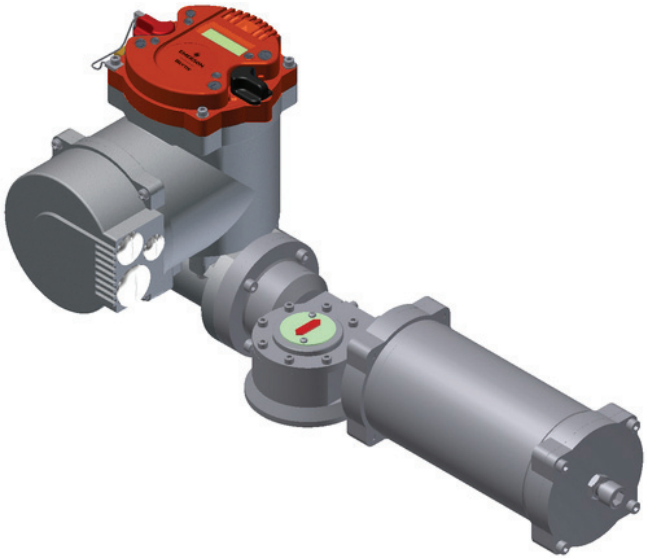
Product Data Sheet
Part Number: DS – 87376-4, Rev. 1
Release: September 2016

Bettis RTS FQ Fail-Safe Quarter-Turn Actuator

Smart and Compact

FAIL-SAFE QUARTER-TURN ACTUATOR

- Reliably drive valve in fail-safe position with a mechanical spring unit
- Control: integrated controls with frequency inverter and brushless DC motor
- Direct coupling of the fail-safe with the valve shaft
- Fail-safe triggering selectable in case of drop-off 24 V DC fail-safe signal or main power supply
- Fail-safe speed adjustable
- Modulating operation up to 1200 starts/ hour possible (S9 operation)
- Configurable fail-safe operating time and ramp speed
- Exclusive spring based mechanical energy storage – no hydraulics or battery required
- No need of periodical inspections – self-testing with every stroke
- Partial stroke test
- Low maintenance
- Integrated SMARTCON controls with wireless Bluetooth capability for configuration, monitoring, and diagnostics of key parameters
- Data Logger for diagnostics
- SMARTCON Android application
- Multi-lingual user-interface



- Non-intrusive limit setting
- Available for power supply:
  - 24 VDC
  - 1x115V – 230VAC, 50/60 Hz
  - 3x 380 – 480 VAC, 50/60 Hz
- Housing Material: Aluminum
- Standard NEMA 4 enclosure
- Certifcation: ATEX, CSA, UL, IECEx

Technical Details

- Switch off thrust electric: max. 2,000 Nm (1,475 lbs. ft)
- Modulating torque: max. 1,000 Nm (730 lbs. ft)
- Fail-safe torque: max. 1,000 Nm (730 lbs. ft)
- Adjustable positioning time (Electric): 15 - 650 sec
- Adjustable fail-safe operating time: 1–5 sec

Optional Features

- Analog position feedback 0/4-20mA (2-wire)
- Relay board for 250 VAC, 2A with 4 or 6 outputs
- Networking (Modbus RTU, HART)
- Mechanical manual override
- PID controller

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TYPE		FQ-03	FQ-06	FQ-20
Max Electric Torque	max. lbs. ft (Nm)	220 (300)	440 (600)	1,475 (2,000)
Max Fail-safe Torque	max. lbs. ft (Nm)	110 (150)	220 (300)	730 (1,000)
Modulating Torque	max. lbs. ft (Nm)	110 (150)	220 (300)	730 (1,000)
Fail-safe Function		Selectable opening and closing (CW/CCW)		
Fail-safe Trigger		Loss of 24 V DC Fail-safe signal or main power supply (selectable)		
Positioning Speed - Electric	sec	14 to 420	14 to 420	30 to 850
Positioning Speed - Fail-safe	sec	1 - 5	1 - 5	3 - 10
Available Travel	°	90 +/– 5° with mechanical end-stop		
Mode of Operation	On/off Duty	S2–15 min		
	Modulating Duty	S4 – 1200 starts/hour – 40% duty cycle		
Manual Override		Optional		
VALVE-MOUNTING				
Flange	ISO 5210	F07/F10	F10/F12	F14/F16
Max Stem Diameter	in (mm)	1 (25)	1.58 (40)	2.36 (60)
Max Square (Flats)	in (mm)	0.86 (22)	1.25 (32)	1.87 (46)
ENVIRONMENTAL CONDITIONS				
Weather Protection		IP 67 /NEMA 4		
Ambient Temperature		- 40° C (-40°F) to +60°C (140°F)		
Corrosion Protection		K2 for aggressive atmospheres		
Painting/Color		Two component painting / RAL 7024		
Weight approx.	lb. (kg)	94 (43)	116 (53)	440 (200)
MOTOR - BRUSHLESS TECHNOLOGY				
Isolation Class		Insulation class F, max. 155° C (311°F) permanent temperature		
Power Supply	V	24 VDC or 115-230 VDC or 1x 115-230 VAC, 50-60Hz or 3x 380-480 VAc, 50-60 Hz		
	Nominal Current	2.5 A		
Power Comsumption Idle with Fail-safe Brake		40 W		
ACTUATOR CONTROL				
Technology	Integrated processor control unit with frequency technology for variable speed control			
Control Elements	· With additional language independent symbols · Selector switch LOCAL - OFF - REMOTE (lockable) · Control switch OPEN - STOP - CLOSE contact less sensor technology			
Local Display	Backlit LCD display, can be rotated in 90 degree steps			
LEDs	4 programmable red, green, blue LEDs for operation - readiness - warning - and error messages			
Communication	Infrared communication interface and bluetooth technology including ANDROID App for simple configuration			
Inputs	· 5 configurable binary (discrete inputs) control inputs: OPEN - STOP - CLOSE - EMERGENCY OPEN - EMERGENCY CLOSE · Nominal voltage 24VDC			
Outputs	· 8 configurable binary (relay) outputs: READY - OPEN - CLOSE - RUNNING OPEN - RUNNING CLOSE - TORQUE - LOCAL - REMOTE · Power supply 24 VDC +/– 6V (selectable internal or external)			
FUNCTIONS				
Standard	· Switch-off mode adjustable, travel or torque dependent · Torque adjustable: 25-100% of max. torque · Adjustable speed for process optimization and emergency speeds · Password protection (reading and/or writing) · Multi-language display · Status indication for binary inputs/outputs and analog signals on LCD Display · Data logging for analysis and service · Motor protection by Positive Temperature Coefficient sensors			
ELECTRICAL CONNECTION				
Cable Entry	3 metric threaded boreholes for cable grands: M40x1.5 / M32x1.5 / M25x1.5 (Optional: 2x NPT1/2“ + 1xNPT1“)			