

Product Overview

MAXON SMARTLINK® DS Intelligent Control Actuator Series Technical Specifications

Easy Installation & Operation

Simple wiring, standard communication protocols: analog 4-20mA or Modbus which enables a wide range of positioning and health reporting capabilities.

Application Flexibility

Diverse application needs can be easily met by selecting from a number of product options: two torque offerings, local user display, AC or DC power input, hazardous location approvals. All models provide highly reliable, precise and repeatable operation with continuous modulation and no required maintenance. Can operate as a stand-alone unit, or can be direct coupled with a full line of Maxon's butterfly and ball valves. Best control actuator choice for efficiency and ease-of-operation in heavy industry: oil and gas, agriculture, chemical refineries, pulp and paper, food processing, gas powered electrical generation plants, mining, and water and waste water treatment.

Standard Features

4-20ma Input and Output – Both are independently isolated

Loss-of-Signal and F-Terminal Functions – Two, user-defined, positions for 4-20mA control applications

Precision Gear Train – Provides 0.1 degree resolution with long-life planetary gear set

Safety System Relay Feedback – Fail-safe high/low position and alarm relay drive circuitry with dual processor architecture and redundant position feedback

RS-485 Modbus Interface – Needed to configure actuator when no user display option is ordered. Maxon PC-based configuration software and RS-485 cable required.

Diagnostics via Modbus – Alarm-Lockout, Communication, and Move (Repositioning) Diagnostic Counters; Loss-of-Motor Sync, Position Control, Position (Feedback), Temperature, and Hardware Alarms; Alarm-Lockout Event History, Position Move Histogram

Reverse Direction – User selectable clockwise or counter clockwise movement

Wiring Connections – Accessible field wiring terminals without opening valve housing

Output Relay Contacts – 5A @ 120VAC, 3A @ 250VAC/24VDC (general purpose ratings)
1.5A @ 120VAC, 250VAC, 24VDC (for safety applications, 200,000 minimum operations)

Linearity – ± 0.5 degree (max)

Overhung Shaft Load – 750 lbs.

Operating Temperature – -40°C to $+70^{\circ}\text{C}$ (-40°F to $+158^{\circ}\text{F}$), LCD is viewable down to $-20^{\circ}\text{C}/\text{F}$ without an external heater.

Storage Temperature – -40°C to $+80^{\circ}\text{C}$ (-40°F to $+176^{\circ}\text{F}$)

Vibration – Honeywell V2 test specification; 3 axes; 2-Hour Performance/Resonant Detection Sweep: Vibration sinusoidal: 5 Hz - 30 Hz; Amplitude: 0.012mil pk/pk/75 mm, Vibration sinusoidal: 30 Hz – 300 Hz at 0.6G, Endurance: 1.1G for 2 hours at resonant frequencies

Enclosure Contamination Rating – NEMA 4X and IP67

Housing Materials – Extruded aluminum housing and gear train mounting plate. Coated with scratch and chemical resistant powder coating.



Optional Features

Brake Functionality – Brake is applied (de-energized) within 10 milliseconds of either event:

1. Loss of input AC or DC power is sensed, OR
2. Rated torque is exceeded and motor loss-of-synchronization is sensed

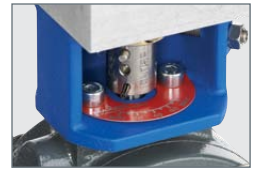
Display Option, 2 x 16 Digit Backlit LCD – Actuator Status, User Commands, User Settings, Actuator History - full commissioning at the unit. 2 LED's to indicate manual mode (not controlled by 4-20mA inputs), and when alarm or lock-out condition exists.

Hazardous Location Ratings – Non-Incendive for Class I, Division 2, Groups A, B, C and D, Dust-protected for Class II, III, Division 2, Groups E, F and G Hazardous (Classified) Locations

Configuration Options – Order as an actuator only - DSSA, actuator with valve mounting bracket - DSCA, actuator coupled with a butterfly valve - DSCV, actuator coupled with a ball valve - DSBV.

Specifications

	300 in-lb AC	300 in-lb DC	900 in-lb AC	900 in-lb DC
Standard Size	6" x 4.4" x 9.5"	4" x 4.4" x 9.5"	6" x 4.4" x 11.5"	4" x 4.4" x 11.5"
Torque rating in Nm	33 N.m		101 N.m	
Torque rating in ft-lb	25 ft-lb		75 ft-lb	
Weight	15 lbs.	14.5 lbs.	16 lbs.	15.5 lbs.
Supply Voltage	100-240 VAC ±10% 50/60 Hz (0.2A rms @120 VAC)	24VDC (+5%/-20%, 1.1A max)	100-240 VAC ±10% 50/60 Hz (0.2A rms @120 VAC)	24VDC (+5%/-20%, 1.1A max)
Average Power	19 Watts	17 Watts	19 Watts	17 Watts
Shaft Configurations When No Valve is Selected	1/2" keyed output shaft w/1/8" square key		17mm keyed output shaft w/5mm square key	
Torque Travel Timing	15 seconds (100° degree travel)		45 seconds (100° degree travel)	
Actuator Size with Brake Option	6" x 4.4" x 11.5"	4" x 4.4" x 11.5"	6" x 4.4" x 11.5"	4" x 4.4" x 11.5"
Mounting Bracket Shaft Configuration Options	1/2" keyed output, linkage arm, 1/2" square output, 3/4" square output		17mm keyed output, 1/2" square output, 3/4" square output	



Butterfly and Ball Valve Interface Options

	300 in-lb	900 in-lb
BUTTERFLY CONTROL VALVE BODIES		
Cast Iron A-valve Body	1", 1.25", 1.5", 2", 2.5", 3", 4"	-
Carbon Steel A-valve Body	1", 1.25", 1.5", 2", 2.5", 3", 4"	-
Brass A-valve Body	1", 1.25", 1.5", 2", 2.5", 3", 4"	-
Stainless Steel A-valve Body	1", 1.25", 1.5", 2", 2.5", 3", 4"	-
Cast Iron M-valve Body	6", 8", 10", 12", 14", 16"	12", 14", 16", 18"
Body Connections	ANSI Flanged, "M" style Flange	
BALL VALVE CONTROL BODIES		
Carbon Steel Ball Valve	0.5", 0.75", 1", 1.25", 1.5", 2"	1", 1.25", 1.5", 2"
Stainless Steel Ball Valve	0.5", 0.75", 1", 1.25", 1.5", 2"	1", 1.25", 1.5", 2"
Flow Capacity	1/32"-1/4" slot, 30°-90° V-port, Round port	
Body Connections	ANSI Flanged 150#, ANSI Threaded	

Agency Approvals

Factory Mutual Global (File No. 3046182 & 3041711)	Non-incendive Class I, Division 2, Groups A, B, C and D; Dust-ignition proof Class II, III, Division 1 & 2, Groups E, F and G Hazardous Locations; NEMA 4X and IP67
	CAN/CSA C22.2 No. 0-M91, No. 142-M1987, No. 213-M1987, No. 157-92, 1010.1, No. 94-M91, ANSI/IEC60529, ANSI / NEMA 250
	ANSI / ISA 61010-1 Safety Requirements for Electrical Equipment
	ATEX Certificate No. FM13ATEX0020: Equipment Group II, Category 3, Gas atmosphere Explosion Protected type "n", gas group IIC, Temperature class T4 and Equipment Group IIC, Category 3D, Dust atmosphere Explosion Protected type "t", group IIIC, Temperature class 135°C hazardous locations; EN60079-0:2012 + A 11: 2013, EN60079-15:2010, EN60079-31:2009, EN60529:2000
	IECEx Certification Reference No. US/FMG/ExTR13.0011/0: Explosion Protected type "n", gas group IIC, Temperature class T4 and Dust Ignition Protected by enclosure type "t", equipment group IIIC, T=135°C hazardous locations. IEC60079-0:2011, IEC60079-15:2010, IEC60079-31:2008, EN60529:2013
Underwriters Laboratories, Inc. (File No. MH49631)	Safety Feedback Relay Outputs: Performance Level: (PL) of "e" in a Category 4, as calculated per EN/ISO 13849-1
	UL 353 - Standard for Safety for Limit Controls
MAXON Self Declaration	UL 1998 - Standard for Safety, Software in Programmable Components
	Compliance with European CE requirements defined by: - EMC Directive 2004/108/EC - Low Voltage Directive 2006/95/EC

MAXON SMARTLINK® DS can be ordered direct-coupled to MAXON OVENPAK® LE, OVENPAK® 400, and TUBE-O-FLAME® burners. All other burner integrations can be special ordered. Drop in replacement kits available for Honeywell Modutrol® Actuators.

www.maxoncorp.com
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Commercial & Industrial Combustion (C&IC)
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