Data Sheet for Joysticks

Hand Joystick — Series 891

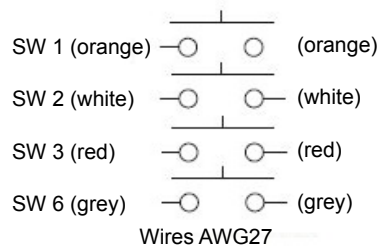


- Cobra head ergonomic multifunction handle
- 1 to 4 Axes
- Optional up to six micro switches, plus four pushbuttons and two switches

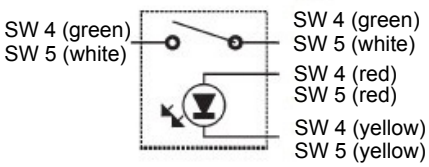
The 891 series offers an outstanding ergonomic handle and high quality mechanism. The Cobra head-like handle can be configured with pushbuttons, switches and a trigger enabling many different deflection-dependent operations according to your needs.

Technical Data Joystick	
Angle of Movement X-, Y-Axis	±22..±26° from center
Angle of Movement Z1-, Z2-Axis	15° ±4 °
Vibration	10 G
Shock	30 G
Length of Wires	300 mm
Return to Center Accuracy X / Y	±3%
Operating Force	2..12 N
Expected Life	10 million cycles
Operating Temperature	-20..+60°C
Weight (depending on configuration)	ca. 950 g

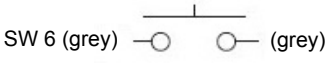
Technical Data Pushbuttons	
Pushbuttons SW1, SW2, SW3, SW6	
Operating Characteristics	ON when pushed (momentary)
Insulation Resistance	> 1.000 MOhm at 500 VDC
Expected Life	approx. 500.000 operations
Rating	50 VDC / 0,1 A
Dielectric Strength	1 minute at 1.000 VAC
Pushbuttons SW4, SW5, illuminated	
Operating Characteristics	Alternate type
Insulation Resistance	> 200 MOhm at 500 VDC
Expected Life	approx. 10.000 operations
Rating	30 VDC / 5 A
Rating LED	1,85 VDC / 20 mA
Trigger SW7	
Operating Characteristics	ON when pushed (momentary)
Insulation Resistance	> 100 MOhm at 500 VDC
Expected Life	approx. 100.000 operations
Rating	30 VDC / 100 mA
Dielectric Strength	1 minute at 600 VAC



Wires AWG27



Wires AWG27



Wires AWG27

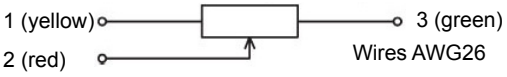
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Technical Data Potentiometers X- / Y-Axis

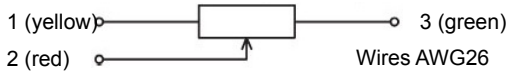
Total Resistance Value	10 kOhm ±15%
Electrical Rotating Angle	44° ±5°
Expected Life	approx. 5 million cycles
Power Rating	max. 0,2 W
Independent Linearity	±3%
Return to Center Accuracy	±1,5%



Only for joysticks 891 with bottom housing wires will be attached and fed to the outside.

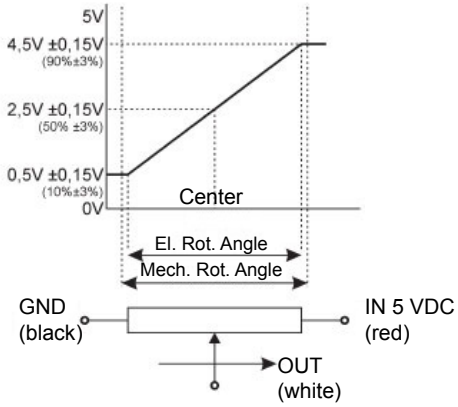
Technical Data Potentiometers Z1, Z2

Total Resistance Value	10 kOhm ±15%
Electrical Rotating Angle	30° ±5°
Expected Life	approx. 2 million cycles
Power Rating	max. 0,2 W
Independent Linearity	±3%
Return to Center Accuracy	±3%



Technical Data Hall Sensor Type H

Supply Voltage	5 VDC ±10%
Current Consumption	approx. 6 mA
Output Voltage	0,5 .. 4,5 VDC
Impedance	> 100 kOhm
Independent Linearity	±3%
Temperature Drift Out	< ±2,5% U_{Out} FS
Temperature Drift Center	< ±0,5% U_{Out} FS
Dielectric Strength	1 minute at 250 VAC
Insulation Resistance	> 100 MOhm at 250 VDC
Operating Temperature	-20..+65 °C
Expected Life	approx. 5 million cycles



Note: Max. Voltage < 50VAC resp. < 75VDC, additionally max. power rating must be considered.

Technical Data Micro Switches (activated by handle deflection)

Joysticks of Series 891 can be optionally supplied with micro switches. For each axis, up to 3 angles for activation of these switches are possible. The specification of suitable angles can be given by the customer. E.g. one variant could be: One switch for the detection of center position (Joystick at rest) plus additional positions at +10° and -10° on each axis.

	Angle Position (without / with housing)	Center Detection
Voltage, Current	50 VAC, 5 A / 30 VDC, 100 mA	50 VAC, 5 A
Expected Life approx.	200.000 / 100.000	200.000

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Order Code

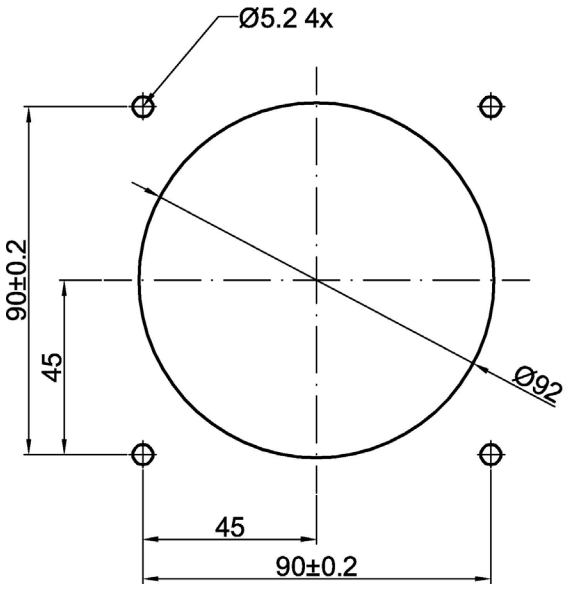
Series	**891**											
Axes												
1 Axis		1										
2 Axes		2										
3 Axes, with Rocker Z1		3										
3 Axes, with Rocker Z2		4										
4 Axes, with Rockers Z1 + Z2		6										
Rubber Boot			5									
Spring Return to Center Position				1								
Without Spring Return				2								
Friction Clutch with Center Detect Switch				5								
Friction Clutch				6								
Handles												
Cobra					1							
Cobra with Trigger SW7					2							
Cobra with Pushbutton SW3					3							
No Trim Function (Standard)						1						
With Trim Function (only w/ Pot and w/o housing)						3						
Sensors												
Potentiometer F (X-/Y-Axis), PW30 (Z-Axis)							4					
Hall Sensors (X-/Y-Axis), PW30 (Z-Axis)							H					
Housing												
Without Housing								0				
With Housing								1				
Limiters												
Round (Standard)									1			
Square									2			
„L“-Shape									3			
Single Axis Y									6			
Single Axis X									7			
Plus Shape „+“									9			
Without Center Detecting Switch										0		
Center Detect X-/Y-Axis										1		
Position Switch X-/Y-Axis ON at ±5° Deflection										2		
Position Switch X-/Y-Axis ON at ±5° Deflection & Center Detecting Switch										3		
Pushbuttons												
None											0	
1 Pushbutton SW6											1	
2 Pushbuttons SW1, SW2											2	
3 Pushbuttons SW6, SW1, SW2											3	
Switches												
None												0
1 Switch SW4												1
2 Switches SW4, SW5												2

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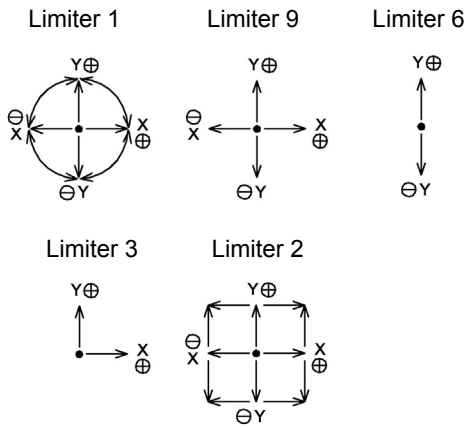
For higher quantities or on-going demand, additional options are available

For example:
- Customer-specific wiring

Mounting Cut-Out and Orientation of Limiters



Orientation of Limiters

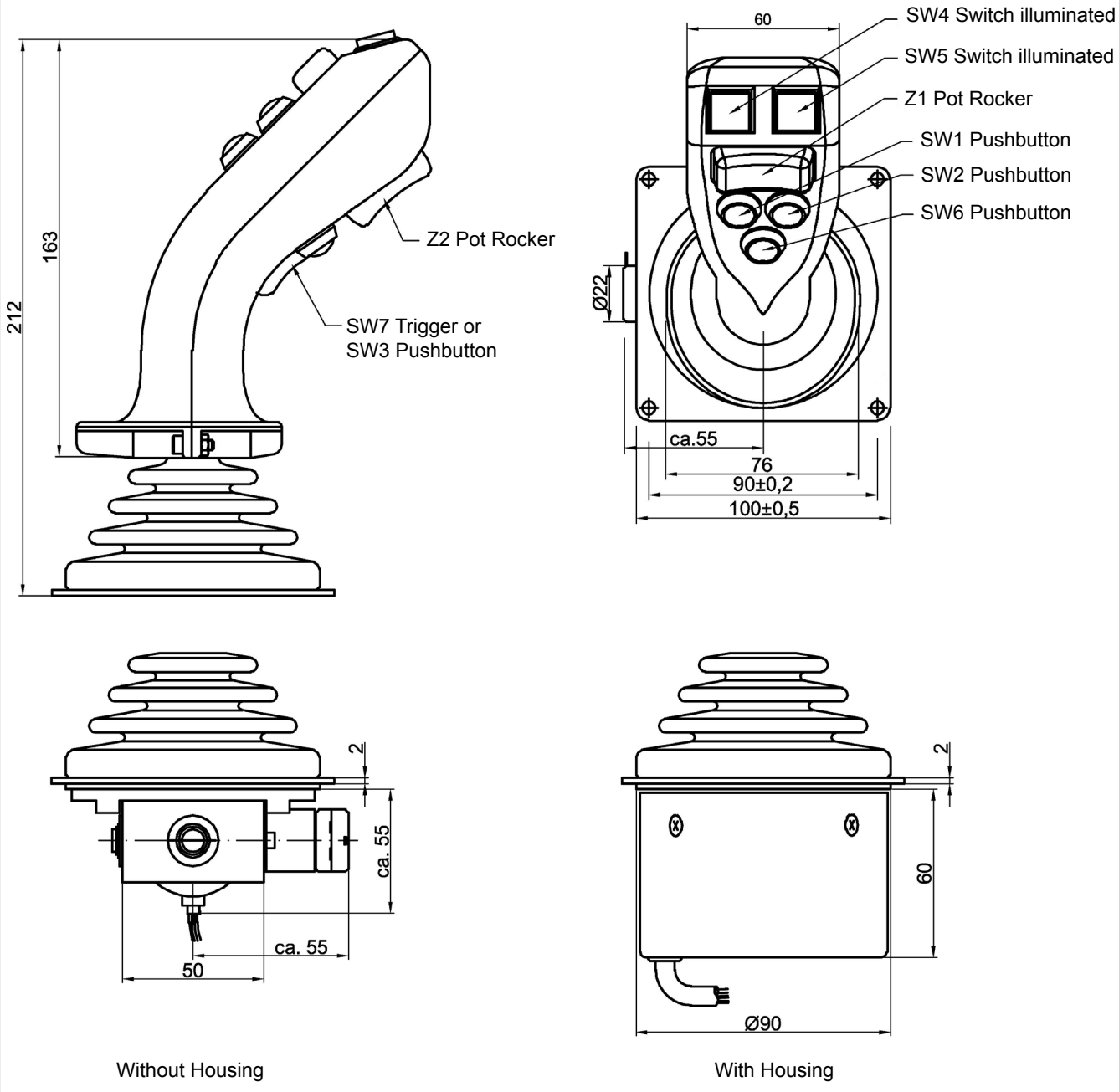


All Dimensions in mm

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Technical Drawings



Without Housing

With Housing

All Dimensions in mm

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