
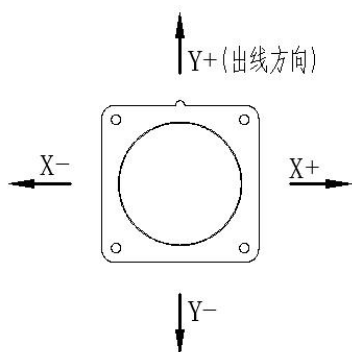
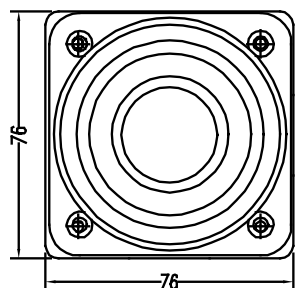


Product feature		
<ul style="list-style-type: none"> <li>• Ergonomic design</li> <li>• Uniaxial or biaxial operation, spring reset</li> <li>• Sturdy joystick for harsh environments</li> <li>• Equipped with 2a@30VDC micro switch, independent switch output</li> <li>• Upper handles for all types</li> </ul>		
Application		
<ul style="list-style-type: none"> <li>• Drive proportional valves and switching valves for electro-hydraulic control</li> <li>• Rotary drilling RIGS, high-altitude fire engines, cranes, shield machines and other electrical and electro-hydraulic control systems.</li> </ul>		
Technical data		
<b>Mechanical parameter</b>		
Angle	±25°	
Operating force**	10~20N(self return)	
Limit force	300N	
Life	> 2000, 000(potentiometer) > 5000,000(hall)	
Weight (base only)	560g	
**93 mm from pivot point		
<b>Electric parameter</b>		
<b>Analog/Hall voltage type</b>		
Voltage	5.0 ± 0.5Vdc	
Current	<9mA	
Median voltage	2.5±0.15V	
Output linear error	±3%	
Maximum overload voltage	30Vdc	
Max reverse voltage	-15Vdc	
Load resistance	>10KΩ	
Insulation resistance	>1000MΩ	

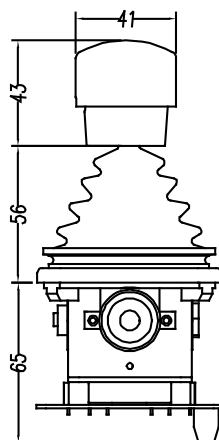
<b>Analog/potentiometer type</b>	
Current	9 ~ 36Vdc
Resistance	5KΩ, 10 KΩ
Median dead zone Angle	±3°
Max power	0.2W
<b>Micro switch</b>	
Configuration	2 micro switches per axis, normally on
Opening Angle	2° ~ 5°
Load capacity	10A@30Vdc (Resistive load)
Insulation Resistance	Above 100MΩ (500Vdc load capacity)
<b>Enviromental parameter</b>	
Operating temperature	-30°C ~ +80°C
Storage temperature	-40°C ~ +85°C
Protection grade	IP65 (above plate)

<b>Product Selection</b>	
<b>Model</b>	D191 - ① - ② - ③ - ④ - ⑤
<b>① operating mode</b>	
SA	Spring return, single-axis forward and backward directional operated
DAC	Spring return, dual-axis cross directional operated
DAP	Spring return, dual-axis arbitrary directional operated
<b>② Output</b>	
H51	Hall effect, each axis of single hall sensor,5Vdc power supply,0.5~2.5~4.5V output voltage
H52	Hall effect, each axis of single hall sensor,5Vdc power supply,0~2.5~5.0V output voltage
P051	Potentiometer,<36Vdc power supply, with 5KΩ center-tapped potentiometer,0%-100%Vdc output
P101	Potentiometer,<36Vdc power supply, with 10KΩ center-tapped potentiometer,0%-100%Vdc output
NA	No analog output
<b>③ Micro switch</b>	
N	No micro switch
S1	Single axis with a normally open switch in the middle position
S2	Single axis with two normally open switches in front and rear directions
S4	Dual axis, each axis with two normally open switches in front and back direction
<b>④ Handle</b>	
M	M handle, top palm operated
C	C handle, top without button
CS	C handle, top with button
W	W handle, with deadman switch and trigger switch
WS	W handle, with deadman switch and top self locking button
<b>⑤ Wires connection</b>	
L	Direct cable outlet (cable specification: AF200,28#, outlet length: 500mm)
C	Terminal outlet

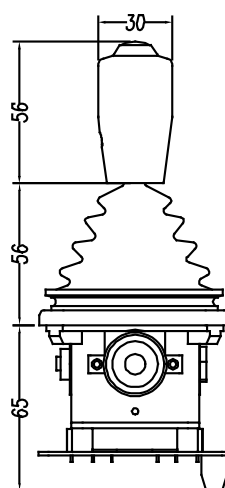
Dimensions



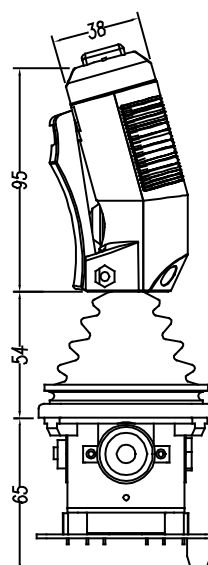
M



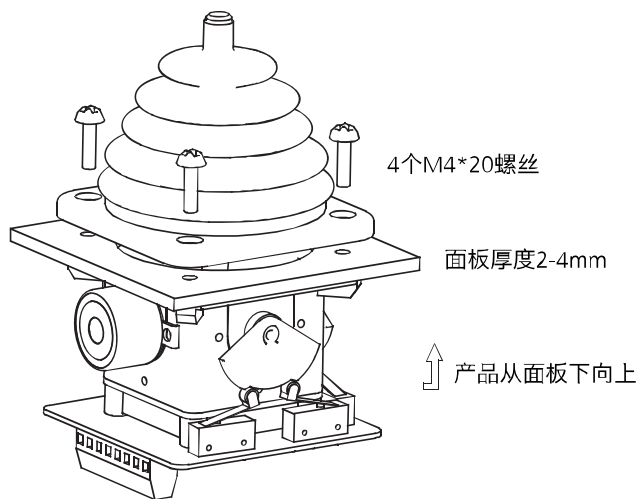
CS



W



## Installation of mechanisms



## The opening of customer panel is indicated

