

# Data Sheet for Joysticks

Hand Joystick

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Serie 871



- 2 Axes (additional axes can be realized with e.g. rockers)
- Multifunction Handle for individual configurations with push-buttons, rockers, Deadman switches and Thumb joysticks
- Expected life up to 5 million cycles

Based on robust structures, joysticks of the 871 series are well suited for applications in harsh environments.  
Robust design: Failsafety in most demanding applications.  
Individualized design: Specific placement of further components (thumb joysticks, rockers, switches, etc.) on top of and underside the cobra-like head.  
Ergonomic design: Fatigue-proof operation and optimized accessibility of additional functions.

## Technical Data Joystick

Sensor	Hall Sensor
Supply Voltage	5 VDC ±0,5 VDC transient free
Output Voltage	0,5..4,5 V (redundant signals available)
Independent Linearity Tolerance	±3% full scale
Load Resistance	> 10 kOhm
Insulation Resistance	Over 1000 MOhm at 500 VDC
Dielectric Strength	1 minute at 500 VAC
EMV Durability	100 V/m (80 MHz ~ 1 GHz 1kHz sine-wave 80% AM modulation)
ESD Durability	±8 kV Contact / ±15 kV Aerial Discharge
Mechanical Life Expectancy	5 million cycles
Mech. Angle of Movement	±20° (±2,5°) from center
Operation Force X- & Y-Axis / Z-Axis	3 - 4,5 N / 10 - 25mN*m (rockers)
Vibration	10~55Hz 98m/s <sup>2</sup>
Shock	294m/s <sup>2</sup> (30G)
Operating Temperature	-20°C..+60°C

## Wire colors Joystick<sup>(\*)</sup>

Function	Color	Function	Color	Function	Color
Ground X & Y	Black	Signal X-Axis	White	Signal X-Axis Dual Output	Brown
Supply Voltage X & Y	Red	Signal Y-Axis	Blue	Signal Y-Axis Dual Output	Black
		Signal Z1	White	Signal Z1 Dual Output	Blue
		Signal Z2	Blue	Signal Z2 Dual Output	

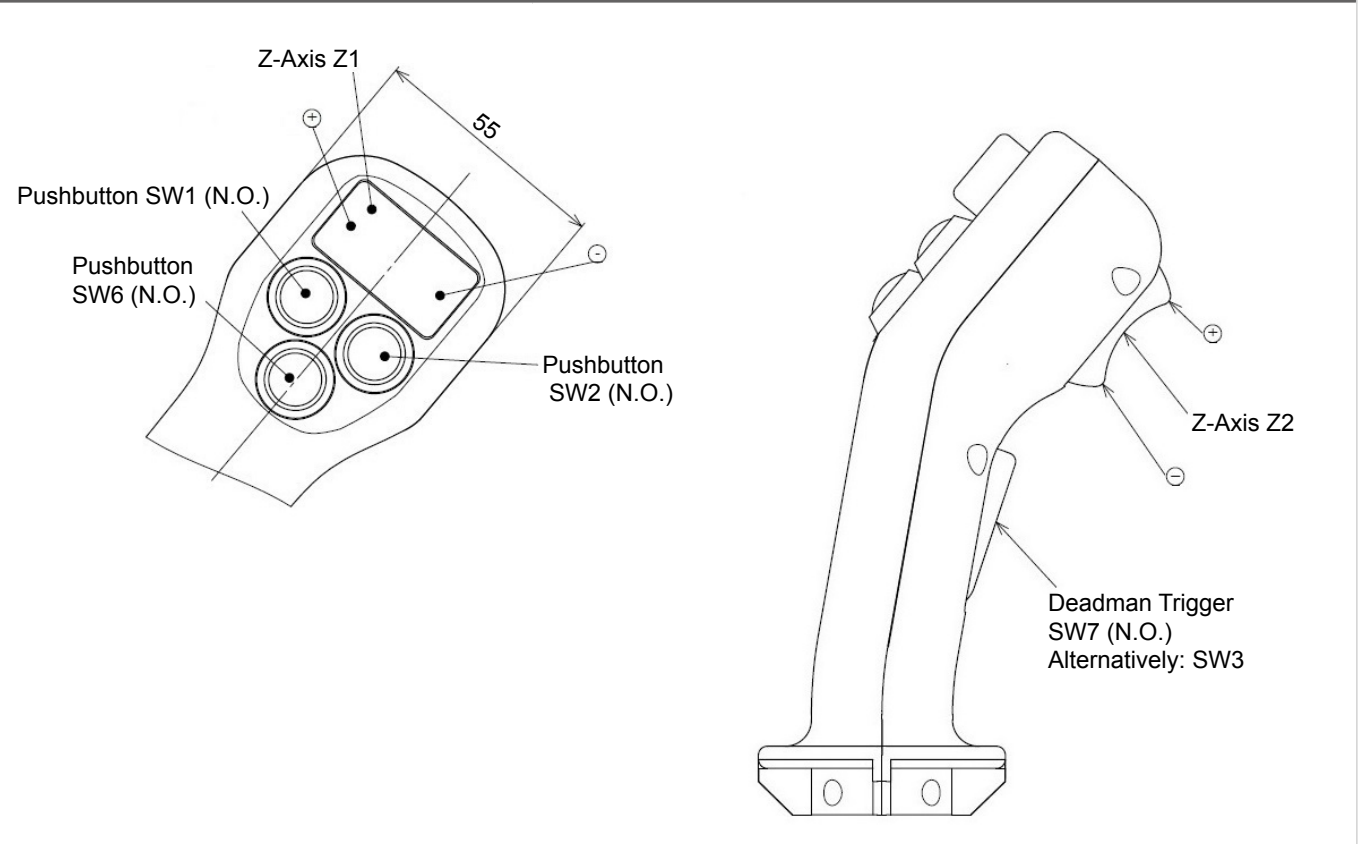
(\*) Each product comes with individually labeled wires, please compare prior to installation.  
Lead wires AWG27, length ca. 300mm.  
Please contact us for specific connector and cable length requirements.

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## Configuration (Example)



## Technical Data Pushbuttons & Trigger

### Pushbuttons SW1, SW2, SW3, SW6

Operating Characteristics	Momentary (Normally Open)
Rating	100mA, 50VDC
Dielectric Strength	1 minute at 1000 VAC
Insulation Resistance	Over 1000 MOhm at 500 VDC
Expected Life	500.000 operations

### Trigger SW7

Operating Characteristics	Momentary (Normally Open)
Rating	100mA, 12VDC
Dielectric Strength	1 minute at 500 VAC
Insulation Resistance	Over 100 MOhm at 500 VDC
Expected Life	300.000 operations



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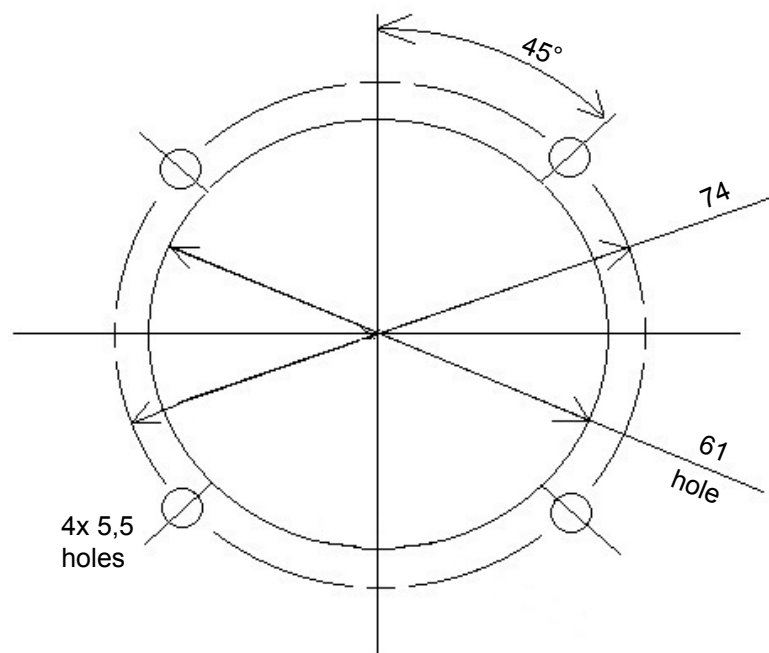
## Order Code

<b>Series</b>	871							
<b>Axes</b>								
2 Axes		2						
3 Axes, with Rocker Z1		3						
3 Axes, with Rocker Z2		4						
4 Axes, with Rockers Z1 + Z2		6						
<b>Rubber Boot</b>			5					
<b>Spring Return to Center Position</b>				1				
<b>Handles</b>								
Cobra					1			
Cobra with Deadman Trigger SW7					2			
Cobra with Pushbutton SW3					3			
<b>Limiters</b>								
Square						Q		
<b>Output Signals</b>								
0,5..4,5 V, Single Output							2	
0,5..4,5 V, Dual Output parallel							P	
0,5..4,5 V, Dual Output inverse							X	
<b>Pushbuttons</b>								
None								0
1 Pushbutton SW6								1
2 Pushbuttons SW1, SW2								2
3 Pushbuttons SW6, SW1, SW2								3

For customer-specific projects there are far more possibilities for individual configurations than shown with this order code table. We kindly ask you to contact us to discuss the best solution for your needs.

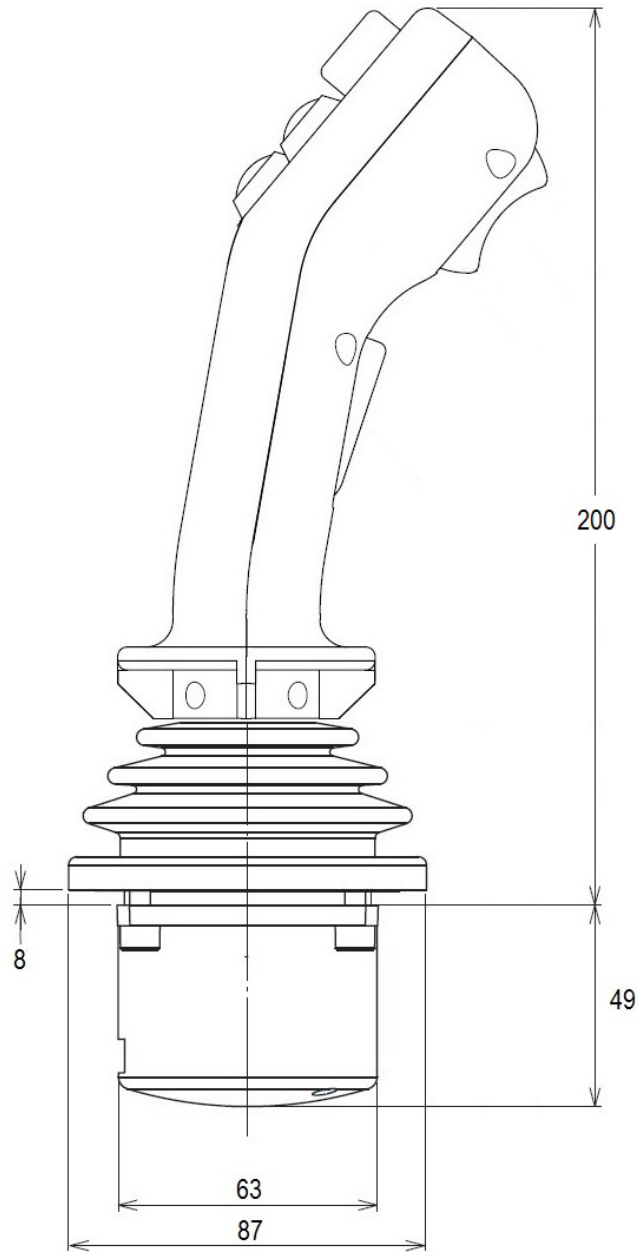
## Panel Cut-Outs

Drop-In Installation



Dimensions in mm.

## Technical Drawing



Dimensions in mm.