

## TECHNICAL INFORMATION

### Description

The Sure Grip "JSM" Series Electronic Joystick is our second generation joystick, which incorporates the newest Hall sensor technology and advanced internal wire configuration. With all the electronics now relocated in the cap, it improves serviceability and allows us to offer CAN, Proportional, Switched, USB and PWM output options in both single and dual axis spring-return-to-center or friction hold configurations.

The joystick can be configured with our JE, LE, KE and NE control grips. For other options, see the joystick ordering guide.

### Electronics

The "JSM" Series joystick incorporates Hall sensor technology, which provides a linear output of the attached handle position. This sensing technology is designed to perform consistency within harsh environments that otherwise would not be feasible to support with mechanical sensing solutions such as potentiometers.

### Features

- ▶ Long life -tested to 20 million operations
- ▶ Rugged design
- ▶ Proportional and Switched outputs
- ▶ Operating temperature: -40°C to +85°C
- ▶ Sealing up to IP67 (handle dependent)
- ▶ Fully sealed and encapsulated electronics
- ▶ Supports all Sure Grip handles (best suited for our JE, LE, KE, NE)



## TECHNICAL INFORMATION

### ELECTRICAL SPECIFICATIONS

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Proportional Joystick	Min	Typ	Max	Units
Supply Voltage	4.9	5.0	5.1	Vdc
Supply Current	8	10	12	mA
Output Voltage Low	0.45	0.5	0.7	Vdc
Output Voltage Center	2.3	2.5	2.7	mA
Output Voltage High	4.3	4.5	4.55	Vdc
PWM Joystick	Min	Typ	Max	Units
Supply Voltage	10	-	32	Vdc
Supply Current	-	-	10	A
Number of Outputs	-	4	-	-
Current per Output	-	-	2.5	A
Number of Aux Outputs	-	2	-	Hz
Duty Cycle	5	80	99	%
Frequency	33	200	400	Hz
Switched Joystick	Min	Typ	Max	Units
Supply Voltage (Vs)	10	-	32	Vdc
Number of Outputs	-	4	-	-
Output Voltage	-	-	Vs	Vdc
Current per Output	-	-	2.5	A
CANbus J1939 Joystick	Refer to Doc. # 550.0067			

### MECHANICAL SPECIFICATIONS

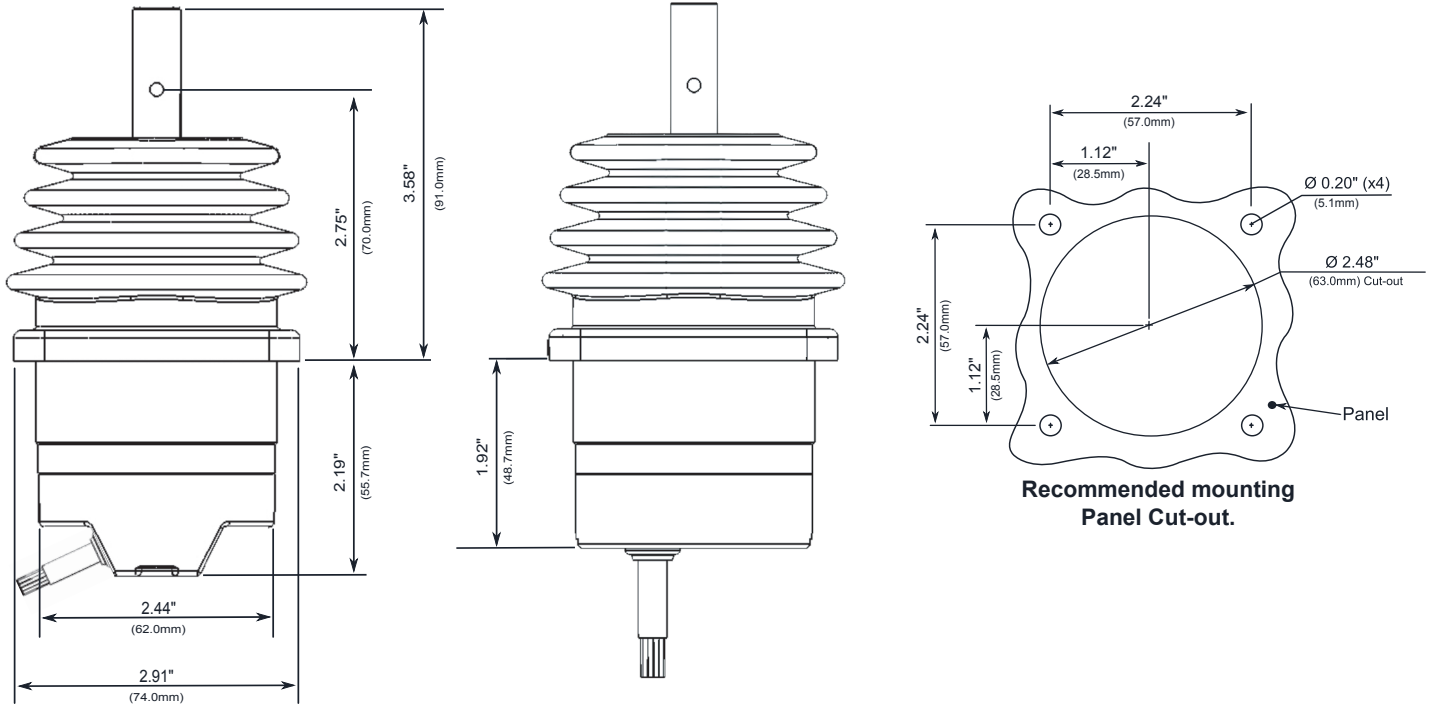
Travel	+/- 20° (on Axis)
Life Expectancy	>5 million cycles
Functions	Spring Return to Center / Friction Hold
Operating Force	1-5 lbs.

### ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	- 40°C to +85°C
Sealing	Up to IP67 (handle dependant)

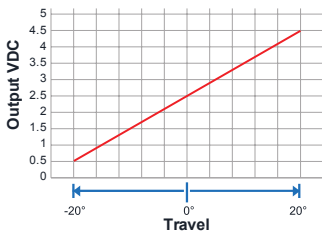
## TECHNICAL INFORMATION

### Dimensions

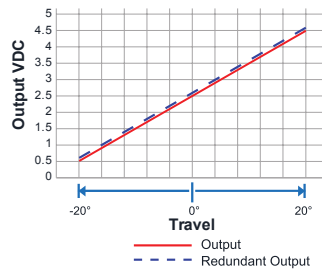


### Output Graphs

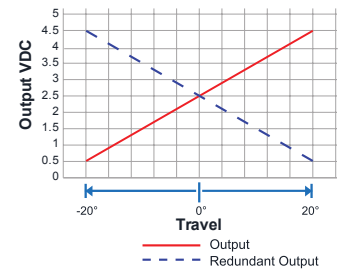
1. Proportional



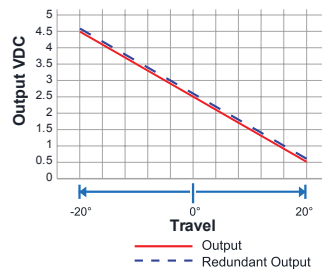
1. Proportional - Parallel Positive



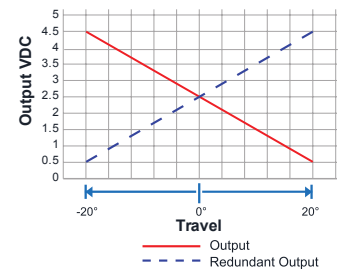
1. Proportional - Mirrored Positive



1. Proportional - Parallel Negative



1. Proportional - Mirrored Negative



## ORDERING GUIDE

### Order Instructions:

- Each box has a color and number, which corresponds to joystick options below. Please review each option, as this will help you with choosing your part number. (Refer to our technical guides for more information on product options)
- If you require a handle please look at handle ordering guides.
- If a desired joystick option is not available contact a sales representative to discuss if there are alternative solutions for your application.
- Enter your configured part number in the empty boxes provided below and contact a friendly Sure Grip sales representative to place your order.

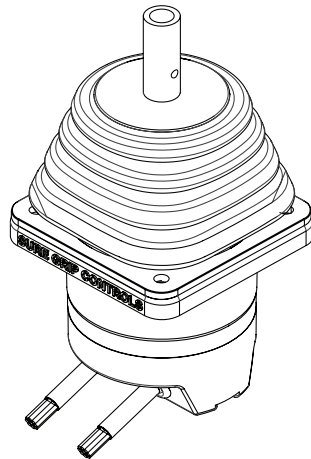
Your configured part number: **JSM-**  -  -  -  -  -  -  -  -  -

1      2      3      4      5      6      7      8      9      9

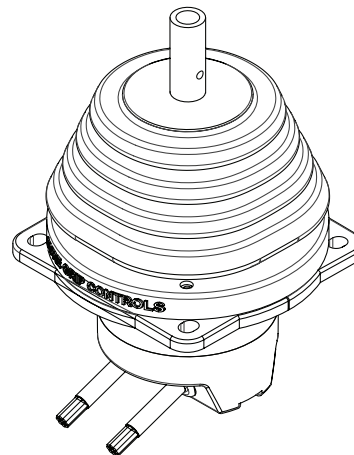
Example: **JSM-** JSM - 2 - A - PP - N - F000 - JE - 000 - Z - Z

<b>1. Joystick Model</b> JSM - Medium Size JSL - Large Size	<b>4. Output Direction</b> NN - Standard PP - Parallel Positive* MP - Mirror Positive* PN - Parallel Negative* MN - Mirror Negative*	<b>6. Features</b> NNNN - No Options F000 - Friction Hold L000 - Latch X Positive 0L00 - Latch X Negative 00L0 - Latch Y Positive 000L - Latch Y Negative	<b>8. Wire Length Options</b> xxx Inches
<b>2. Axis Options</b> 1 - One Axis 2 - Two Axis	<b>5. Gate Options</b> N - None X - X Axis Y - Y Axis D - Y Axis Center Detent Z - Z Gate C - Cross Gate	<b>7. Handle Options</b> NN - No Handle JE - JE Handle LE - LE Handle KE - Large Knob NE - Small Knob	<b>9. Electronics #1 and #2</b> N - None A - Dual Danfoss DA2 B - Caterpillar Interface DA2C2 C - Diode - Diverter Protection DPd D - Power Supply PS5 5VDC E - Single Driver Board SDB *Refer to Control Electronics on website for more information
<b>3. Output Options</b> A - Analog R - Analog Redundant* C - CAN P - PWM S - Switched H - Analog and Switched D - PVG U - USB			

Please note the difference between the JSM and JSL Joysticks. Examples below



JSM Joystick



JSL Joystick

Comment Section