

# AJ4 JOYSTICK

## Introduction

The AJ4 Joystick from DeltaTech Controls® provides the reliability and long life required in demanding environmental conditions such as heavy duty industrial applications.

Building on DeltaTech Controls® industry leading Hall-effect joystick technology, the AJ4 joystick combines flexibility with high mechanical strength. This strength and the unique sensing design make the joystick ideal for rigorous use in rugged, harsh environments offering best durability. The AJ4 Joystick is designed to accommodate standard and custom designed multifunction grips.



## Main Features

- Contactless sensing – Hall effect technology
- Life greater than 6 million cycles
- 2 sensors per axis
- Integrated temperature compensation
- Environmentally sealed
- Potted electronics
- Standard or customized multifunction grips

## Custom Modifications

- Output characteristics
- Operating force
- Lever deflection angle
- Gate pattern
- Over travel and detent function
- Multifunction grips

## SPECIFICATIONS

### Electrical

### Variant

	Variant	
<b>Supply Ratings</b> - System Voltage - Voltage Range - Maximum Current		12V or 24V dc 9V ... 36V DC 75 mA at 24V dc
<b>PWM Output</b>	PW2	500 Hz ± 80 Hz
<b>CAN Bus Output</b>	J19	SAE J1939
<b>Other electrical Characteristics</b>	EMI	100 V/m

## Mechanical

<b>Life</b>	> 6 million cycles
<b>Operating temperature</b> <b>Storage temperature</b>	- 40°C to 85°C - 40°C to 85°C
<b>Operating torque</b>	1.7 Nm, 2.1 Nm, 2.6 Nm, 3 Nm
<b>Horizontal maximum load ( 180mm from pivot point )</b>	980 N (220 lbs)
<b>Vertical load maximum</b>	1110 N (250 lbs)
<b>max. Torque (Z-axis)</b>	25 Nm (18,5 ft lb)
<b>Protection Level</b>	IP 67
<b>Electronics Protection</b>	Fully potted
<b>Gate options</b>	square
<b>Lever deflection X/Y max</b>	± 21° <sup>(A)</sup>
<b>Center position tolerance</b>	± 2°
<b>Weight</b>	860g
<b>Housing</b>	Aluminum
<b>Boot</b>	EPDM (black)
<b>Cable</b>	Pigtail 600 mm without connector (24 AWG, 0,25 mm <sup>2</sup> )

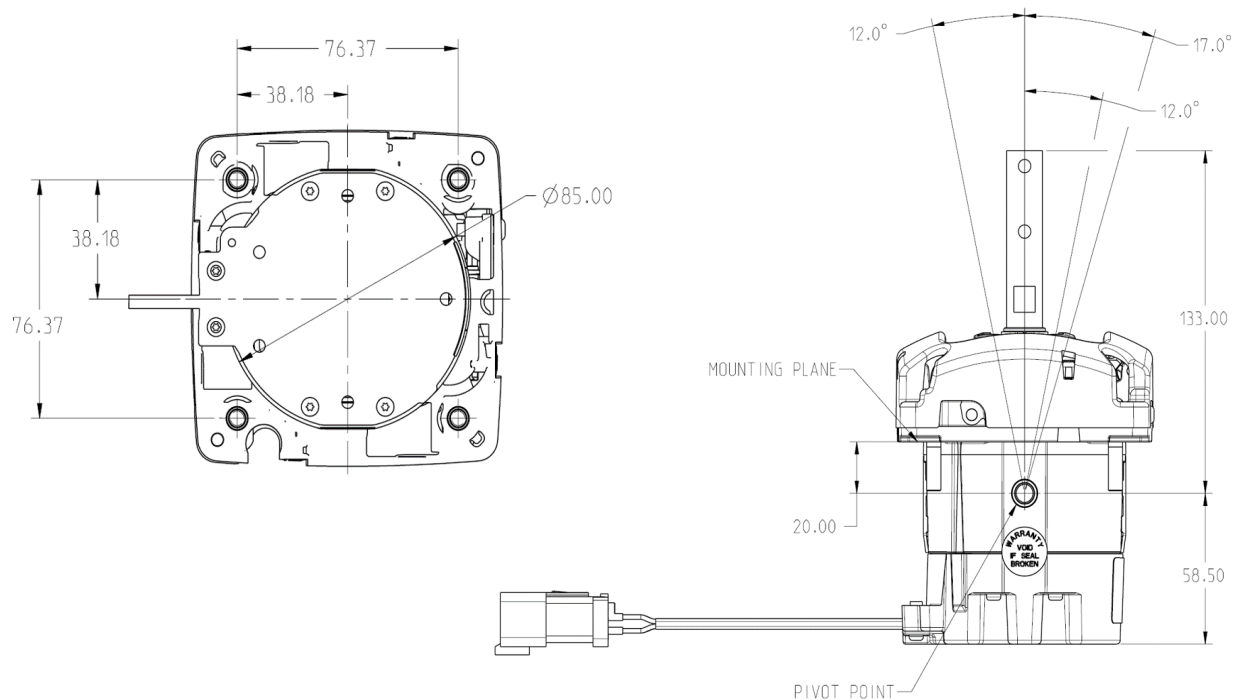


### GENERAL NOTES

<sup>(A)</sup> *Others available on request*



### DIMENSIONS

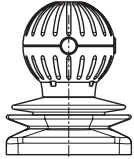




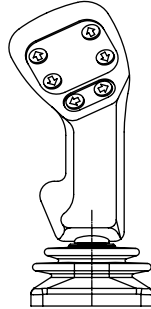
# MULTIFUNCTION GRIPS

for details see MFG datasheet

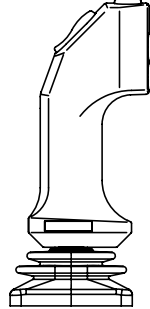
MFG Ball



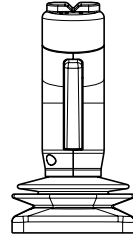
MFG SK



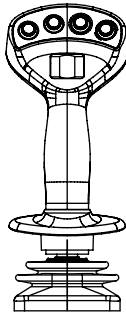
MFG S1



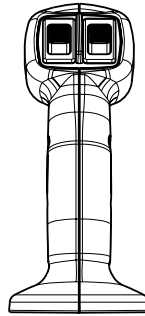
MFG S2



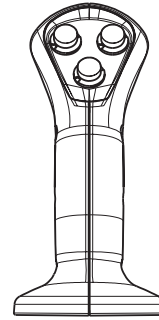
MFG S3

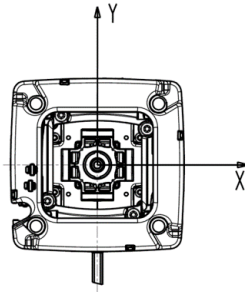


MFG S4



MFG S7





AJ4 with Square Gate

<b>Family</b>	AJ4	S17/17	X2.1	Y2.1	-	J19	C2	...
<b>AJ4</b>								
<b>Square Gate</b>								
S12/12: X:12° Y:12°								
S17/17: X:17° Y:17°								
S17/22: X:17° Y:22°								
S20/20: X:20° Y:20°								
<b>X-Axis Operation Torque</b>								
X1.7: 1.7 Nm								
X2.1: 2.1 Nm								
X2.6: 2.6 Nm								
X3.0: 3.0 Nm								
<b>Y-Axis Operation Torque</b>								
Y1.7: 1.7 Nm								
Y2.1: 2.1 Nm								
Y2.6: 2.6 Nm								
Y3.0: 3.0 Nm								
<b>Overtravel (float)</b>								
- : none (available on request)								
<b>Output Signals</b>								
V08: 0.5 ... 4.5V								
PW2: PWM 500 Hz ± 80Hz								
J19: SAE J1939 based								
CAO: CANopen								
<b>Output Center Position (signal) only for Voltage Output</b>								
C2: inactive 0V / active 5V								
C3: inactive 0V / active Vsupply								
<b>Grip</b>								
- : no grip								
... : see MFG datasheet for grip order code								

Recommended MFG operating torque combination:

MFG	Operating torque
Ball, S2	1.7 Nm
S1, S3, SK	2.1 Nm, 2.6 Nm, 3.0 Nm
S4, S7	2.6 Nm, 3.0 Nm

Conversion table N in NM for AJ4 (measured 180mm from pivot point)

Newton	Newtonmeter
4N	1.7 Nm
8N	2.1 Nm
12N	2.6 Nm
16N	3.0 Nm

Vsupply = voltage supply (Ubat)

MFG = multifunction grip

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