

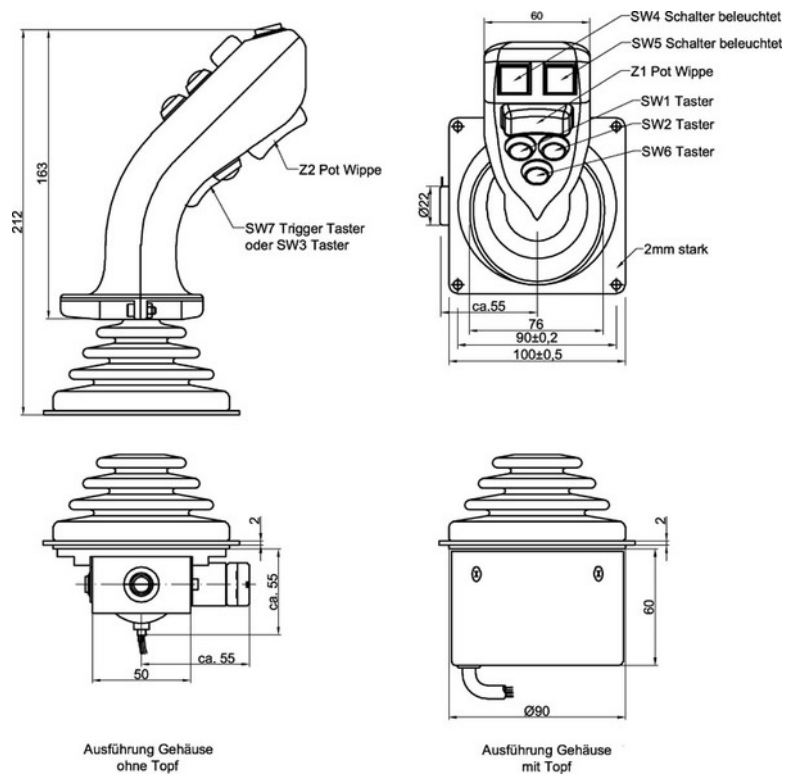
891 Hand-Joystick

- 1 to 4 Axes
- Ergonomically designed handle, look like cobra head
- With or without center return
- High life cycles
- Optional up to 6 micro switches
4 push buttons and 2 switches
- Application: Cranes, Lift Trucks, Utility Vehicles,
Construction Machines

The series 891 is provided with an ergonomically, configurable handle and a high-grade mechanics.

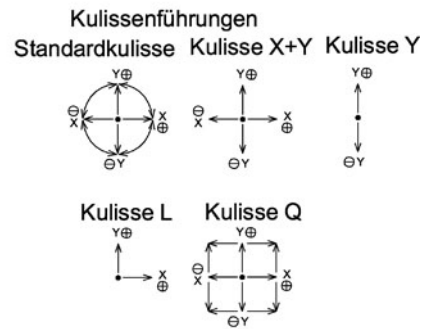
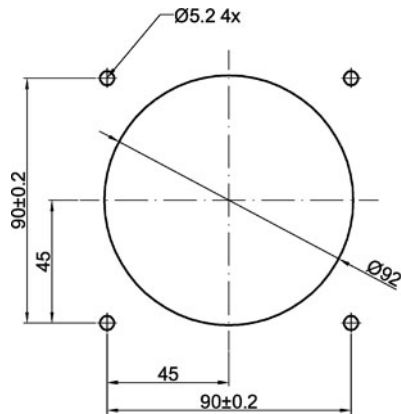


Drawing



891 Hand-Joystick

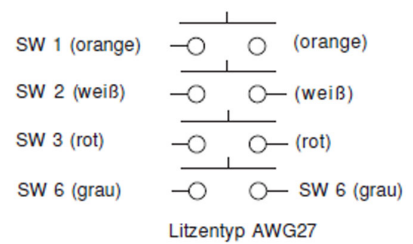
Drilling and Limiter Plate



Push Button and Switch in the Handle

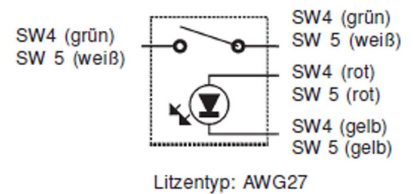
Push Button SW1, 2, 3 and 6

Model	"ON" when pushed
Insulation Resistance	> 1MOhm bei 500 V DC
Life Cycles	typ. 500.000
Rating	50V DC / 0,1A
Dielectric Strength	one minute at 1.000 V AC



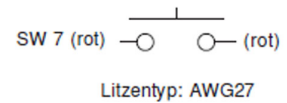
Illuminated Buttons SW4 and SW5

Model	Toggle Switch
Insulation Resistance	> 200MOhm at 500V DC
Life Cycles	typ. 10.000
Rating	30V DC / 5A
Rating LED-Illumination	1,85V DC / 20mA



Trigger Taster SW7

Ausführung	"ON" when pushed
Insulation Resistance	> 100MOhm at 500V DC
Life Cycles	typ. 100.000
Rating	30V DC / 100mA
Dielectric Strength	one minute at 600V AC



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Micro Switch

The 891 series provides the additional option of directional switches at the X and Y axis. On each axis up to three switching positions are feasible, the angular position in relation to the axis deflection can be specified by the customer. In example a center detect switch and a directional switch at $\pm 10^\circ$ deflection angle is viable. Due to the manifold combination possibilities, these combinations can not be included within the standard product configuration code, please inquire your special switch specification at our sales engineers.

Technical Data	Switch (with jar)	Center Switch
Voltage / Power	125V AC / 5A (30V DC / 100mA)	125VAC/5A
Life Cycles typical*	200.000 (100.000)	200.000

*) The life time has been tested under permissible voltage- and power ratings.

The specifications and information in this datasheet cannot consider all special demands that are caused by the application. Because of this, they are no general description of the properties of the product.

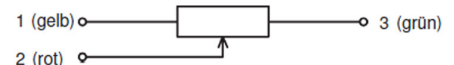
Technical Data

Deflection X-, Y-Axis from Center Pos.	$\pm 22^\circ \dots \pm 26^\circ$
Deflection Z1-, Z2-Axis from Center Pos.	$15^\circ \pm 4^\circ$
Vibration	10 G
Shock	30 G
Cable Length	300 mm
Center Reset Tolerance X-, Y-Axis	± 2
Center Reset Tolerance Z1-, Z2-Achse	± 3
Operating Temperature	$-20 \dots +60^\circ \text{C}$
Operating Force	2 ... 12 N
Weight	$\approx 950 \text{ g}$
Life Cycles	typical 5 million

Technical Data

Potentiometer X/ Y- Axis

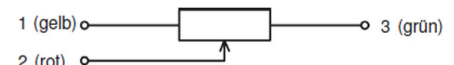
Resistance Value	10 kOhm \pm 15 %
Electrical Angle	44° \pm 5°
Life Cycles	typ. 5 million
Rating	max. 0,2 W
Max. Wiper Current	1 mA
Independent Linearity	\pm 3%
Center Return Accuracy	\pm 1,5%



Nur das Modell 891 mit Gehäusetop hat Anschlusslitzen. Die Farbe der Litzen ist nebenstehend in Klammern dargestellt. Litzentyp AWG26.

Z-Axis Potentiometer Z1 and Z2

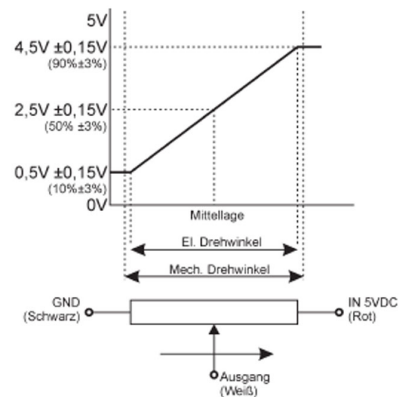
Resistance Value	10 kOhm \pm 15 %
Electrical Angle	30° \pm 5°
Life Cycles	typ. 2 million
Rating	max. 0,2 W
Max. Wiper Current	1 mA
Independent Linearity	\pm 3%
Center Return Accuracy	\pm 3%



Die Farbe der Litzen ist nebenstehend in Klammern dargestellt. Litzentyp AWG26.

Hall Effect Sensor Type H

Technology	Hall Sensor
Supply Voltage	5 VDC \pm 10%
Power Consumption	ca. 6 mA
Output	0,5V ... 4,5V
Independent Linearity	\pm 3%
Load Resistance	> 100k
Resolution	infinite
Temperature Drift Output	< \pm 2,5% U_{Out} FS
Temperature Drift Center	< 0,5% U_{Out} FS
Insulation Strength	1 Minute / 250V AC
Insulation Resistance	> 100MOhm bei 250V AC
Operating Temperature	-20°C ... +65°C
Life Cycles #1	typ. 5 million



#1) Tested under laboratory conditions.

2008. All specifications are subject to change without notice.

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Options and Order Description

	Series	Axis	Bezel	Reset Device	Handle	Trimm	Sensor	Housing	Limiter Plate	Switch	Handle Push Button	Handle Switch
Joystick potentiometric	891											
1 Axis		1										
2 Axes		2										
3 Axes (Z1)		3										
3 Axes (Z2)		4										
4 Axes (Z1 + Z2)		6										
Rubber Boot			5									
Center Return				1								
without Center Return				2								
Friction Clutch with Center Grid X/Y Axis				5								
Friction Clutch				6								
Standard Handle					1							
Handle with Trigger Switch SW7					2							
Handle with Push Button SW3					3							
without Trimm						1						
Potentiometer Type F for X + Y, Pot. Type PW30 for Z							4					
Hall sensors for X/Y Axis, PW30 for Z Axis							H					
without Jar								0				
with Jar								1				
Limiter Plate Standard round									1			
Limiter Plate square									2			
Limiter Plate L-shaped									3			
Forcible Control Y-Achse									6			
Forcible Control X-Achse									7			
Forcible Control X + Y Achse									9			
without										0		
Center Switch X + Y										1		
without Push Button / Switch											0	
1 Push Button (SW-6)											1	
2 Push Button (SW-1, -2)											2	
3 Push Button (SW-6, -1, -2)											3	
without												0
1 Switch (SW-4)												1
2 Switches (SW-4, -5)												2

Please ask for more options.