hz 220 V, 50/60 Hz, 380 V, 50/60 Hz 120 V 50/60 Hz 24 V 50/60 Hz, 24 V DC
Control	STANDARD REMATIC
Space heater	with or without thermal switch
Local control unit	on request
Operating mode	Open - Close, S2-10 min., S4-25%, max. 6-90 c/hour Modulating duty, S4-25%, max. 1200 c/hour
Ambient temperature range	-25 to +55°C, -40 to +40°C, -50 to +40°C
Corrosivity category	C3, C4
Enclosure	IIP 55, IP 67 (from MO 3 to MO 5) IP 67 for SO 2



EXPLOSION PROOF ELECTRIC MULTI-TURN ACTUATORS

Type	ATEX / IECEx	Enclosure
MO 3-Ex to MO 5-Ex	II 2G Ex de IIC T4/T5 Gb II 2D Ex tb IIIC T135°C Db	IP 66
UM 1-Ex, UM 2-Ex	II 2G Ex d(de) IIC T5 Gb II 2D Ex tb IIIC T100°C Db	IP 66, IP 67, IP 68

- the same indication and enclosure also applies to REMATIC Ex version

Torque range	7,5 to 1000 Nm
Operating speed range	10 to 95 rpm
Mechanical connection	flanges - ISO 5210, DIN 3338, ST CKBA 062-2009 <i>other non-standard construction</i>
Supply voltage	230 V, 50/60 Hz, 400 V, 50/60 Hz 220 V, 50/60 Hz, 380 V, 50/60 Hz 120 V 50/60 Hz 24 V 50/60 Hz, 24 V DC
Control	STANDARD REMATIC
Space heater	with thermal switch
Local control unit	on request
Operating mode	Open - Close, S2-10(15) min., S4-25%, max. 6-90 c/hour Modulating duty, S4-25%, max. 1200 c/hour
Ambient temperature range	-25 to +55°C, -40 to +40°C, -50 to +40°C
Corrosivity category	C3, C4



ELECTRIC LINEAR ACTUATORS



Linear actuators transmit thrust to the valve for a defined linear stroke. A combination of a multi-turn actuator plus a linear drive can be considered, for the sake of this European Standard, a linear actuator. They are used to control closing and regulating valves.



Thrust range	250 to 36 000 N (higher thrusts on request)
Operating time range	4 to 180 mm/min
Operating stroke range	25 to 100 mm
Mechanical connection	flanges, pillars or own customer version
Supply voltage	230 V, 50/60 Hz, 400 V, 50/60 Hz 220 V, 50/60 Hz, 380 V, 50/60 Hz 120 V 50/60 Hz 24 V 50/60 Hz, 24 V DC
Control	STANDARD REMATIC
Space heater	with or without thermal switch
Local control unit	on request
Operating mode	Open - Close, S2-10 min., S4-25%, max. 6-90 c/hour Modulating, S4-25%, max. 1200 c/hour
Ambient temperature range	-25 to +55°C, -40 to +40°C, -50 to +40°C
Corrosivity category	C3, C4
Enclosure	IP 54, IP 67, IP 68 (8 m/48 hour) - depending on type

EXPLOSION PROOF ELECTRIC LINEAR ACTUATORS



Type	ATEX / IECEx	Enclosure
ST 1-Ex	II 2G c Ex de IIB T5 Gb II 2D Ex tb IIIC T85°C Db	IP 67
MT 3-Ex	II 2G Ex de IIC T4/T5 Gb II 2D Ex tb IIIC T135°C Db	IP 66
UL 1-Ex, UL 2-Ex	II 2G Ex d(de) IIC T5 Gb II 2D Ex tb IIIC T100°C Db	IP 66, IP 67, IP 68
<i>- the same indication and enclosure also applies to REMATIC Ex version</i>		
Thrust range	1400 to 36 000 N	
Operating speed range	8 to 180 mm/min	
Operating stroke range	25 to 100 mm	
Mechanical connection	flanges, pillars or own customer version	
Supply voltage	230 V, 50/60 Hz, 400 V, 50/60 Hz 220 V, 50/60 Hz, 380 V, 50/60 Hz 120 V 50/60 Hz 24 V 50/60Hz, 24 V DC	
Control	STANDARD (all types) REMATIC (MTR 3PA-Ex, ULR XPA-Ex)	
Space heater	with thermal switch	
Local control unit	on request	
Operating mode	Open - Close, S2-10(15) min., S4-25%, max. 6-90 c/hour Modulating duty, S4-25%, max. 1200 c/hour	
Ambient temperature range	-25 to +55°C, -40 to +40°C, -50 to +40°C	
Corrosivity category	C3, C4	

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CATALOGUES OF ELECTRIC ACTUATORS

STANDARD STANDARD^{Ex} STANDARD
REMATIC REMATIC^{Ex} ATOM