

Analog Joystick – AJ3



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).

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

The AJ3 Joystick is available separately or combined with various multifunction grips (MFG).

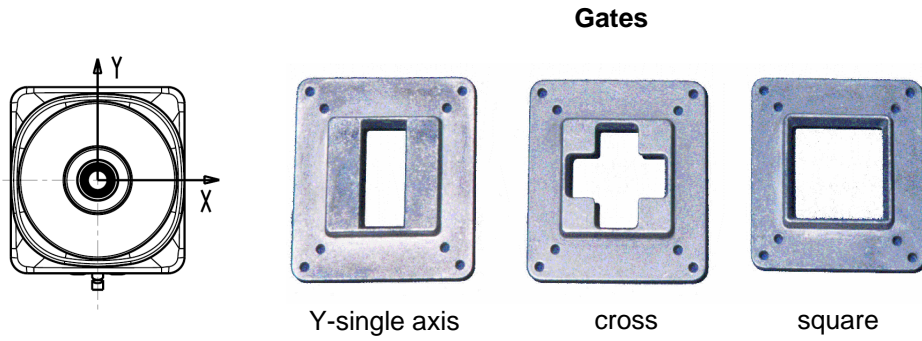
Electrical Data	Variant	
Supply Ratings:		
- Voltage range	8V ... 30V	
- Maximum current	180 mA at 24V dc	
- max. output voltage	Vsupply – 2.5V dc	
Voltage Output	VO1	0V ... (Vsupply - 2.5V dc)
(maximum output current 5 mA)	VO2	0 ... 5V dc
	VO8	0.5 ... 4.5V dc
	VO9	25% Vsupply ... 75% Vsupply
PWM Output	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 (signal)	C2	Inactive 0V / active 5V
	C3	Inactive 0V / active Vsupply
Other electrical Characteristics	EMI	100 V/m

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	1.000 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°
Weight	450g
Housing	Aluminum
Boot	EPDM (black)
Cable	Pigtail 600 mm without connector (24 AWG, 0,25 mm ²)

* others available on request



AJ3 - Joystick



Ordering code		1	2	3	4	5	6	7	8
	Example	AJ3	S	X12	Y12	-	VO8	C2	...
1 Type	AJ3								
2 Gate	S = Square C = Cross X = X-axis single Y = Y-axis single								
3 X-Axis Operation Force	X4 = 4 N X8 = 8 N X12 = 12 N X16 = 16 N								
4 Y-Axis Operation Force	Y4 = 4 N Y8 = 8 N Y12 = 12 N Y16 = 16 N								
5 Overtravel (float)	- = none (available on request)								
6 Output Signals	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 CA10 = CAN 2.0A (for MFG S3) CA2 = CAN 2.0B J19 = SAE J1939 based								
7 Output Center Position (signal)	C2 = inactive 0V / active 5V C3 = inactive 0V / active Vsupply <i>not for CAN-Versions</i>								
8 Grip	- = no grip ... = see MFG datasheet for grip order code								

Vsupply = voltage supply (Ubat)

MFG = multifunction grip

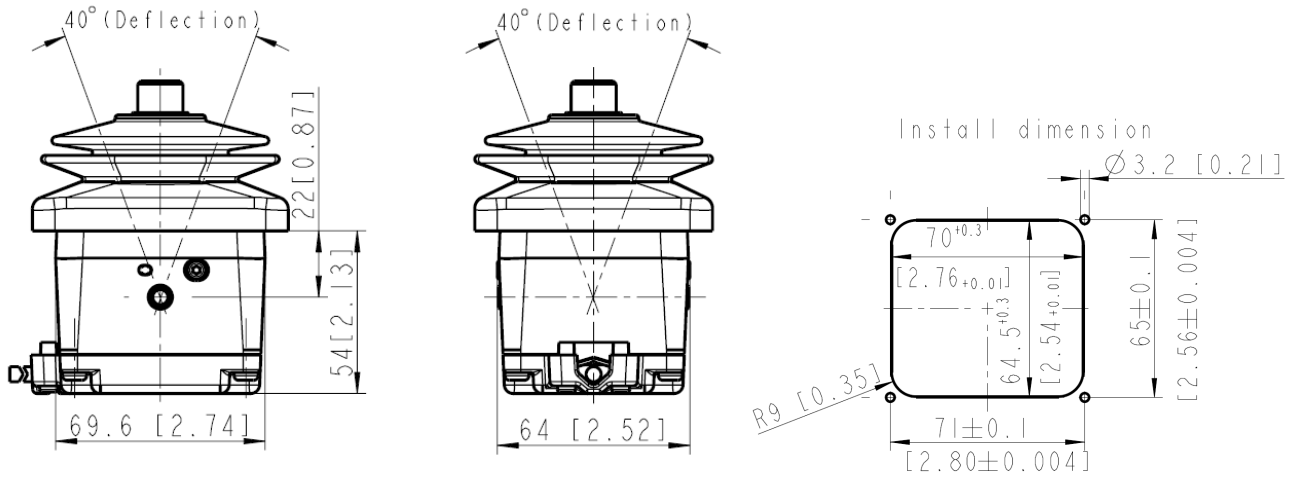
CAN output signals:

Order Code	CAN protocol	for grips
CA1	CAN 2.0A	Ball, S1, S2, SK
CA10	CAN 2.0A	S3
CA2	CAN 2.0B	Ball, S1, S2, SK

Recommended MFG operating force combination:

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

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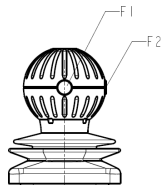


Install dimensions for AJ3 – Joystick

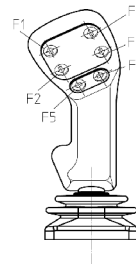
Multifunction grips for AJ3 – Joystick

details see MFG datasheet

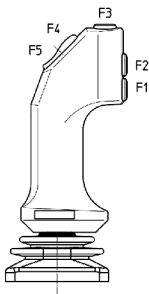
MFG Ball



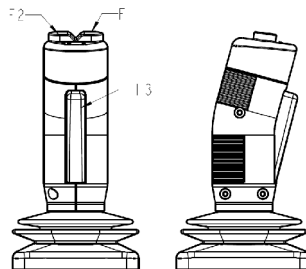
MFG SK



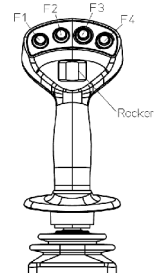
MFG S1



MFG S2



MFG S3



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