LT60 Series Multi Axis Joystick

Product Features

- Ergonomics design on mobile application.
- Uncontact hall effect and long expect-life potentiometer optional.
- Various handle, different number and location of button switches optional.
- CAN bus output optional.

Application

Typical application on Cranes, loaders. Forklifts, excavators, access platform, tractors, harvesters, and so on.

Technical Information

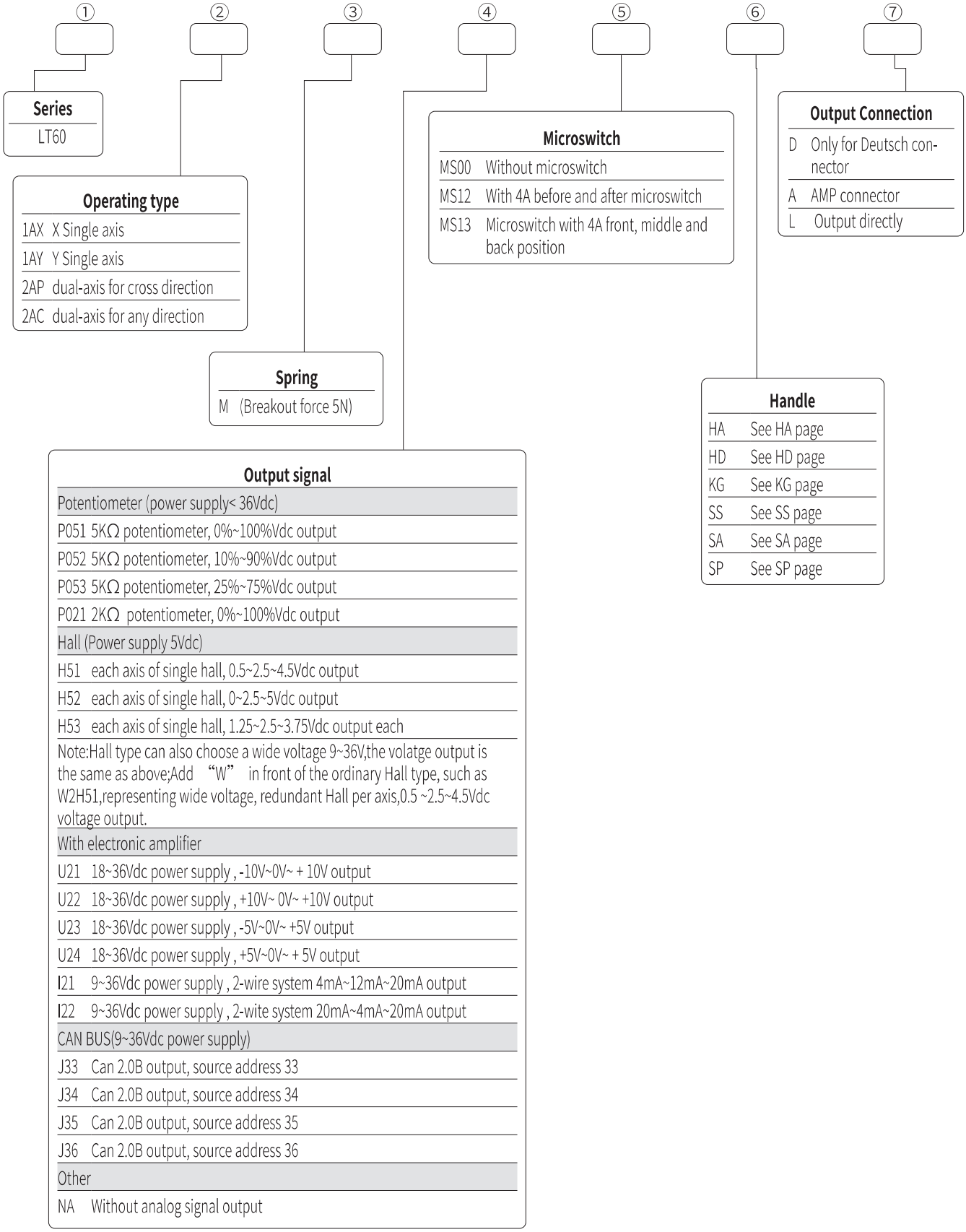
Electrical data	
Potentiometer	
Power supply	<36Vdc
Resistance	2KΩ, 5KΩ
Electrical angle	±18°
Center voltage	48%~52%Vdc (Power supply)
Center tap angle	±2.5°
On-load voltage (max)	32Vdc
Power dissipation	0.25W (25°)
Hall	
Power supply	5±0.5Vdc
Supply current	<11mA (Each of hall)
Maximum allowable overload voltage	20Vdc
Reverse maximum allowable voltage	-10Vdc
Output linearity tolerance	<±4V
Directional switch	
Load capacity	2mA@30Vdc (Resistance load)
Breakout angle	±3°~ 5°
Contact resistance	<200Ω
With electronic amplifier	
Power supply	18~36Vdc (U21~U24) 9~36Vdc
Power current consumption	＜20mA
Maximum output current	10mA
CAN BUS	
Power supply	9~36Vdc
CAN Version	CAN 2.0B

Electrical data	
Protocol	J1939
Connector	6 p-pin (Deutsch)
Microswitch	
Load capacity	4A@30Vdc (Resistance load)
Expecting life	30 million times (Mechanical) 200 thousand times (Electrical)
Insulation resistance	＞100MΩ
Breakout angle	±3°~ 5°

Mechanical features	
Travel angle	±20°
Operating type	Spring return
Breakout force	5N
Operating force(max)	16N
Maximum allowable force	>300N
Expecting life	>2million cycles (Potentiometer) >5 million cycles (Hall effect)
Weight	475g (Without handle)

Environmental data	
Operating Temperature	-30°C~+70°C
Storage Temperature	-40°C~+85°C
Protection level	IP65 (Above the flange)

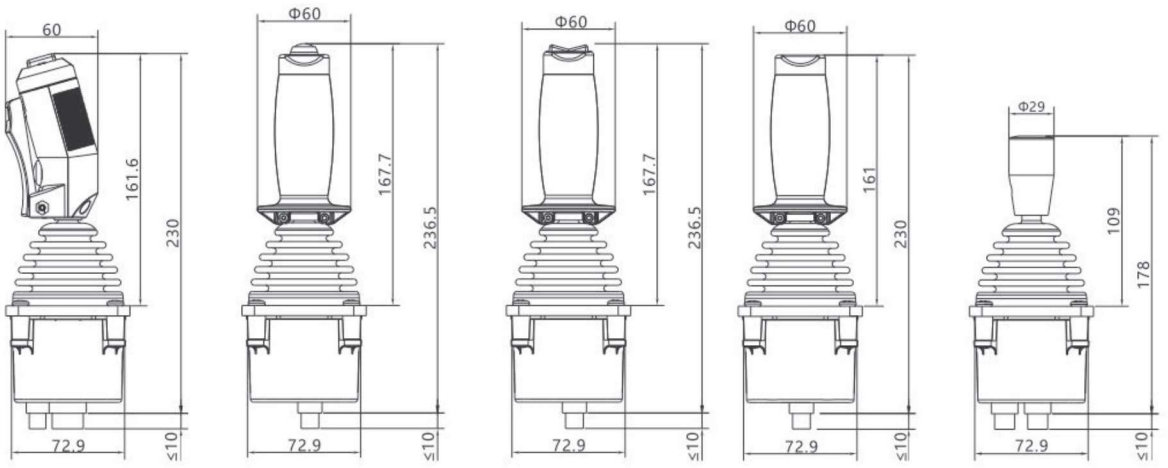
Product Configuration



Dimensions

Optional button color:

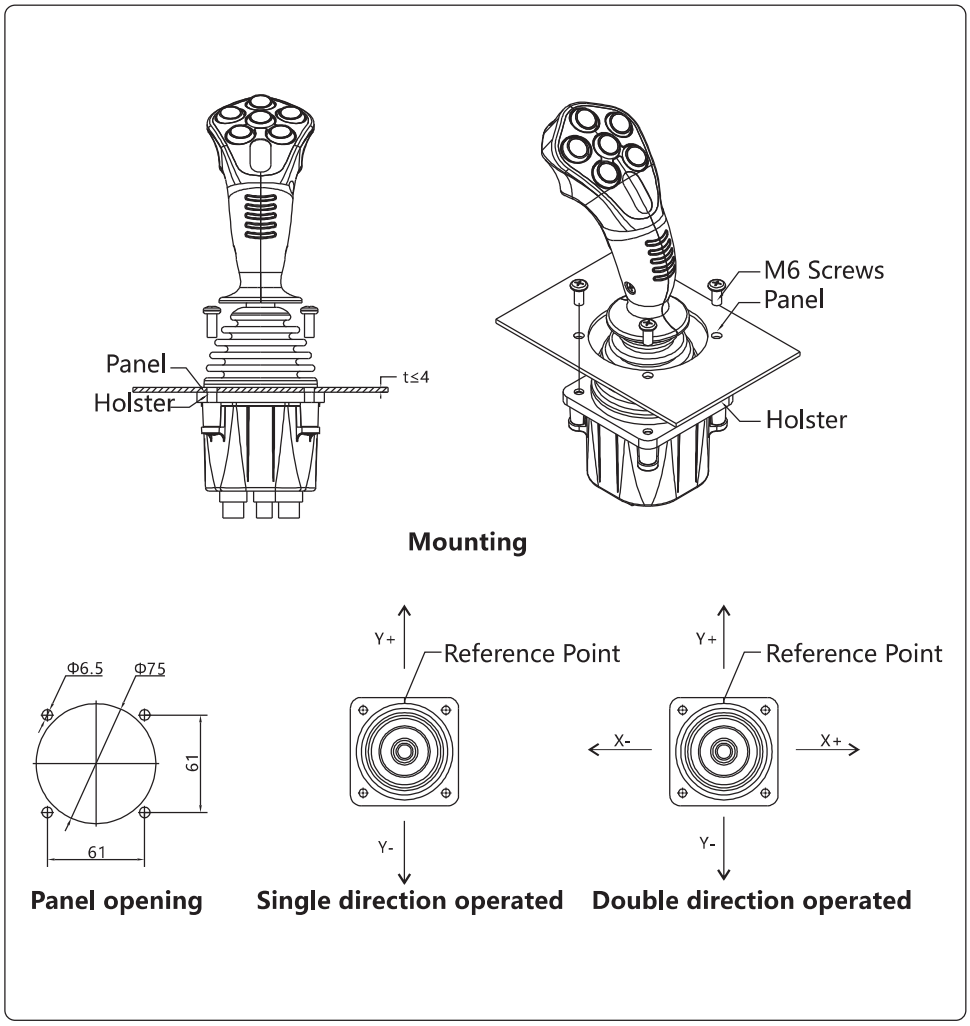
The handle



KGDR HDS HDR HD HA

Notes: Other choice reference other page.

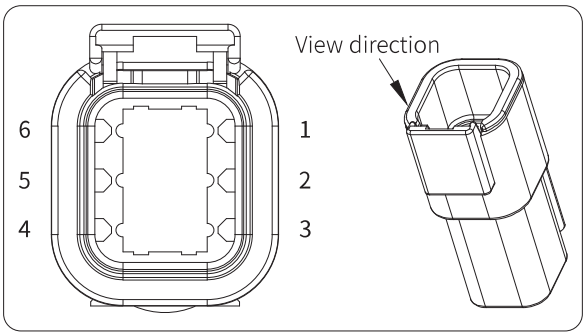
Product Installation



Deutsch connection

Pin	Can output	Color
1	GND	Black
2	VCC	Red
3	CAN high	Yellow
4	CAN low	Green
5	CAN shield	N/A
6	N/A	N/A

Deutsch connector



Electrical Connections

AMP Connector

16 Pin

Pin	Potentiometer	Hall	With electrical amplifier for output voltage	With electrical amplifier for output current
1	Y-axis forward directional switch	Button switch 4	Common terminal of button switch	Common terminal of button switch
2	N/A	Button switch 3	Button switch 1	Button switch 1
3	X-axis pot left terminal	Button switch 2	Button switch 2	Button switch 2
4	X-axis pot wiper	Button switch l	Button switch 3	Button switch 3
5	X-axis pot right terminal	Top Button	Button switch 3	Button switch 3
6	X-axis pot right terminal	Button switch 5	Button switch 5	Button switch 5
7	X-axis switch common terminal	Button switch 6	Button switch 6	Button switch 6
8	X-axis left directional switch	Deadman switch	Top Button	Top Button
9	Y-axis pot backward terminal	Button switch 9	Deadman switch	Deadman switch
10	Y-axis pot wiper	Button switch 10	Deadman switch	Deadman switch
11	Y-axis pot forward terminal	Common terminal of button switch	X-axis left directional switch	X-axis left directional switch
12	Y-axis pot center tap	Deadman switch	X-axis pot right terminal	X-axis pot right terminal
13	Y-axis switch common terminal	N/A	Y-axis backward directional switch	X-axis switch common terminal
14	Y-axis backward directional switch	N/A	Y-axis forward directional switch	Y-axis forward directional switch
15	X-axis right directional switch	N/A	Switch common terminal	Y-axis forward directional switch
16	N/A	N/A	N/A	Y-axis switch common terminal

12 Pin

Pin	Potentiometer	Hall
1	Button switch 4	+5V + 5V (redundant hall)
2	Button switch 3	0V (redundant hall)
3	Button switch 2	+5V power supply
4	Button switch 1	0V power supply
5	Top button	Y-axis output (redundant hall)
6	Button switch 5	X-axis output
7	Button switch 6	X-axis output (redundant hall)
8	Deadman switch	Y-axis output
9	Button switch 9	Z1-axis output
10	Button switch 10	Z2-axis output
11	Button switch common terminal	Z1-axis output (redundant hall)
12	Deadman switch	Z2-axis output (redundant hall)

※Standard Hall output, 3/4/6/8 pin outlet

8 Pin

Pin	Hall	Conversion circuit output
1	Forward directional microswitch common terminal	VCC
2	Forward directional microswitch output terminal	GND
3	Backward directional microswitch output terminal	X-axis output
4	Backward directional microswitch common terminal	Y-axis output
5	Left directional microswitch common terminal	Out com
6	Left directional microswitch output terminal	NA
7	Right directional microswitch output terminal	NA
8	Right directional microswitch common terminal	NA

AMP Connector