

# AJ3 - Analog Joystick



The AJ3 Joystick from DTC provides the reliability required in demanding environmental conditions such as heavy duty industrial applications. The high mechanical strength of the shaft and the unique sensing design make the joystick ideal for rigorous use in rugged, harsh environments. The AJ3 Joystick is designed to accommodate standard and custom designed multifunction grips (MFG). The AJ3 Joystick is available separately or combined with various multifunction grips (MFG).



## Main Features

- Contactless sensing – Hall effect
- Life greater than 5 million cycles
- 2 sensors per axis
- Integrated temperature compensation
- Standard or customized grips

## Custom modifications

- Output characteristics
- PWM frequency
- Operating force
- Lever deflection angle
- Gate pattern
- Over travel function
- Multifunction grips

Electrical Data	Variant	
Supply Ratings:		
- Voltage range		8V ... 30V
- Maximum current		180 mA at 24V dc
- max. output voltage		Vsupply – 2.5V dc
Voltage Output	VO1	0V ... (Vsupply - 2.5V dc)
(maximum output current	VO2	0 ... 5V dc
5 mA)	VO8	0.5 ... 4.5V dc
	VO9	25% Vsupply ... 75% Vsupply
PWM Output	PW2	500 Hz ± 80 Hz
CAN Bus Output	CA1...	CAN 2.0A (11 bit identifier)
	CA2...	CAN 2.0B (29 bit identifier)
	J19	SAE J1939
Output Center position	C2	Inactive 0V / active 5V **
(signal)	C3	Inactive 0V / active Vsupply**
Other electrical	EMI	100 V/m
Characteristics		

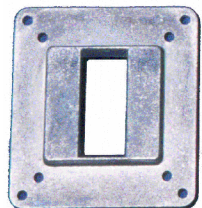
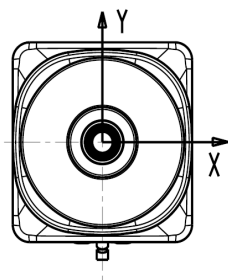
Mechanical Data	
Life	> 5 million cycles
Operating temperature	- 40°C to 85°C
Operating force	
(measured 140 mm from pivot point)	4 N, 8 N, 12 N, 16 N
Horizontal load maximum	100 Nm
Vertical load maximum	1000 N
max. Torque (Z-axis)	20 Nm
Protection Level	IP 65 above gate
Gate options	square, cross, single axis *
Lever deflection X/Y	± 20° *
Center position tolerance	± 2° + 0.5°
Weight	450g
Housing	Aluminum
Boot	EPDM (black)
Cable	Pigtail 600 mm without connector (24 AWG, 0,25 mm²)

\* others available on request

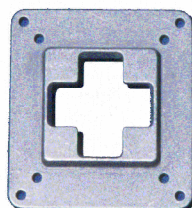
\*\* active, if the lever is in the center position  
inactive, if the lever is outside of the center position

# AJ3 - Analog Joystick

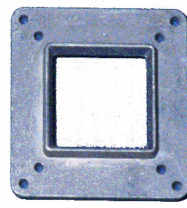
## Gates



Y-single axis



cross



square



Ordering code		1	2	3	4	5	6	7	8
	<b>Example</b>	AJ3	S	X12	Y12	-	VO8	C2	...
<b>1 Type</b>	AJ3								
<b>2 Gate</b>	S = Square C = Cross X = X-axis single Y = Y-axis single								
<b>3 X-Axis Operation Force</b>	X4 = 4 N X8 = 8 N X12 = 12 N X16 = 16 N								
<b>4 Y-Axis Operation Force</b>	Y4 = 4 N Y8 = 8 N Y12 = 12 N Y16 = 16 N								
<b>5 Overtravel (float)</b>	- = none (available on request)								
<b>6 Output Signals</b>	VO1 = 0 ... (Vsupply - 2.5V) VO2 = 0 ... 5V VO8 = 0.5 ... 4.5V VO9 = 25% Vsupply ... 75% Vsupply PW2 = PWM 500 Hz ± 80 Hz CA1 = CAN 2.0A CA2 = CAN 2.0B J19 = SAE J1939 based								
<b>7 Output Center Position (signal)</b>	C2 = inactive 0V / active 5V C3 = inactive 0V / active Vsupply <i>not for CAN-Versions</i>								
<b>8 Grip</b>	- = no grip ... = see MFG datasheet for grip order code								

Vsupply = voltage supply (Ubat)

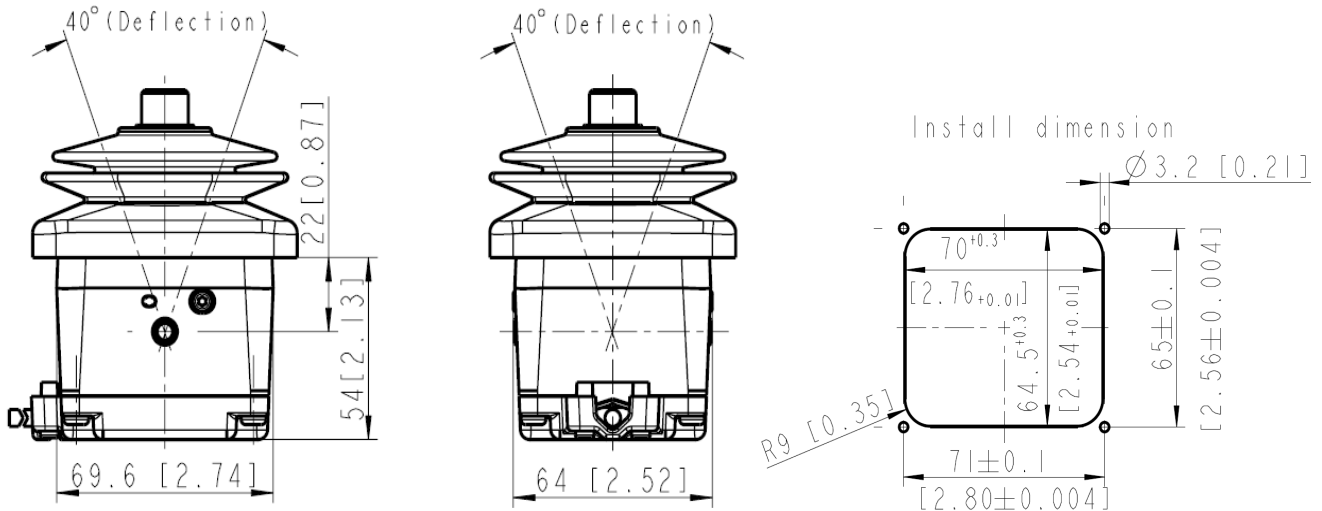
MFG = multifunction grip

## Recommended MFG operating force combination:

MFG	Operating force
Ball	4N, 8N
S2	8N, 12N
S1, S3, SK	12N, 16N

# AJ3 - Analog Joystick

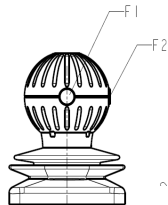
## Install dimensions for AJ3 – Joystick



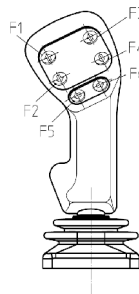
## Multifunction grips for AJ3 – Joystick

details see MFG datasheet

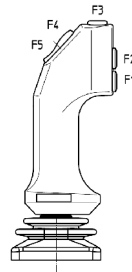
**MFG Ball**



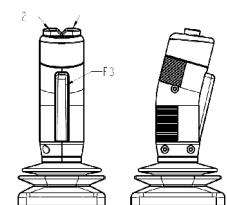
**MFG SK**



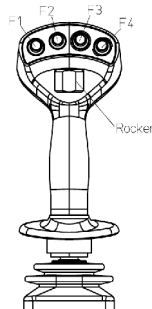
**MFG S1**



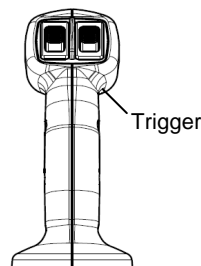
**MFG S2**



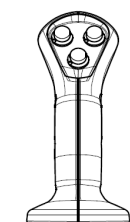
**MFG S3**



**MFG S4**



**MFG S7**



# AJ3 - Analog Joystick



**DeltaTech Controls** – A CoActive Technologies Company - **worldwide Facilities**

With sales offices and manufacturing facilities located worldwide, please visit our website at [www.deltatechcontrols.com](http://www.deltatechcontrols.com) for a complete listing and to find the office nearest to you.

**France**

2 Boulevard Michaël Faraday  
Arlington Square, Bâtiment B  
Serris – F 77716 Marne-La Vallée Cedex 4  
France  
phone: + 33 160 24 51 51  
fax: + 33 3 84 69 08 97  
Mail: [sales.dtc.europe@coactive-tech.com](mailto:sales.dtc.europe@coactive-tech.com)

**Germany**

Holzhauser Strasse 26-32  
D-13509 Berlin  
Germany  
phone: + 49 30 43 999 0  
fax: + 49 30 43 999 203  
Mail: [sales.dtc.europe@coactive-tech.com](mailto:sales.dtc.europe@coactive-tech.com)

**Hong Kong**

Office:1007-8  
10/F, Harcourt House  
39 Gloucester Road  
Wanchai, Hong Kong  
phone: + 852 3713 5288  
fax: + 852 2751 9926  
Mail: [sales.dtc.asia@coactive-tech.com](mailto:sales.dtc.asia@coactive-tech.com)

**Tokyo**

9F, Ariake Frontier Building B  
3-1-25 Ariake, Koto-ku, Tokyo 135-0063  
Japan  
phone: +81 3 5530 9365  
fax: +81 3 5530 8737  
Mail: [sales.dtc.japan@coactive-tech.com](mailto:sales.dtc.japan@coactive-tech.com)

**USA**

5288 Valley Industrial Blvd. S  
Shakopee, MN 55379  
USA  
phone: + 1 952 403 7400  
fax: + 1 952 233 9707  
Mail: [sales.dtc.americas@coactive-tech.com](mailto:sales.dtc.americas@coactive-tech.com)



No information and data contained in this publication shall be construed to create any liability on the part of DeltaTech Controls GmbH. Any new issue of this publication shall automatically invalidate and supersede any and all previous issues. Dimensions are subject to change without prior notice.

All Copyrights belong to DeltaTech Controls GmbH and CoActive Technologies.  
All other trademarks or registered trademarks are property of their respective owners.  
All data subject to change without notice. ©2009