

# rotork<sup>®</sup> Controls

## ExMax Range

Part-Turn Electric Valve Actuators with Spring-Return Option  
5 – 150 Nm, 45 – 1350 lbf.in



Keeping the World Flowing

# rotork®

Keeping the World Flowing



**RELIABILITY  
IN FLOW CONTROL  
CRITICAL  
APPLICATIONS**



## **RELIABLE OPERATION WHEN IT MATTERS**

Assured reliability for critical applications and environments. Whether used 24/7 or infrequently, Rotork products will operate reliably and efficiently when called upon.

## **QUALITY-DRIVEN GLOBAL MANUFACTURING**

Products designed with 60 years of industry and application knowledge.

Research and development across all our facilities ensures cutting edge products are available for every application.

## **CUSTOMER-FOCUSED SERVICE WORLDWIDE SUPPORT**

Solving customer challenges and developing new solutions. From initial enquiry through to product installation, long-term after-sales care and Client Support Programmes (CSP).

## **LOW COST OF OWNERSHIP**

Long-term reliability prolongs service life. Rotork helps to reduce long term cost of ownership and provides greater efficiency to process and plant.

# ExMax Range

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## COMPREHENSIVE PRODUCT RANGE SERVING MULTIPLE INDUSTRIES

Improved efficiency, assured safety and environmental protection.

Rotork products and services are used in the Power, Oil & Gas, Water & Wastewater, HVAC, Marine, Mining, Food & Beverage, Pharmaceutical and Chemical industries around the world.

## GLOBAL PRESENCE LOCAL SERVICE

Global company with local support.

Manufacturing sites, offices and *Centres of Excellence* throughout the world provide unrivalled customer services and fast delivery.

## MARKET LEADER TECHNICAL INNOVATOR

The recognised market leader for 60 years.

Our customers have relied upon Rotork for innovative solutions to safely manage the flow of liquids, gases and powders.

## CORPORATE SOCIAL RESPONSIBILITY

A responsible business leads to being the best business.

We are socially, ethically, environmentally responsible and committed to embedding CSR across all our processes and ways of working.

## ExMax Features

**Robust, compact and lightweight design for ease of installation**

**Mechanical position indication for direct reference of valve position**

**Explosionproof to international standards**

**Suitable for outdoor use with standard IP66/67 dust and watertight enclosure**

**Spring-return fail-safe option**

**24-240 VAC/VDC universal power supply**

**On/off and modulating duty as standard**

**Auto setup for ease of commissioning**

**Process optimisation achieved through five on-site selectable speeds**

**Environmental protection options available**

**Non-intrusive, environmentally sealed flying lead electrical connection**

**Standard ISO flanges available**

### Options

- Detachable manual override
- RedMax ex-proof and InMax non-ex-proof versions
- Stainless steel version
- Offshore / marine coating
- Optional integrated position indication at 5° and 85°
- External adjustable position indication accessory
- Fast spring-return time available
- Custom adaption service available



**Backed by Rotork Global Support**



Valve actuators for **hazardous location** part-turn **valve control** applications

# Valve Automation

## Accessories

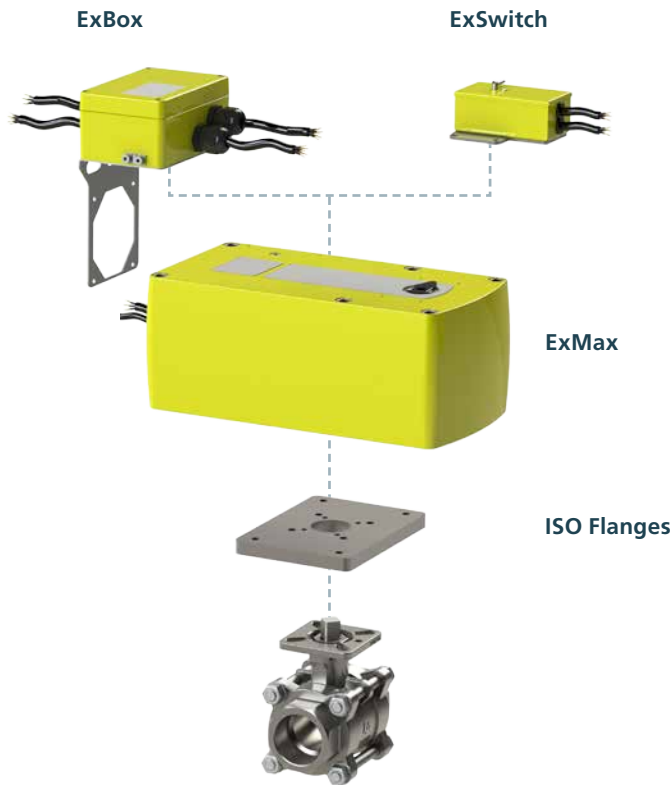
Optional accessories such as the ExBox and ExSwitch (shown here with optional mounting brackets) are available to mount remotely or directly to the actuator.

## Actuator


The ExMax is a part-turn valve actuator available in small 'S' or medium 'M' size.

## Linkages

ISO flanges (F05/F07, FA05/FA07), with or without an angle rotation limiter, are available upon request.



## Environmental Protection Options

Features ..Max-...VA/CT	
Special Options	Basics ..Max-...VA/CT
	<p><b>VA:</b></p> <ul style="list-style-type: none"> <li>Housing material in stainless steel similar AISI 316, some parts nickel plated</li> </ul> <p><b>CT:</b></p> <ul style="list-style-type: none"> <li>Increased protection painted aluminium housing, resistant against corrosive and/or maritime atmosphere</li> <li>Cable glands brass nickel plated</li> <li>Screws in stainless steel</li> </ul> <p><b>For general basics see ..Max part-turn actuators.</b></p>

..Max-..options	
Type	Description / Technical data
..Max-...-VAS	Housing material of ..Max part-turn actuator size S in stainless steel similar AISI 316, some parts nickel plated (surcharge)
..Max-...-VAMH	Enclosure for ..Max part-turn actuator size M, made of stainless steel AISI 316 L
..Max-...-CTS	Aluminium housing of ..Max part-turn actuator size S painted with increased protection paint, resistant against corrosive and maritime atmosphere, some parts nickel plated (surcharge)
..Max-...-CTM	Aluminium housing of ..Max part-turn actuator size M with increased protection paint, resistant against corrosive and maritime atmosphere, some parts nickel plated (surcharge)
..Box-.../VA	Ex-e terminal-box, housing made of stainless-steel type AISI 316 L, some parts nickel plated (surcharge)
..Box-.../CT	Ex-e terminal-box, housing painted with increased protection paint, resistant against corrosive/maritime atmosphere, some parts nickel plated (surcharge)
..Switch-CT	Auxiliary switch for ..Max., housing with increased protection paint, resistant against corrosive/maritime atmosphere, some parts nickel plated (surcharge)
MKK- S/VA	Mounting bracket, made of stainless-steel suitable for ..Box...VA for direct coupling to ..Max actuators size S
MKK- M/VA	Mounting bracket, made of stainless-steel suitable for ..Box...VA for direct coupling to ..Max actuators size M
MKK-VAMH/VA	Mounting bracket, made of stainless-steel suitable for ..Box...VA for coupling to ..Max actuators size M in combination with enclosure VAMH
Kit-S8-Max	Cable glands 2 x M16 x 1,5 mm Ex-e standard Ø 5-10 mm in brass nickel plated, 1 blind plug for replace the plastic version of part-turn actuator ..Max
Kit-S8-Box	Cable glands 4 x M20 x 1,5 mm Ex-e Ø 6-13 mm, brass nickel plated, for replace the plastic version of terminal ..Box
Kit-Offs-PMC-1C	Protection metal conduit incl. SS terminal box and glands for 1 armoured cable
Kit-Offs-PMC-2C	Protection metal conduit incl. SS terminal box and glands for 2 armoured cables
WS-S	Weather shield in stainless steel, suitable for all ..Max actuators size S
WS-M	Weather shield in stainless steel, suitable for all ..Max actuators size M



## Part-turn Actuators Size "S" 5 – 30 Nm

ExMax actuators are designed for ball valves, throttle valves and other part-turn applications.



### Standard features for all size S

- 24...240 VAC/VDC self adaptable power supply
- Up to 5 different running times adjustable on site
- 95° angle of rotation (5° for pretension)
- 100% overload protected
- Aluminium housing IP66, cable ~1 m
- -40 to +40/+50 °C, integrated heater
- Emergency manual override
- Squared shaft connection 12 × 12 mm
- Dimensions (H × W × D) 210 × 95 × 80 mm
- 1 m cable flying lead connection
- ISO flange F05 / F07 or FA05 / FA07 available on request\*
- Optional flange available with angle rotation limiter for 90 degree travel\*
- Class A and B (on/off and inching) duty available\*\*
- Modulating duty available

### Environmental certification

- Zone 1, 2, 21, 22 gas and dust
- ATEX, IECEx
- Regional certification available, see [www.schischek.com](http://www.schischek.com) for details

### Product codes/definitions

#### Example Model Numbers

**Ex** - **Max** - **5.10** - **SF**

#### Actuator Type

- Ex = For use in zone 1, 2, 21, 22
- Red = For use in zone 2, 22
- In = For use in non-classified industrial areas

#### Actuator Range

Max is a rotary (part-turn) actuator for dampers or rotary valves, such as ball or butterfly valves

#### Torque Settings (Nm)

Two numbers mean that the torque is selectable on site (e.g. 5 or 10 Nm)

#### Options

- S = Optional integrated position indication at 5° and 85°
- F = Spring-return
- Y = 0-10 VDC or 4-20 mA control and feedback signal
- F/F1 = Actuator with fast spring-return (number after letter F shows closing time in seconds, e.g. in 1 second)
- C = Actuator for direct communication with Ex/InReg controller
- VAS = Stainless steel housing
- CTS = Aluminium housing with increased protection paint
- A = UL and CSA certified variant

\*Please state at time of order whether this is required.

\*\* to EN 15714-2 Industrial valves - Actuators

Part 2: Electric actuators for industrial valves - Basic requirements. For 24V at 7.5s runtime please contact Rotork.



## Size "S" Actuator Specification and Accessories

### Part-turn actuators without spring-return, 24 to 240 VAC/DC, for zone 1, 2, 21, 22

Type (ATEX and IECEx)	Type (UL and CSA)	Torque		Running time 90°	Spring-return	Control mode	Feedback
		Nm	lbf.in				
ExMax- 5.10	ExMax- 45.90-A	5 / 10	45 / 90	3/15/30/60/120 sec.	-	On-off, 3-pos	
ExMax-15.30	ExMax-135.270-A	15 / 30	135 / 270	3/15/30/60/120 sec.	-	On-off, 3-pos	
ExMax- 5.10-S	ExMax- 45.90-S-A	5 / 10	45 / 90	3/15/30/60/120 sec.	-	On-off, 3-pos	2 x aux. switches (5°/85°)
ExMax-15.30-S	ExMax-135.270-S-A	15 / 30	135 / 270	3/15/30/60/120 sec.	-	On-off, 3-pos	2 x aux. switches (5°/85°)
ExMax- 5.10-Y	ExMax- 45.90-Y-A	5 / 10	45 / 90	7,5/15/30/60/120 sec.	-	3-pos, 0-10 VDC, 4-20 mA	0-10 VDC, 4-20 mA
ExMax-15.30-Y	ExMax-135.270-Y-A	15 / 30	135 / 270	7,5/15/30/60/120 sec.	-	3-pos, 0-10 VDC, 4-20 mA	0-10 VDC, 4-20 mA

### Part-turn actuators with spring-return, 24 to 240 VAC/DC, for zone 1, 2, 21, 22

Type (ATEX and IECEx)	Type (UL and CSA)	Torque		Running time 90°	Spring-return	Control mode	Feedback
		Nm	lbf.in				
ExMax-5.10- F	ExMax-45.90-F-A	5 / 10	45 / 90	3/15/30/60/120 sec.	~ 3 sec. / 10 sec.	On-off, 3-pos	-
ExMax- 15- F	ExMax- 135-F-A	15	135	3/15/30/60/120 sec.	~ 3 sec. / 10 sec.	On-off, 3-pos	-
ExMax-5.10-SF	ExMax-45.90-SF-A	5 / 10	45 / 90	3/15/30/60/120 sec.	~ 3 sec. / 10 sec.	On-off, 3-pos	2 x aux. switches (5°/85°)
ExMax- 15-SF	ExMax- 135-SF-A	15	135	3/15/30/60/120 sec.	~ 3 sec. / 10 sec.	On-off, 3-pos	2 x aux. switches (5°/85°)
ExMax-5.10-YF	ExMax-45.90-YF-A	5 / 10	45 / 90	7,5/15/30/60/120 sec.	~ 3 sec. / 10 sec.	3-pos, 0-10 VDC, 4-20 mA	0-10 VDC, 4-20 mA
ExMax- 15-YF	ExMax- 135-YF-A	15	135	7,5/15/30/60/120 sec.	~ 3 sec. / 10 sec.	3-pos, 0-10 VDC, 4-20 mA	0-10 VDC, 4-20 mA

### Part-turn actuators with 1 sec. spring-return, 24 to 240 VAC/DC, for zone 1, 2, 21, 22

Type (ATEX and IECEx)	Type (UL and CSA)	Torque		Running time 90°	Spring-return	Control mode	Feedback
		Nm	lbf.in				
ExMax- 8- F1	ExMax- 72-F1-A	8	72	3/15/30/60/120 sec.	≤ 1 sec.	On-off	-
ExMax-15- F1	ExMax-135-F1-A	15	135	3/15/30/60/120 sec.	≤ 1 sec.	On-off	-
ExMax- 8-SF1	ExMax- 72-SF1-A	8	72	3/15/30/60/120 sec.	≤ 1 sec.	On-off	2 x aux. switches (5°/85°)
ExMax-15-SF1	ExMax-135-SF1-A	15	135	3/15/30/60/120 sec.	≤ 1 sec.	On-off	2 x aux. switches (5°/85°)

### Accessories

Type	Technical data
ExSwitch	Externally mountable, on site adjustable Ex-d auxiliary switch box with 2 potential free contacts, adaptable to ExMax-... actuators
ExBox-3P	Ex-e terminal box connectable to ExMax-... actuators with 1 cable for On-off or 3-pos operation
ExBox-3P/SW	Ex-e terminal box connectable to ExMax-... actuators with 1 cable for On-off or 3-pos operation + 2 cable for external aux. switches type ExSwitch
ExBox-Y/S	Ex-e terminal box connectable to ExMax-... actuators with 2 cable, for modulating operation or 3-pos + integrated switches (HS)
ExBox-Y/S/SW	Ex-e terminal box connectable to ExMax-... actuators with 2 cable, for modulating or 3-pos operation with feedback signal + 2 cable for external aux. switches
MKK-S	Mounting bracket for ...Box-terminal boxes for direct coupling to ...Max... actuators size S
HV-SK, HV-SL	Manual override, connectable to actuators size S. HV-SK = short version, HV-SL = long version for add. mounting of ..Box/..Switch (not suitable for ..Max-...-F1)
AR-12-xx	Squared reduction part from 12 x 12 mm to shafts with 11 mm (type AR-12-11), 10 mm (type AR-12-10), 8 mm (type AR-12-08)
DWB-S	Angle rotation limiter for mounting on actuator size S (details on request)
Stick (UL & CSA model only)	Stick to change parameter and factory settings such as running time, torque, spring return time, force control and write protection depending on actuator

# Part-turn Actuators Size "M" 30 – 150 Nm

ExMax are designed for ball valves, throttle valves and other part-turn applications.



### Standard features for all size M

- 24...240 VAC/VDC self adaptable power supply
- Up to 5 different running times adjustable on site
- 95° angle of rotation (5° for pretension)
- 100% overload protected
- Aluminium housing IP66/67, cable ~1 m
- -40 to +40/+50 °C, integrated heater
- Emergency manual override
- Squared shaft connection 16 x 16 mm
- Dimensions (H x W x D) 289 x 149 x 116 mm
- 1 m cable flying lead connection
- ISO flange F05 / F07 or FA05 / FA07 available on request\*
- Optional flange available with angle rotation limiter for 90 degree travel\*
- Class A and B (on/off and inching) duty available\*\*
- Modulating duty available

### Environmental certification

- Zone 1, 2, 21, 22 gas and dust
- ATEX, IECEx
- Regional certification available, see [www.schischek.com](http://www.schischek.com) for details

### Product codes / definitions

#### Example Model Numbers

**Ex** - **Max** - **50.75** - **SF**

#### Actuator Type

- Ex = For use in zone 1, 2, 21, 22
- Red = For use in zone 2, 22
- In = For use in non-classified industrial areas

#### Actuator Range

Max is a rotary (part-turn) actuator for dampers or rotary valves, such as ball or butterfly valves

#### Torque Settings (Nm)

Two numbers mean that the torque is selectable on site (e.g. 50 or 75 Nm)

#### Options

- S = Optional integrated position indication at 5° and 85°
- F = Spring-return
- Y = 0-10 VDC or 4-20 mA control and feedback signal
- F/F3 = Actuator with fast spring-return (number after letter F shows closing time in seconds, e.g. 3 seconds)
- C = Actuator for direct communication with Ex/InReg controller
- VAM = Stainless steel housing
- CTM = Aluminium housing with increased protection paint
- A = UL and CSA certified variant

\*Please state at time of order whether this is required.

\*\* to EN 15714-2 Industrial valves - Actuators

Part 2: Electric actuators for industrial valves - Basic requirements. For 24V at 7.5s runtime please contact Rotork.

## Size "M" Actuator Specification and Accessories

Part-turn actuators without spring-return, 24 to 240 VAC/DC, for zone 1, 2, 21, 22

Type (ATEX and IECEx)	Type (UL and CSA)	Torque		Running time 90°	Spring-return	Control mode	Feedback
		Nm	lbf.in				
ExMax-50.75	ExMax-450.675-A	50 / 75	450 / 675	40/60/90/120/150 sec.	-	On-off, 3-pos	-
ExMax- 100	ExMax- 900-A	100	900	40/60/90/120/150 sec.	-	On-off, 3-pos	-
ExMax- 150	ExMax- 1350-A	150	1,350	40/60/90/120 sec.	-	On-off, 3-pos	-
ExMax-50.75-S	ExMax-450.675-S-A	50 / 75	450 / 675	40/60/90/120/150 sec.	-	On-off, 3-pos	2 x aux. switches (5°/85°)
ExMax- 100-S	ExMax- 900-S-A	100	900	40/60/90/120/150 sec.	-	On-off, 3-pos	2 x aux. switches (5°/85°)
ExMax- 150-S	ExMax- 1350-S-A	150	1,350	40/60/90/120 sec.	-	On-off, 3-pos	2 x aux. switches (5°/85°)
ExMax-50.75-Y	ExMax-450.675-Y-A	50 / 75	450 / 675	40/60/90/120/150 sec.	-	3-pos, 0-10 VDC, 4-20 mA	0-10 VDC, 4-20 mA
ExMax- 100-Y	ExMax- 900-Y-A	100	900	40/60/90/120/150 sec.	-	3-pos, 0-10 VDC, 4-20 mA	0-10 VDC, 4-20 mA

Part-turn actuators with spring-return, 24 to 240 VAC/DC, for zone 1, 2, 21, 22

Type (ATEX and IECEx)	Type (UL and CSA)	Torque		Running time 90°	Spring-return	Control mode	Feedback
		Nm	lbf.in				
ExMax-30- F	ExMax-270-F-A	30	270	40/60/90/120/150 sec.	~ 20 sec.	On-off, 3-pos	-
ExMax-50- F	ExMax-450-F-A	50	450	40/60/90/120/150 sec.	~ 20 sec.	On-off, 3-pos	-
ExMax-60- F	ExMax-540-F-A	60	540	40/60/90/120 sec.	~ 20 sec.	On-off, 3-pos	-
ExMax-30-SF	ExMax-270-SF-A	30	270	40/60/90/120/150 sec.	~ 20 sec.	On-off, 3-pos	2 x aux. switches (5°/85°)
ExMax-50-SF	ExMax-450-SF-A	50	450	40/60/90/120/150 sec.	~ 20 sec.	On-off, 3-pos	2 x aux. switches (5°/85°)
ExMax-60-SF	ExMax-540-SF-A	60	540	40/60/90/120 sec.	~ 20 sec.	On-off, 3-pos	2 x aux. switches (5°/85°)
ExMax-30-YF	ExMax-270-YF-A	30	270	40/60/90/120/150 sec.	~ 20 sec.	3-pos, 0-10 VDC, 4-20 mA	0-10 VDC, 4-20 mA
ExMax-50-YF	ExMax-450-YF-A	50	450	40/60/90/120/150 sec.	~ 20 sec.	3-pos, 0-10 VDC, 4-20 mA	0-10 VDC, 4-20 mA

Part-turn actuators with 3 sec. spring-return, 24 to 240 VAC/DC, for zone 1, 2, 21, 22

Type (ATEX and IECEx)	Type (UL and CSA)	Torque		Running time 90°	Spring-return	Control mode	Feedback
		Nm	lbf.in				
ExMax-30- F3	ExMax-270-F3-A	30	270	40/60/90/120/150 sec.	≤ 3 sec.	On-off	-
ExMax-50- F3	ExMax-450-F3-A	50	450	40/60/90/120/150 sec.	≤ 3 sec.	On-off	-
ExMax-30-SF3	ExMax-270-SF3-A	30	270	40/60/90/120/150 sec.	≤ 3 sec.	On-off	2 x aux. switches (5°/85°)
ExMax-50-SF3	ExMax-450-SF3-A	50	450	40/60/90/120/150 sec.	≤ 3 sec.	On-off	2 x aux. switches (5°/85°)

### Accessories

Type	Technical data
ExSwitch	Externally mountable, on site adjustable Ex-d auxiliary switch box with 2 potential free contacts, adaptable to ExMax-... actuators
ExBox-3P	Ex-e terminal box connectable to ExMax-... actuators with 1 cable for On-off or 3-pos operation
ExBox-3P/SW	Ex-e terminal box connectable to ExMax-... actuators with 1 cable for On-off or 3-pos operation + 2 cable for external aux. switches type ExSwitch
ExBox-Y/S	Ex-e terminal box connectable to ExMax-... actuators with 2 cable, for modulating operation or 3-pos + integrated switches (HS)
ExBox-Y/S/SW	Ex-e terminal box connectable to ExMax-... actuators with 2 cable, for modulating or 3-pos operation with feedback signal + 2 cable for external aux. switches
MKK-M	Mounting bracket for ...Box-terminal boxes for direct coupling to ...ExMax... actuators size M
HV-MK	Manual override, connectable to actuators size M (not suitable for ..Max-...F3)
AR-16-xx	Squared reduction part from 16 x 16 mm to shafts with 14 mm (type AR-16-14), 12 mm (type AR-16-12)
DWB-M	Angle rotation limiter for mounting on actuator size M
Stick (UL & CSA model only)	Stick to change parameter and factory settings such as running time, torque, spring return time, force control and write protection depending on actuator

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[www.rotork.com](http://www.rotork.com)

A full listing of our worldwide sales and service network is available on our website.

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