



RedMax 1/4 turn actuators - size M

Electrical, explosion proof rotary actuators with integrated Ex-i circuit (optional) On-off / 3-pos. control mode, 24...240 VAC/DC, 95° angle of rotation incl. 5° pretension 30 – 50 Nm with safety operation (spring return), optional with auxiliary switches ATEX tested in acc. with directive 2014/34/EU for zone 2, 22

RedMax F3
RedMax SF3
RedMax BF3
RedMax CTM
RedMax VAM

Subject to change!

Compact. Easy installation. Universal. Cost effective. Safe.

Туре	Torque	Supply	Motor running time	Spring return	Control mo	ode Feedback	Wiring diagram
RedMax- 30 - F3	30 Nm	24240 VAC/DC	40 / 60 / 90 / 120 / 150 s/90°	≤3 s/90°	On-off	-	SB 2.4 + 2.5
RedMax- 50 - F3	50 Nm	24240 VAC/DC	40 / 60 / 90 / 120 / 150 s/90°	≤ 3 s/90°	On-off	-	SB 2.4 + 2.5
RedMax- 30 - SF3	30 Nm	24240 VAC/DC	40 / 60 / 90 / 120 / 150 s/90°	≤ 3 s/90°	On-off	2 × aux. switches	SB 2.4 / 2.5 + 3.2
RedMax- 50 - SF3	50 Nm	24240 VAC/DC	40 / 60 / 90 / 120 / 150 s/90°	≤ 3 s/90°	On-off	2 × aux. switches	SB 2.4/2.5 + 3.2
RedMax- 30 - BF3	30 Nm	24240 VAC/DC	40 / 60 / 90 / 120 / 150 s/90°	≤ 3 s/90°	On-off	2 × aux. switches + Ex-i tripping circuit	SB 2.4/2.5 + 7.4
RedMax- 50 - BF3	50 Nm	24240 VAC/DC	40 / 60 / 90 / 120 / 150 s/90°	≤ 3 s/90°	On-off	2 × aux. switches + Ex-i tripping circuit	SB 2.4/2.5 + 7.4
RedMax CTM Types as above with aluminium housing and seawater resistant coating (cable glands brass nickel-plated)							

RedMax- ... - VAM Types as above with stainless steel housing for aggressive ambient (cable glands brass nickel-plated)

Product views and applications

Fire damper











Description

The RedMax actuators are a revolution for safety, fire and shut-off dampers, VAV systems, ball valves, throttle valves and other motorized applications for HVAC systems in chemical, pharmaceutical, industrial and offshore/onshore plants, for use in Ex-areas zone 2 (gas) and zone 22 (dust).

Highest protection class (ATEX) and IP67 protection, small dimensions, only 9,5 kg weight, universal functions and technical data, an integrated heater and an optional stainless steel housing guarantee safe operation even under difficult environmental conditions. High quality brushless motors guarantee long life.

All actuators are programmable and adjustable on site. Special tools or equipment are not required. Motor running times are selectable or adjustable on site. The integrated universal power supply is self adaptable to input voltages in the range of 24...240 VAC/DC. The actuators are 100 % overload protected.

...Max-...-F3 actuators are equipped with spring return fail safe function. Additionally the ...Max-...-SF3 and ...-BF3 actuators are equipped with 2 integrated, potential free auxiliary switches each and ...Max-...-BF3 comes with an intrinsically safe tripping circuit for connecting the ...Pro-TT-... safety temperature trigger. Standard shaft connection is a double square direct coupling with 16 × 16 mm.

Different accessories are available to adapt auxiliary switches, terminal boxes or adaptions for ball valves and throttle valves and other armatures.

Highlights

- ▶ For all type of gas, mists, vapours and dust for use in zone 2 and 22
- ► Universal supply unit from 24...240 VAC/DC
- ▶ Motor running times 40-60-90-120-150 s/90° adjustable on site
- ▶ On-off control with spring return function, running time $\leq 3 \text{ s}/90^{\circ}$
- Ex-i circuit for direct connection of the ...Pro-TT-... safety temperature trigger (type ...-BF3)
- 2 integrated auxiliary switches, switching at 5° and 85° angle of rotation
- ► 30-50 Nm actuators in the same housing size
- 100 % overload protected
- ► Compact design and small dimension (L × W × H ~ 288 × 149 × 116 mm)
- ▶ Direct coupling to the damper shaft with double square connection 16 × 16 mm
- ▶ 95° angle of rotation inclusive 5° pretension
- Robust aluminium housing (optional with seawater resistant coating) or in stainless steel
- ► IP67 protection
- ► Simple manual override included + preparation for comfortable manual override
- Gear made of stainless steel and sinter metal
- ► Weight only ~ 9,5 kg
- ► Integrated heater for ambient temperatures down to -40 °C
- Integrated safety temperature sensor
- Integrated equipment for manual adjustment (push button, lamp, switch)
- Preparation for adaptable and adjustable auxiliary switches type ... Switch
- Wide range of accessories

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Ex	RedMaxF3

RedMax-...-BF3



Special option

... -CTM



Torque motor (min.) 30 Nm 50 Nm 30 resp. 50 Nm 30 resp. 50 Nm Torque plockde In blockade and end positions foruce are higher finan above specified or rouges for motor and spring. Immediate and and positions foruce are higher finan above specified or rouges for motor and spring. Dimensioning of external load Upon spring return the external load should be max. 80 % of torque spring (F), but Immediate and the above specified rouges for motor and spring. Sprip voltage / frequency 24.240 VACOC, ± 10 %, self adgatable, frequency 5060 H2 ± 20 % Immediate and the above specified rouge has a spring self. Protection lass Gignorided) Spring return set to the damper value indication Immediate and the above specified rouge has a spring self. Motor Spring return upon voltage interruption or opening of line 3, response time up to 1 sec. after voltage interruption Immediate and the above spring return upon voltage interruption or opening of line 3, response time up to 1 sec. after voltage interruption Spring return rouning time (F) \$ s /90° S s /90° Safety operations at 3 sec. (F) Immin. 100 acc. to construction of damper and antibient. Consider minimum external load! Aux. switches _xSF3,BF3 Intringer davatage switching at 5° and SS° anad SS° and SS° a	Technical data	RedMax- 30 - F3	RedMax- 50 - F3	RedMax SF3	RedMax BF3			
Torque blockade In blockade and end positions torques are higher than above specified torques for motor and spring. Dimensioning of external load should be max. 80 % of torque spring (F), but min.8 km k	Torque motor (min.)	30 Nm	50 Nm	30 resp. 50 Nm	30 resp. 50 Nm			
Dimensioning of external load Upon spring return the external load should be max. 80 % of torque spring (F), but min. 8 Nm min. 8 resp. 15 Nm min. 8 resp. 15 Nm Supply voltage / frequency 24240 VAC/DC. 1 01 %, self adaptable, frequency 5060 Hz ± 20 % Power.consumption max. starting currents see ①Extra information (in acc. with voltage, I tartet > I	Torque spring (F)	min. 30 Nm	min. 50 Nm	min. 30 resp. 50 Nm	min. 30 resp. 50 Nm			
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Spring return (F) spring return upon voltage interruption or opening of line 3, response time up to 1 sec. after voltage interruption Spring return running time (F) ≤ 3 s/90° Safety operations at 3 sec. (F) min. 1,000 acc. to construction of damper and ambient. Consider minimum external load! Ex-i tripping circuit BF3 Intrinsically safe circuit to connect the ExPro-TT safety temperature trigger directly to the actuator with M12 quick connection Aux. switches SF3,BF3 Integrated auxiliary switches, switching at 5° and 85° angle of rotation, potential free. Grid fuse-protection is recommended! Umax / Imax AC = 250 V/5 A; Uman AC/DC = 5 N; After one-time operation with U > 24 V AC/DC or I > 100 mA: Uman AC/DC = 12 V Umax / Imax AC = 250 V/5 A; Uman AC/DC = 5 mA; Iman AC/DC = 100 mA Axie of the actuator Double square 16 × 16 mm, direct coupling, 100 % overload protected Iman AC/DC = 100 mA Electrical connection Cable < 1 m, wire cross section 0.5 mm?, equipotential bonding 4 mm?. Connections in hazardous areas require a terminal box! Diameter of cable ~ Ø 7.0 mm ~ Ø 7.0 mm ~ Ø 7.0 mm ~ Ø 9.6 mm 2 cable gland M16 × 1.5 mm Manual override Use delivered socket wrench, max 4 Nm Mainegrated, controlled heater for ambient	Motor	Brushless DC motor						
Spring return running time (F) ≤ 3 s/90° Safety operations at 3 sec. (F) min. 1,000 acc. to construction of damper and ambient. Consider minimum external load! Ex-I tripping circuit BF3 Intrinsically safe circuit to connect the ExPro-TT safety temperature trigger directly to the actuator with M12 quick connection Aux. switches SF3,BF3 2 integrated auxiliary switches, switching at 5° and 85° angle or totation, potential free. Grid fuse-protection is recommended! Umax/ Imax, AC = 250 V/5 A; Umin AC/DC = 5 V; After one-time operation with U > 24 VAC/DC or I > 100 mA: Umin AC/DC = 12 V Azke of the actuator Double square 16 × 16 mm, direct coupling, 100 % overload protected Electrical connection Cable ~ 1 m, wire cross section 0.5 mm², equipotential bonding 4 mm². Connections in hazardous areas require a terminal box!	Control mode	On-off						
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Ex-i tripping circuit BF3 Intrinsically safe circuit to connect the ExPro-TT safety temperature trigger directly to the actuator with M12 quick connection Aux. switches SF3,BF3 2 integrated auxiliary switches, switching at 5° and 85° angle of rotation, potential free. Grid fuse-protection is recommended! $U_{max}/ I_{max} AC = 250 V/5 A; U_{min} AC/DC = 5 V; After one-time operation with U > 24 V AC/DC or I > 100 mA; U_{min} AC/DC = 12 V U_{max}/ I_{max} AC = 250 V/5 A; U_{min} AC/DC = 5 mA; Intrinsically safe circuit to coupling, 100 % overload protected Electrical connection Cable 16 mm, direct coupling, 100 % overload protected Electrical connection Cable - 1 m, wire cross section 0.5 mm², equipotential boning 4 mm². Connections in hazardous areas require a terminal box! Connections in hazardous areas require a terminal box! Diameter of cable ~ Ø 7.0 mm ~ Ø 7.0 mm ~ Ø 7.0 + 7.6 mm ~ Ø 9.6 mm 2 cable gland M16 × 1.5 mm Maual override Use delivered socket wrench, max. 4 Nm Heater Integrated, controlled heater for ambient temperature down to -40 °C Housing material Aluminium die-cast housing, coted. Optional with seawater resistant coating (CTM) or stainless steel housing. Weight - 9.5 kg aluminium housing, stainless steel ~ 15 kg Ambients Storage temperature -40+70 °C, working temperature -40+40 °C$	Spring return running time (F)	≤ 3 s/90°						
Aux. switches SF3,BF3 2 integrated auxiliary switches, switching at 5° and 85° angle of rotation, potential free. Grid fuse-protection is recommended! Umax/I max, AC = 250 V/5 A; Umin AC/DC = 5 V; After one-time operation with U > 24 V AC/DC or I > 100 mA: Umin AC/DC = 12 V Umax/I max, DC = 48 V/1 A; Imin AC/DC = 5 mA; Imin AC/DC = 100 mA Axle of the actuator Double square 16 × 16 mm, direct coupling, 100 % overload protected Imin AC/DC = 100 mA Electrical connection Cable - 1 m, wire cross section 0.5 mm², equipotential bonding 4 mm². Connections in hazardous areas require a terminal box! Diameter of cable ~ 0 7.0 mm ~ 0 7.0 mm ~ 0 7.0 + 7.6 mm ~ 0 9.6 mm 2 cable gland M16 × 1.5 mm ~ 0 7.0 mm ~ 0 7.0 + 7.6 mm ~ 0 9.6 mm 4 cable divered socket wrench, max. 4 Nm Heater Integrated, controlled heater for ambient temperature down to ~40 °C Imax/I max/I max/I max/I max/I max/I max/I m Heater Integrated, controlled heater for ambient temperature down to ~40 °C Imax/I max/I max/I max/I max/I m Manual override Use delivered socket wrench, max. 4 Nm Imax/I max/I mox/I mox/I mox/I max/I	Safety operations at 3 sec. (F)	min. 1,000 acc. to construction of	f damper and ambient. Consider mini	mum external load!				
Umax/ Imax AC = 250 V/5 A;Umin AC/DC = 5 V;After one-time operation with U > 24 V AC/DC or I > 100 mA:Umin AC/DC = 12 VUmax/ Imax DC = 48 V/1 A;Imin AC/DC = 5 mA;Imin AC/DC = 100 mAAxle of the actuatorDouble square 16 × 16 mm, direct coupling, 100 % overload protectedElectrical connectionCable ~ 1 m, wire cross section 0.5 mm², equipotential bonding 4 mm². Connections in hazardous areas require a terminal box!Diameter of cable~ Ø 7.0 mm~ Ø 7.0 mm~ Ø 7.0 + 7.6 mm~ Ø 9.6 mm2 cable glands in versionSF3Cable qlandM16 × 1.5 mmManual overrideUse delivered socket wrench, max. 4 NmHeaterIntegrated, controlled heater for ambient temperature down to ~40 °CHousing materialAluminium die-cast housing, coated. Optional with seawater resistant coating (CTM) or stainless steel housing, Ne 1.4581 / UNS-J92900 / similar AISI 316Nb (VAM)Dimensions (L × W × H)~ 288 × 149 × 116 mm, for diagrams see \mathbb{O} Extra informationWeight~ 9.5 kg aluminium housing, stainless steel ~ 15 kg	Ex-i tripping circuitBF3	Intrinsically safe circuit to connect						
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Electrical connection Cable ~ 1 m, wire cross section 0.5 mm², equipotential bonding 4 mm². Connections in hazardous areas require a terminal box! ~ Ø 7.0 mm ~ Ø 7.0 mm ~ Ø 9.6 mm Diameter of cable ~ Ø 7.0 mm ~ Ø 7.0 mm ~ Ø 7.0 mm ~ Ø 9.6 mm 2 cable glands in versionSF3 Cable of and sin versionSF3 ~ Ø 9.6 mm ~ Ø 9.6 mm Manual override Use delivered socket wrench, max. 4 Nm - Ø 7.0 mm ~ Ø 9.6 mm ~ Ø 9.6 mm Heater Integrated, controlled heater for ambient temperature down to ~40 °C - Ø 7.0 mm ~ Ø 9.6 mm Housing material Aluminium die-cast housing, coated. Optional with seawater resistant coating (CTM) or stainless steel housing, Ne 1.4581 / UNS-J92900 / similar AISI 316Nb (VAM) - Ø 9.5 kg aluminium housing, stainless steel ~ 15 kg Dimensions (L × W × H) ~ 288 × 149 × 116 mm, for diagrams see ①Extra information - Ø 9.6 mm - Ø 9.5 kg aluminium housing, stainless steel ~ 15 kg Ambients Storage temperature ~40+70 °C, working temperature ~40+40 °C at T6 and ~40+50 °C at T5 - Ø 9.6 mm - Ø 9.6 mm Operation mode 80 % ED are permitted (ED = duty cycle) - Ø 9.5 kg 2.4 + 2.5 SB 2.4 + 2.5 S		$U_{max}/I_{max}DC = 48 V/1A; I_{mi}$	_n AC/DC = 5 mA;		I _{min} AC/DC = 100 mA			
Connections in hazardous areas require a terminal box! Diameter of cable ~ Ø 7.0 mm ~ Ø 7.0 mm ~ Ø 7.0 mm ~ Ø 9.6 mm 2 cable glands in versionSF3 Cable gland M16 × 1.5 mm <td< td=""><th>Axle of the actuator</th><td>Double square 16 × 16 mm, dire</td><td>ct coupling, 100 % overload protected</td><td>1</td><td></td></td<>	Axle of the actuator	Double square 16 × 16 mm, dire	ct coupling, 100 % overload protected	1				
Diameter of cable~ Ø 7.0 mm~ Ø 7.0 mm~ Ø 7.0 + 7.6 mm~ Ø 9.6 mm2 cable glands in versionSF3Cable glandM16 × 1.5 mmManual overrideUse delivered socket wrench, max. 4 NmHeaterIntegrated, controlled heater for ambient temperature down to ~40 °CHousing materialAluminium die-cast housing, coated. Optional with seawater resistant coating (CTM) or stainless steel housing, N= 1.4581 / UNS-J92900 / similar AISI 316Nb (VAM)Dimensions (L × W × H)~ 288 × 149 × 116 mm, for diagrams see ① Extra informationWeight~ 9.5 kg aluminium housing, stainless steel ~ 15 kgAmbientsStorage temperature -40+70 °C, working temperature -40+40 °C at T6 and -40+50 °C at T5Humidity090 % rH, non condensingOperation mode80 % ED are permitted (ED = duty cycle)MaintenanceMaintenance free relative to function, maintenance must comply with regional standards, rules and regulationsWring diagramsSB 2.4 + 2.5SB 2.4 + 2.5SB 2.4 + 2.5 + 3.2Scope of deliverySE 2.4 + 2.5 × 140 mm, 4 nuts M8, Allen key for simple manual override	Electrical connection	Cable ~ 1 m, wire cross section 0.5 mm ² , equipotential bonding 4 mm ² .						
2 cable glands in versionSF3Cable glandM16 × 1.5 mmManual overrideUse delivered socket wrench, max. 4 NmHeaterIntegrated, controlled heater for ambient temperature down to ~40 °CHousing materialAluminium die-cast housing, coated. Optional with seawater resistant coating (CTM) or stainless steel housing, N* 1.4581 / UNS-J92900 / similar AISI 316Nb (VAM)Dimensions (L × W × H)~ 288 × 149 × 116 mm, for diagrams see ① Extra informationWeight~ 9.5 kg aluminium housing, stainless steel ~ 15 kgAmbientsStorage temperature ~40+70 °C, working temperature ~40+40 °C at T6 and ~40+50 °C at T5Humidity090 % rH, non condensingOperation mode80 % ED are permitted (ED = duty cycle)MaintenanceMaintenance free relative to function, maintenance must comply with regional standards, rules and regulationsWiring diagramsSB 2.4 + 2.5SB 2.4 + 2.5SB 2.4 + 2.5 + 3.2SB 2.4 + 2.5 + 7.4Scope of deliveryActuator with 1 m cable, 4 screws M8 × 140 mm, 4 nuts M8, Allen key for simple manual override		Connections in hazardous areas	require a terminal box!					
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Manual overrideUse delivered socket wrench, max. 4 NmHeaterIntegrated, controlled heater for ambient temperature down to -40 °CHousing materialAluminium die-cast housing, coated. Optional with seawater resistant coating (CTM) or stainless steel housing, N≥ 1.4581 / UNS-J92900 / similar AISI 316Nb (VAM)Dimensions (L × W × H)~ 288 × 149 × 116 mm, for diagrams see ① Extra informationWeight~ 9.5 kg aluminium housing, stainless steel ~ 15 kgAmbientsStorage temperature -40+70 °C, working temperature -40+40 °C at T6 and -40+50 °C at T5Humidity090 % rH, non condensingOperation mode80 % ED are permitted (ED = duty cycle)MaintenanceMaintenance free relative to function, maintenance must comply with regional standards, rules and regulationsWiring diagramsSB 2.4 + 2.5SB 2.4 + 2.5SB 2.4 + 2.5 + 3.2SB 2.4 + 2.5 + 7.4Scope of deliveryActuator with 1 m cable, 4 screws M8 × 140 mm, 4 nuts M8, Allen key for simple manual override		2 cable glands in versionSF3						
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AmbientsStorage temperature -40+70 °C, working temperature -40+40 °C at T6 and -40+50 °C at T5Humidity090 % rH, non condensingOperation mode80 % ED are permitted (ED = duty cycle)MaintenanceMaintenance free relative to function, maintenance must comply with regional standards, rules and regulationsWiring diagramsSB 2.4 + 2.5SB 2.4 + 2.5SB 2.4 + 2.5 + 3.2SB 2.4 + 2.5 + 7.4Scope of deliveryActuator with 1 m cable, 4 screws M8 × 140 mm, 4 nuts M8, Allen key for simple manual override	Dimensions (L × W × H)	~ 288 × 149 × 116 mm, for diagr	ams see () Extra information					
Humidity 090 % rH, non condensing Operation mode 80 % ED are permitted (ED = duty cycle) Maintenance Maintenance free relative to function, maintenance must comply with regional standards, rules and regulations Wiring diagrams SB 2.4 + 2.5 SB 2.4 + 2.5 SB 2.4 + 2.5 + 3.2 SB 2.4 + 2.5 + 7.4 Scope of delivery Actuator with 1 m cable, 4 screws M8 × 140 mm, 4 nuts M8, Allen key for simple manual override SB 2.4 + 2.5 + 3.2 SB 2.4 + 2.5 + 3.2	Weight	~ 9.5 kg aluminium housing, stainless steel ~ 15 kg						
Operation mode 80 % ED are permitted (ED = duty cycle) Maintenance Maintenance free relative to function, maintenance must comply with regional standards, rules and regulations Wiring diagrams SB 2.4 + 2.5 SB 2.4 + 2.5 SB 2.4 + 2.5 + 3.2 SB 2.4 + 2.5 + 7.4 Scope of delivery Actuator with 1 m cable, 4 screws M8 × 140 mm, 4 nuts M8, Allen key for simple manual override SE 2.4 + 2.5 + 3.2 SE 2.4 + 2.5 + 3.2	Ambients	Storage temperature -40+70 °C, working temperature -40+40 °C at T6 and -40+50 °C at T5						
Maintenance Maintenance free relative to function, maintenance must comply with regional standards, rules and regulations Wiring diagrams SB 2.4 + 2.5 SB 2.4 + 2.5 SB 2.4 + 2.5 + 3.2 SB 2.4 + 2.5 + 7.4 Scope of delivery Actuator with 1 m cable, 4 screws M8 × 140 mm, 4 nuts M8, Allen key for simple manual override SE 2.4 + 2.5 + 3.2 SE 2.4 + 2.5 + 7.4	Humidity	090 % rH, non condensing						
Wiring diagrams SB 2.4 + 2.5 SB 2.4 + 2.5 SB 2.4 + 2.5 + 3.2 SB 2.4 + 2.5 + 7.4 Scope of delivery Actuator with 1 m cable, 4 screws M8 × 140 mm, 4 nuts M8, Allen key for simple manual override SB 2.4 + 2.5 + 3.2 SB 2.4 + 2.5 + 7.4	Operation mode	80 % ED are permitted (ED = duty cycle)						
Scope of delivery Actuator with 1 m cable, 4 screws M8 × 140 mm, 4 nuts M8, Allen key for simple manual override	Maintenance	Maintenance free relative to fund	ction, maintenance must comply with	regional standards, rules and regulations				
	Wiring diagrams	SB 2.4 + 2.5	SB 2.4 + 2.5	SB 2.4 + 2.5 + 3.2	SB 2.4 + 2.5 + 7.4			
Parameter at delivery 30 Nm, 90 s/90° 50 Nm, 90 s/90° 30 resp. 50 Nm, 90 s/90° 30 resp. 50 Nm, 90 s/90°	Scope of delivery	Actuator with 1 m cable, 4 screw	vs M8 × 140 mm, 4 nuts M8, Allen key	for simple manual override				
	Parameter at delivery	30 Nm, 90 s/90°	50 Nm, 90 s/90°	30 resp. 50 Nm, 90 s/90°	30 resp. 50 Nm, 90 s/90°			

Approbations		Special solutions and accessories
ATEX directive	2014/34/EU	CTM Types in aluminium housing with seawater resistant coating,
EC type-approved	PTB 04 ATEX 2106	parts nickel-plated
IECEx certified	IECEx PTB 08.0059	VAM Types in stainless steel housing, parts nickel-plated
Approval for gas	II 3 (1) G Ex nC [ia] IIC T6, T5; II 3 G Ex nC II T6, T5	RedBox Terminal boxes for zone 2, 22
TypesCTM	II 3 (1) G Ex nC [ia] IIB T6, T5; II 3 G Ex nC IIB T6, T5	MKK-M Mounting bracket for boxes typeBox directly on actuator
Approval for dust	II 3 D Ex tD A22 IP66 T80, T95°C	ExPro-TT Safety temperature trigger for fire dampers
Ex-i circuit data	see table (T 1.0)	RedSwitch 2 external aux. switches, adjustable for zone 2, 22
		AR-16-xx Reduction part for 16 mm square connection to 14 or 12 mm shafts
CE identification	CE № 0158	Kit-S8 Cable glands nickel-plated
EMC directive	2014/30/EU	Adaptions for dampers and valves on request
Low voltage directive	2014/35/EU	RedMaxS3 Ambient temperature up to +60 °C (T4), 110240 VAC/DC, 25 % ED
Enclosure protection	IP67 in acc. with EN 60529	
EAC	№ TC RU C-DE.ГБ08.В.01510	

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RedMax-...-F3

RedMax-...-SF3

... -CTM

RedMax-...-BF3



... -VAM

Electrical connection

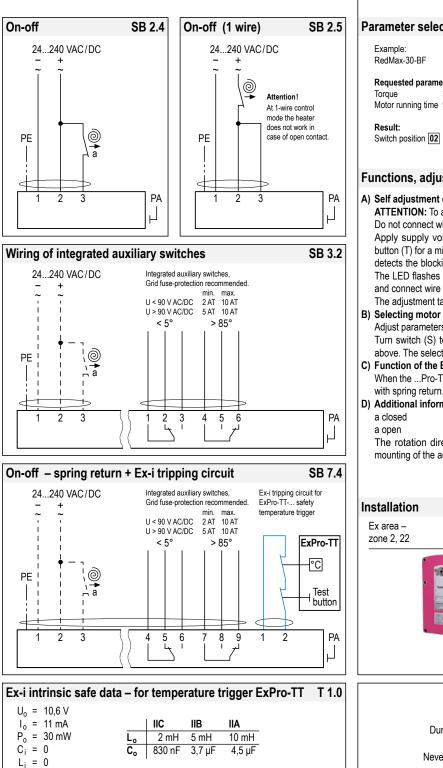
All actuators are equipped with a universal supply unit working at a voltage range from 24...240 VAC/DC. The supply unit is self adjusting to the connected voltage

The safety operation of the spring return function works if the supply voltage is cut or line 3 opened.

For electrical connection inside hazardous areas a terminal box is required (e.g. RedBox). An over-current protection fuse < 10 A has to be provided by installer.

Note: The initial current is appr. 2 A for 1 second.

Integrated auxiliary switches signal the rotation angle's position. ${\rm U}_{\rm min}$ and ${\rm I}_{\rm min}$ change once the switches were operated with higher voltage or current.



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www.schischek.com



Parameter selection

Example:		Туре			Torc	ues	
RedMax-30-BF			x-30 -BF x- 50 -BF		30 Nm 50 Nm		
Requested parameter	eter:				V		
Torque	30 Nm	Runnir	ng times		Position of	switch (S)	
Motor running time	90 s/90°	40	s/90°	►	00	05	
		60	s/90°	►	01	06	
Result:		90	s/90°	►	02	07	
Switch position 02		120	s/90°	►	03	08	
		150	s/90°		04	09	

Functions, adjustments and parameters

A) Self adjustment of angle of rotation

ATTENTION: To adjust the angle of rotation connect only wire 1 and 2. Do not connect wire 3.

Apply supply voltage to wire 1 and 2. Turn switch (S) to position 02. Press button (T) for a minimum of 3 seconds. The actuator drives to the first end position, detects the blocking position and performs a spring return to the starting position. The LED flashes GREEN during adjustment. After that disconnect from the mains and connect wire 3.

The adjustment takes about 93 seconds (90 sec. "On", 3 sec. "Off").

B) Selecting motor running time

Adjust parameters only if actuator is in idle state or without applied potential. Turn switch (S) to the position required for the intended operation acc. to table above. The selected parameters will be carried out at the actuator's next operation.

C) Function of the ExPro-TT-... in the Ex-i tripping circuit When the ... Pro-TT's tripping circuit is opened the actuator runs into its end position

with spring return.

D) Additional information for control in On-off operation

= actuator opens

= spring return

The rotation direction (clockwise/counter clockwise) depends on left/right mounting of the actuator to the damper.

Ex area – zone 2, 22	EX	Safe area
		Auxiliary switches * see Technical data
		Supply * 24240 VAC/DC ± 10 %
	RedBox	* electrical wiring see diagrams

Attention

During commissioning apply a self adjustment drive. Regard duty cycle at motor running times! Never use spring return actuators without external load.

Ex	RedMaxF3
<u> </u>	



Special option

... -CTM

... -VAM



Important information for installation and operation

A. Installation, commissioning, maintenance

All national and international standards, rules and regulations for hazardous Ex-areas must be complied. Certified apparatus must be installed in accordance with manufacturer instructions. If the equipment is used in a manner not specified by the manufacturer, the safety protection provided by the equipment may be impaired. For electrical installations design, selection and erection, EN/IEC 60079-14 can be used.

For electrical connection an Ex-e terminal box is required (e.g. RedBox-...).

Attention: If the actuator is put out of operation all Ex rules and regulations must be applied. You have to cut the supply voltage before opening the terminal box!

The cables of the actuator must be installed in a fixed position and protected against mechanical and thermical damage. Connect potential earth. Avoid temperature transfer from armature to actuator! Close all openings with min. IP67.

For outdoor installation a protective weather shield against sun, rain and snow should be applied to the actuator as well as a constant supply at terminal 1 and 2 for the integrated heater. During commissioning apply a self adjustment drive.

Actuators are maintenance free. An annual inspection is recommended. For electrical installations inspection and maintenance, EN/IEC 60079-17 can be used. Ex-actuators must not be opened by the customer.

B. Manual override

Manual override only if supply voltage is cut. Use delivered socket wrench with slow motions, usage can be tight.

Attention: Releasing or letting go the Allen key too fast at manual operating actuators with spring return causes risk of injury!

C. Shaft connection, selection of running time

Actuators are equipped with a direct coupling double square shaft connection of 16 × 16 mm. The housing of the actuator is axially symmetrically built to select Open-close direction of the spring return function by left-right mounting. Using the 10-position switch different motor running times and spring return running times can be selected on site in acc. to the actuator type.

D. Temperature trigger ... Pro-TT-...

The actuator ...Max-...-BF3 will work only with the temperature trigger ExPro-TT-...

E. Spring return

Spring return function works only if the supply voltage for terminal 1 or 2 is cut. In the event of an electrical interruption, the spring returns to its end position even if supply voltage is available again during return function. Thereafter operation will continue.

F. Operation at ambient temperatures below -20 °C

All actuators are equipped with a regulated integrated heating device designed for employments down to -40 °C ambient temperature. The heater will be supplied automatically by connecting the constant voltage supply on the clamps 1 and 2.

- 1. After mounting the actuator must bei immediately electrically connected.
- The heater switches on automatically when actuator reaches internally -20 °C. It heats up the actuator to a proper working temperature, then heater switches off automatically. Actuator will not run during heating process.
- 3. The adjustment options are only ensured after this heating up period.

G. Excess temperatures

In acc. to the ATEX rules and regulations Ex actuators must be protected against excess temperature. The internal thermostat works as a maximum limiter and, in the event of failure at incorrect temperatures, shuts off the actuator irreversible. An upstream connected temperature sensor stops the actuator before reaching its max. temperature. This safety feature is reversible, after cooling down the actuator is completely functional again. In this case the failure must be eliminated immediately on site!

H. Synchron mode

Do not connect several actuators to one shaft or link mechanically together.

I. Mechanical protection

Actuators must be operated with a minimum external load.

After installing the actuator to the damper/armature a self adjustment drive has to be performed in order to protect the damper/armature against mechanical overload. During operation the actuator reduces briefly its speed (motor power) before reaching the end position for a "gentle" blockade/stop.

J. Intrinsically safe circuits

The supply of the push button (adjustment drive), the 10-position switch (adjustment of torque and running time), the LED indicator and the sensor connection ExPro-TT is performed intrinsically safe!

K. Routine tests of fire dampers

For periodic inspection of fire dampers cut off the supply line (current of actuator). The test button at ExPro-TT-... is only for test aims of actuator's function.

①Extra information (see additional data sheet)

Additional technical information, dimensions, installation instruction, illustration and failure indication

Accessory RedSwitch – adaptable auxiliary switch



For an end or inclined position indication it is possible to retrofit external, adjustable, explosion proof auxiliary switches type RedSwitch. The switch housing is mounted directly to the actuator and the switches are linked to the actuator's square connector. The switches deliver a potential free output and can be adjusted separately. They are connected by the included cable tail.

Accessory RedBox – adaptable terminal box



For electrical connection of ...Max actuators inside the hazardous area a terminal box is required. RedBoxes are appropriate terminal boxes and placed at the disposal. To adapt the ...Box directly to the actuator housing a mounting bracket type MKK-M is required. RedBox- 3P for ...Max-...-F3

RedBox- Y/S for ...Max-...-SF3 RedBox- BF for ...Max-...-BF3

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