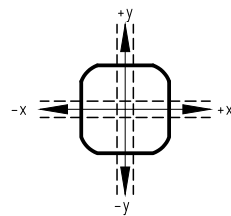
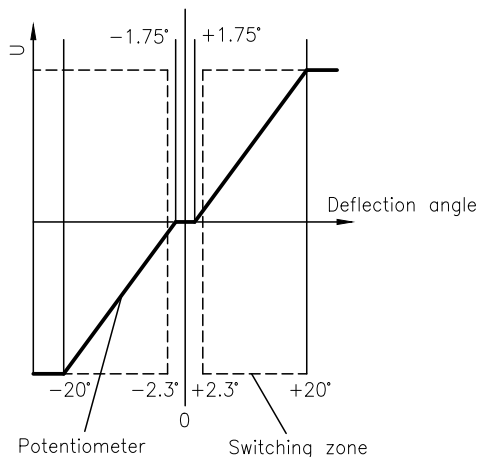


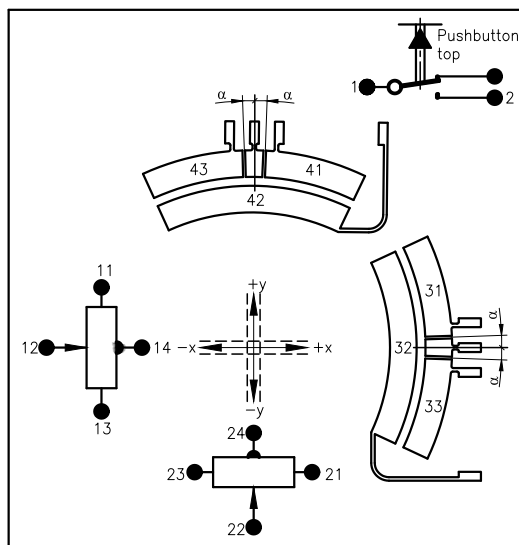
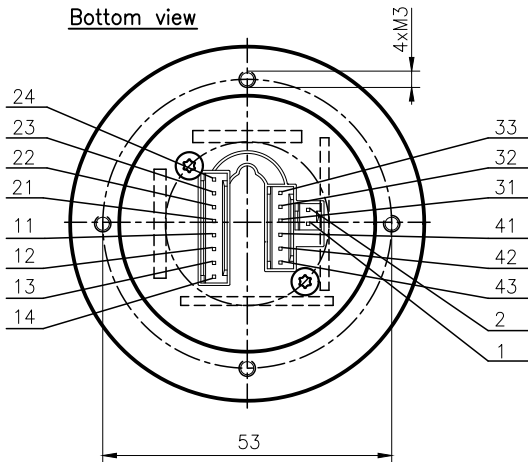
Gate
(Top view)



Output diagram



Bottom view



Description

Joystick type SK 60-0223	
Number of axes	2-axes, x- and y-axis
Operation by	Handle with pushbutton
Connector: DUBOX Walled Header	8-poles: 76384-308 6-poles: 76384-306 2-poles: 76384-302
Mating connector: Dubox Housing	8-poles: 65240-008 6-poles: 65240-006
Anti-rotation locking	2-poles: 65240-302
Cross guidance	soft
Center tab	±1.75°
Retaining spring	strong Z-Nr. 50-116
Switch function	1-0-1 per axis
Switchpoint α	±2.3°

Electrical characteristics

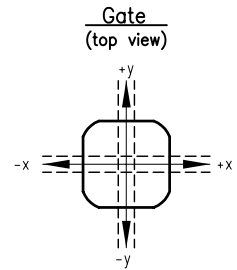
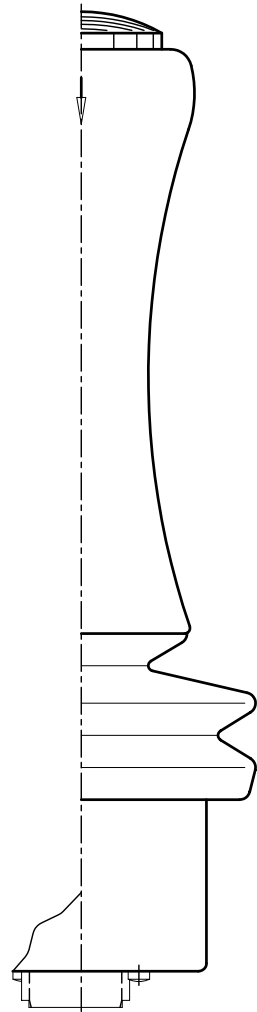
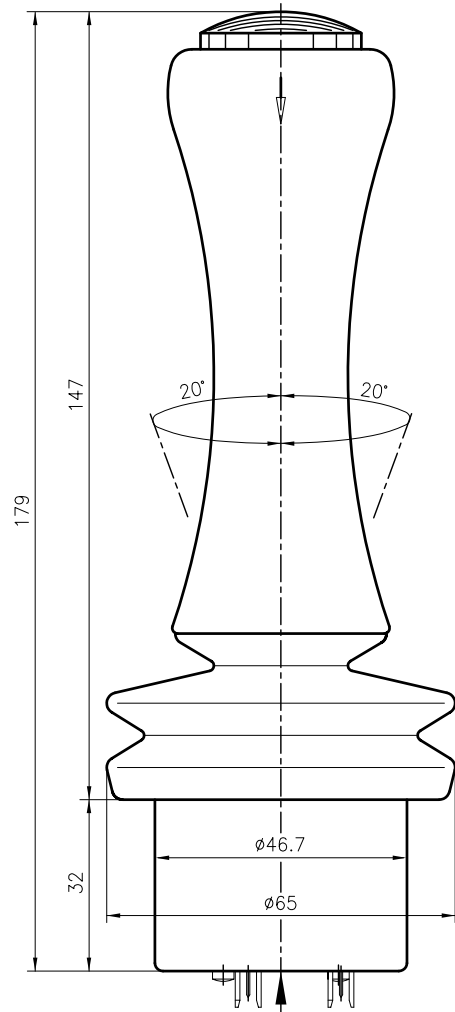
Resistance value	5 kOhm ± 20%
Power dissipation	0.2 Watt at 40°C per axis
Contact rating	Zero potential difference between segments 5 V DC, 5mA
Type of switch	MORS-APEM 13435AD2K
Contact rating	15V DC 0.5A max. / 5V DC 10mA
Operating voltage	30V DC max.

Axes	Potentiometer side		Connector side		
	Direction	Colour/Number	Center tab	Joystick in mid-position	
x-axis	↑ +x	21 green	24 grey	41 orange	open
	Wiper	22 blue		42 red	open
	↓ -x	23 violet		43 brown	
y-axis	↑ +y	11 yellow	14 brown	31 yellow	open
	Wiper	12 orange		32 green	open
	↓ -y	13 red		33 blue	

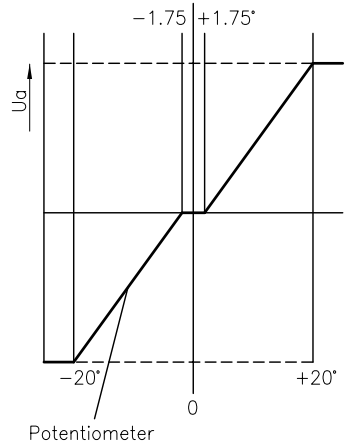
Pushbutton in handle

Switch contact	1	black
open	2	white
closed		

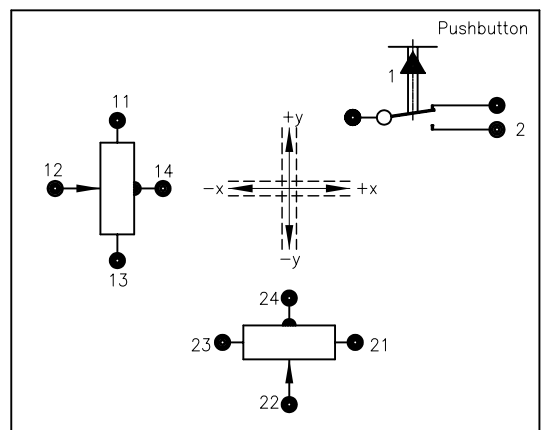
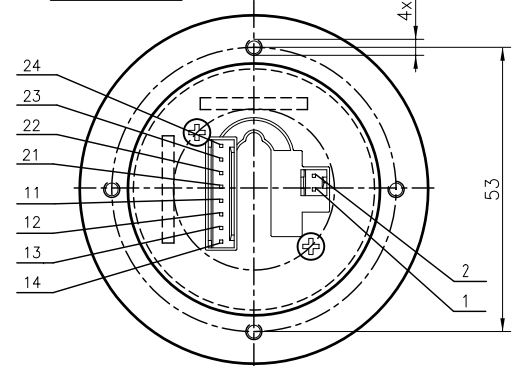
		Oberfläche	Maßstab 1:1	Position	Menge
		Datum	Name		
		Bearb. 02.11.01	DM		
		Gepr. 08.03.16	Kiener M.		
		Norm			
		GENGE & THOMA AG		Blatt -	
		OH-2543 Lengnau/Biel		60-0223b	
b	AEN-15-017	04.08.15	MK	Blatt -	
a	neues Layout	26.03.04	TZ	Bl	
Zust.	Anderungen	Datum	Name	Dateiname	E:\Dwg\SK60\60-0223b.dwg



Output diagram



Bottom view



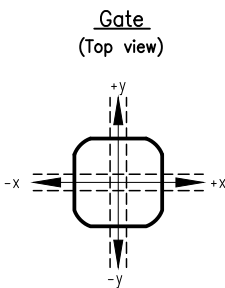
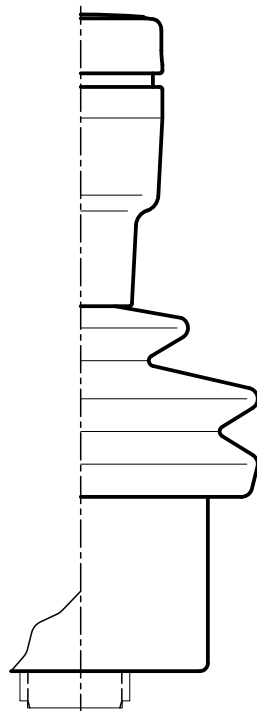
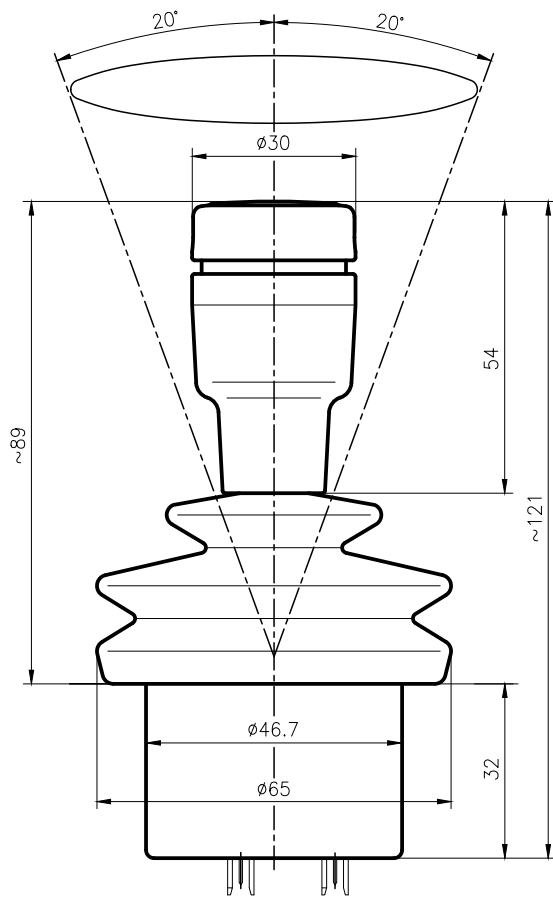
Description	
Joystick type SK 60-0275	
Number of axes	2-axes, x-axis, y-axis
Operation by	Handle with pushbutton
Connector: DUBOX Walled Header	8-poles: 76384-308 2-poles: 76384-302
Mating connector: Dubox Housing Anti-rotation locking	8-poles: 65240-008 2-poles: 65240-002
Cross guidance	soft
Center tab	±1.75°
Switch function	none
Retaining spring	very strong Z-Nr. 60-112.02

Electrical characteristics	
Resistance value	5 kOhm ± 20%
Power dissipation	0.2 Watt at 40° per axis
Contact rating	Zero potential difference between segments 5 V DC, 5 mA
Type of pushbutton	Mushroom button 404119 T&H
Pushbutton capacity	DC 30V 250mA

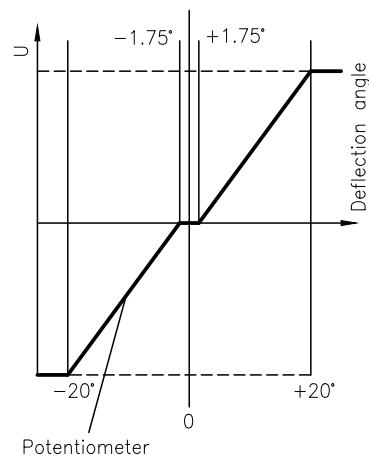
Axes	Potentiometer	Connector side
Direction	Colour/ number	Center tab
x-axis	21 green	Joystick in mid-position
Wiper	22 blue	
-x	23 violet	
y-axis	11 yellow	Joystick in mid-position
Wiper	12 orange	
-y	13 red	

Pushbutton		
Switch	Contact	1
	open	2
	closed	

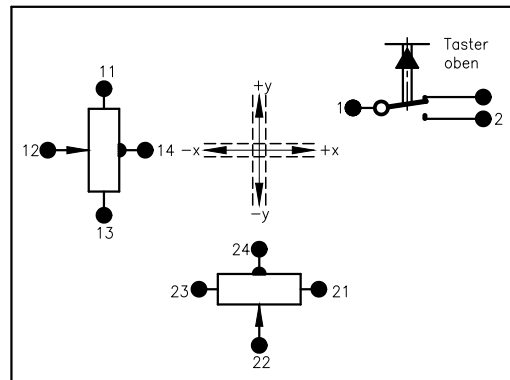
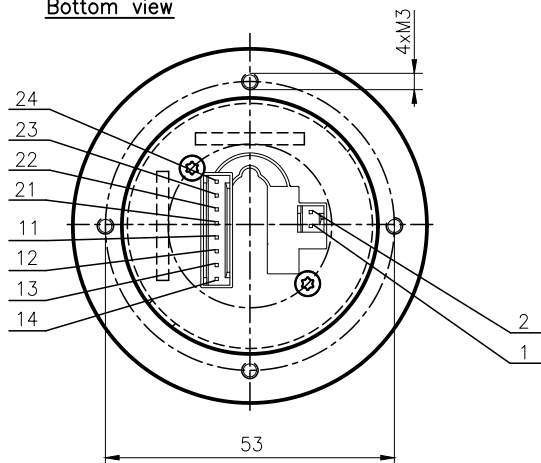
		Oberfläche	Maßstab 1:1	Position	Menge
		Datum	Name	Joystick	
		Bearb. 04.05.99	DM		
		Gepr.			
		Norm			
		GENGE & THOMA AG <small>CH-2543 Lengnau/Blot</small>			Blatt
		60-0275Ea			Bl
a	neues Layout	21.04.04	TZ		
Zust.	Änderungen	Datum	Name	Dateiname: E:\Dwg_SK60\60-0275E.dwg	



Output diagram



Bottom view



Description

Joystick type SK 60-0420	
Number of axes	2-axes, x- and y-axis
Operation by	Handle with pushbutton
Connector: DUBOX Walled Header	8-poles: 76384-308 2-poles: 76384-302
Mating connector: Dubox Housing	8-poles: 65240-008 2-poles: 65240-002
Cross guidance	soft
Center tab	±1.75°
Retaining spring	strong Z-Nr. 50-116
Switch function	no
Switchpoint α	-

Electrical characteristics

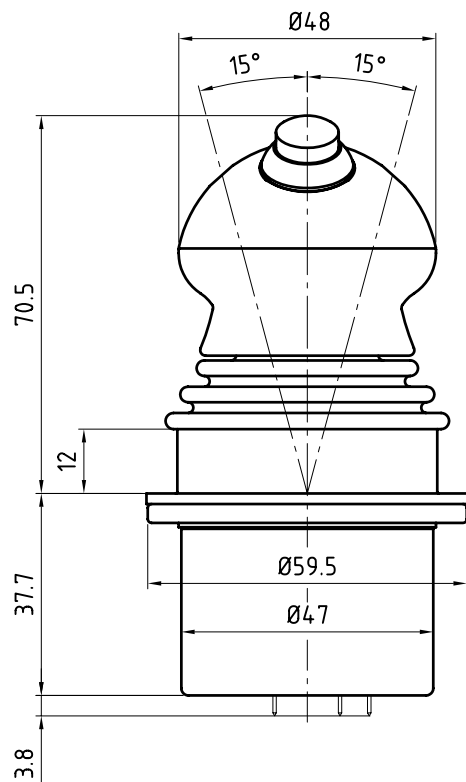
Resistance value	5 kOhm ± 20%
Power dissipation	0.2 Watt at 40°C per axis
Type of switch	MORS-APEM 13435AD2K
Pushbutton voltage	min. 5V DC 0.5uA / max. 15V DC 0.5A
Operating voltage	30V DC max.

Axes	Potentiometer side		Connector side	
	Direction	Colour/Number	Center tab	Joystick in mid-position
x-Axis	↑ +x	21 green		
	Wiper	22 blue	24 grey	
	↓ -x	23 violet		
y-Axis	↑ +y	11 yellow		
	Wiper	12 orange	14 brown	
	↓ -y	13 red		

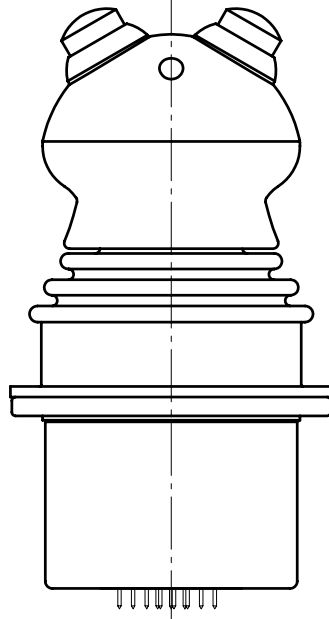
Pushbutton in handle

Switch contact	1	black
open	2	white
closed		

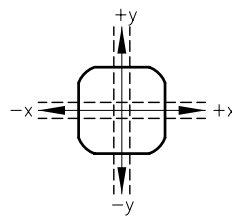
		Oberfläche	Maßstab 1:1	Position	Menge
		Datum	Joystick		
Bearb.	04.02.02	Name	DM		
Gepr.	09.03.16	Name	Kiener M.		
Norm					
		GENGE & THOMA AG		Blatt -	
		OH-2543 Lengnau/Biel		60-0420 a	
a	neues Layout	12.05.04	TZ	Bl	
Zust.	Anderungen	Datum	Name	Dateiname	E:\DWG\SK60\60-0420.dwg



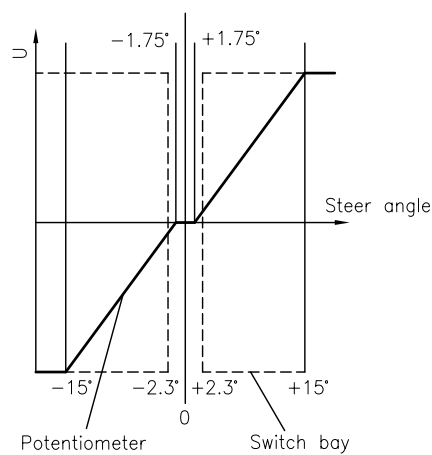
Grey pushbutton Yellow pushbutton



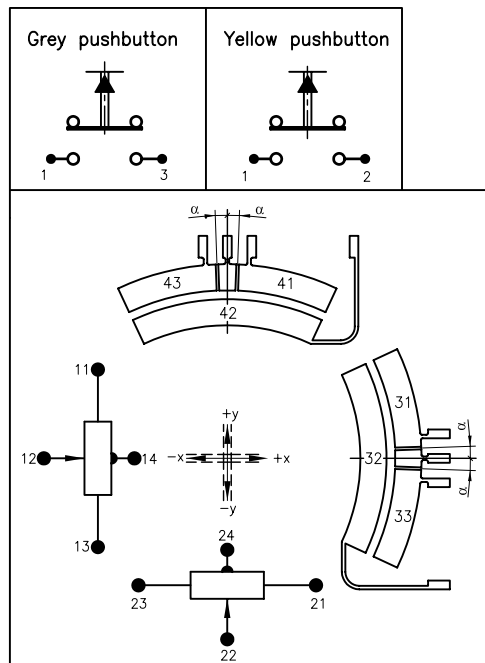
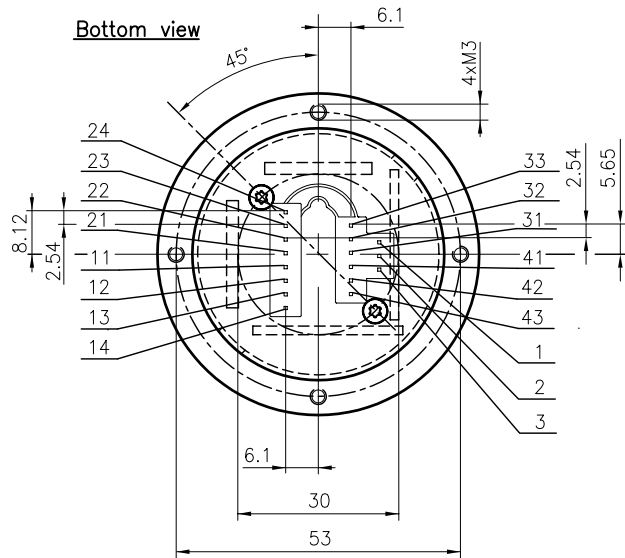
Gate
(Top view)



Output diagramm



Bottom view



Description

Joystick Type SK 60-0538	
Number of axis	2-axis, x-axis, y-axis
Operation by	Handle with 2 Pushbuttons
Plug	BERGSTIK single-row 77311-822-36
Crossguide	light
Center tab	±1.75°
Retaining spring	strong
Switch function	2 shift segments per axis
Switchpoint α	±2.3°

Electrical characteristics

Resistance value	5 kOhm ± 20%
Power disipation	0.2 Watt at 40°C pro axis
Operating voltage	max. 30V DC
Type of switches	Otto Controls, P9 Pushbutton (IP68)
Switches voltage	30 V DC, 5A (Resistive) / 3A (Inductive)
Contact rating	Zero potential difference between segments 5 V DC, 5 mA

Axis	Direction	Potentiometer side		Connector side	
		Colour/Number	Center tab	Joystick in mid-position	
x-axis	↑ +x	21		41	open
	Wiper	22	24	42	
	↓ -x	23		43	open
y-axis	↑ +y	11		31	open
	Wiper	12	14	32	
	↓ -y	13		33	open

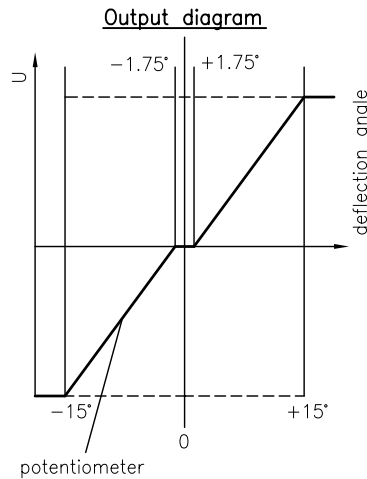
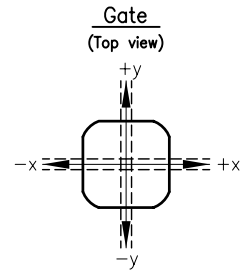
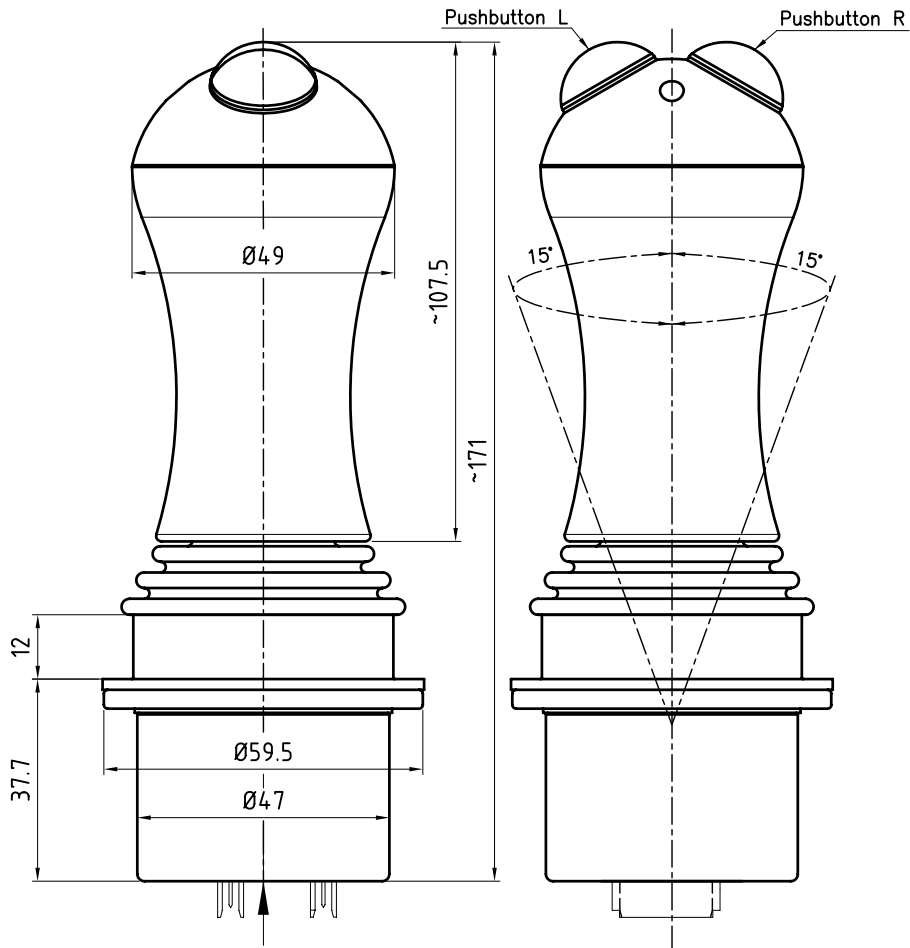
Yellow pushbutton in Toggle

Switch contact	2	orange
open	1	red

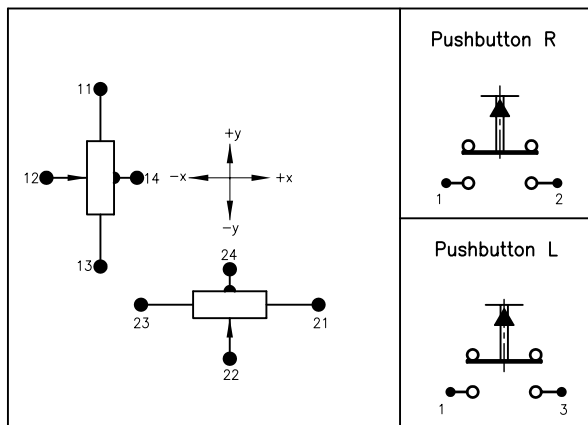
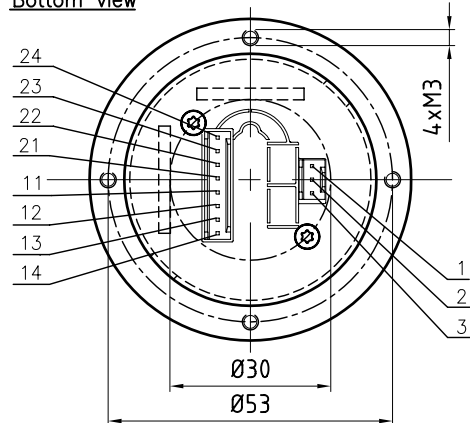
Grey pushbutton in Toggle

contact	3	brown
Switch open	1	red

Oberfläche		Maßstab 1:1		Position Menge	
Datum		Name		Joystick	
Bearb. 16.03.09		Kiener M.			
Gepr.					
Norm				Blatt	
GENTE & THOMA AG		01-2543 Lengnau/Blot		60-0538E a	
a	Mit Doppelschleifer	01.12.09	MK	Dateiname: E:\Dwg\Uwg_SK60_160-0538E.dwg	
Zust.	Änderungen	Datum	Name		



Bottom view



Description

Joystick Type SK 60-0577	
Number of axes	2-axes, x-axis, y-axis
Operation by	Handle with 2 pushbuttons (anti-twist protection)
Plug: DUBOX Walled Header	8-poles: 76384-308 3-poles: 76384-303
Counter plug: Dubox Housing	Rotated not insertable 8-poles: 65240-008 3-poles: 65240-003
Cross guidance	soft
Center tab	±1.75°
Switch point α	-
Retaining spring	strong Z-Nr. 484-243

Electrical characteristics

Resistance value	5 kOhm ± 20%
Power dissipation	0.2 Watt at 40°C per axis
Operating voltage	max. 30V DC
Type of switch	Otto Controls, P9 Pushbutton (IP68)
Switch voltage	30 V DC, 5A (Resistive) / 3A (Inductive)

Axes		Potentiometer	Connector side	
Direction	Colour/Number	Center tab	Joystick in mid-position	
x-axis	↑ +x	21	24	
	Wiper	22		
	↓ -x	23		
y-axis	↑ +y	11	14	
	Wiper	12		
	↓ -y	13		

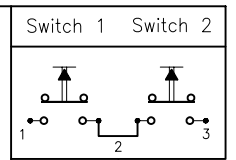
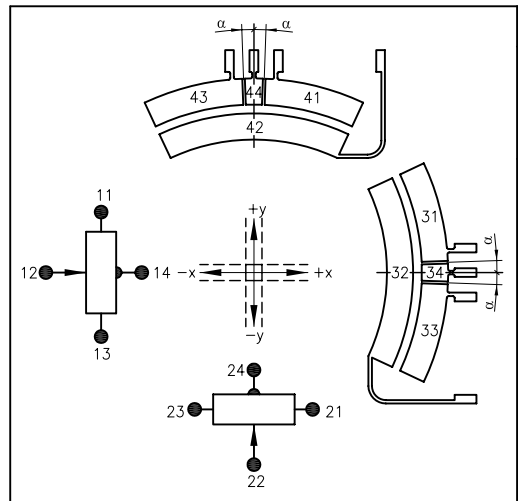
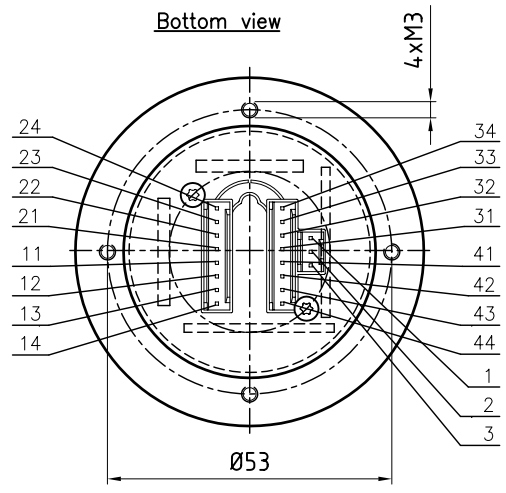
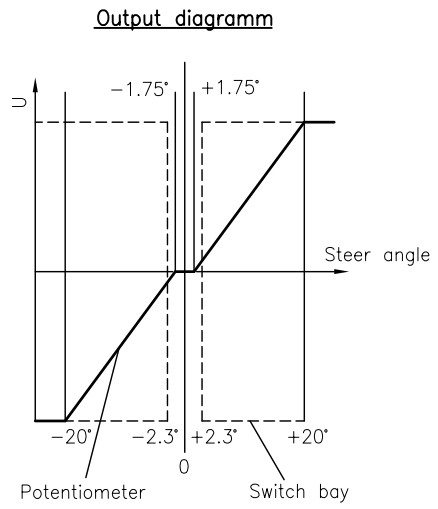
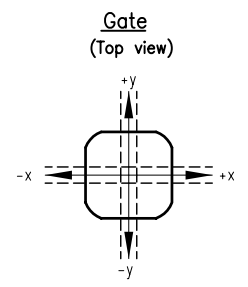
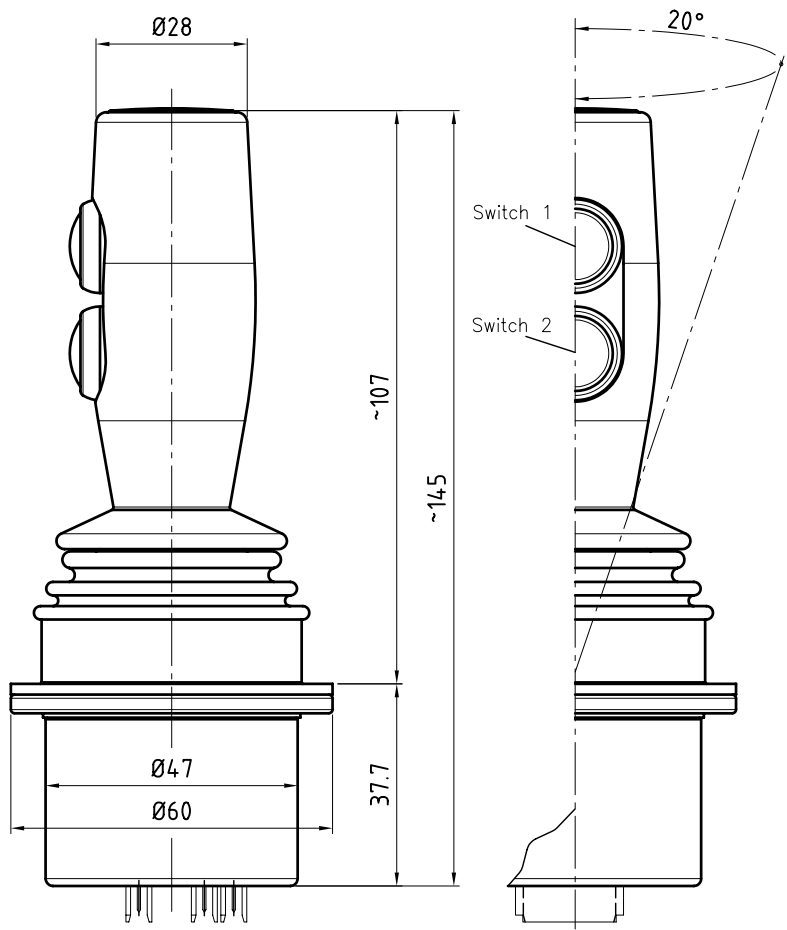
Pushbutton R in handle

Switch contact	2	orange
open	1	red

Pushbutton L in handle

contact	3	brown
Switch open	1	red

		Oberfläche	Maßstab 1:1	Position	Menge
		Datum	Name		Joystick
		Bearb. 25.08.08	Kiener M.		
		Gepr.			
		Norm			
		GENGE & THOMA AG <small>OT-2543 Lengnau/Biel</small>		Blatt	
		Dateiname: E:\DWQ\DWQ_SK60_160-0577E.dwg		Bl	
Zust.	Änderungen	Datum	Name		



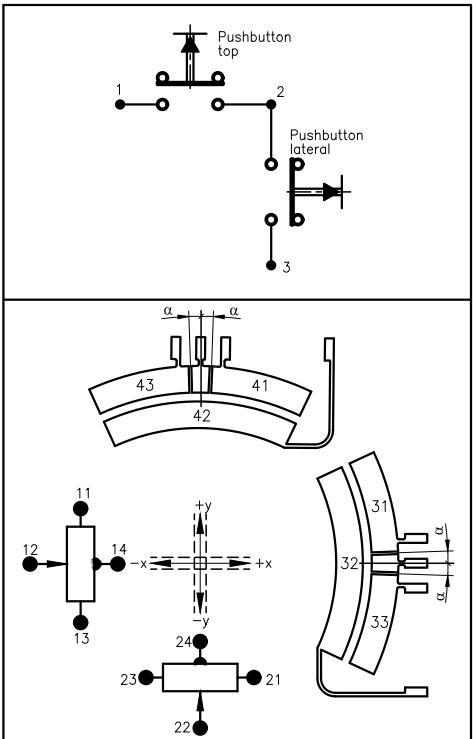
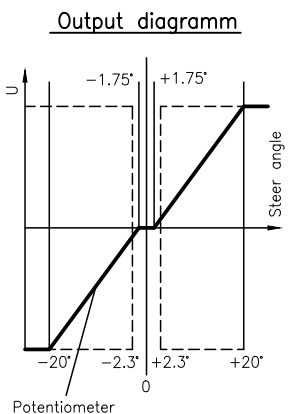
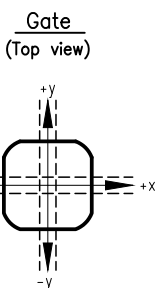
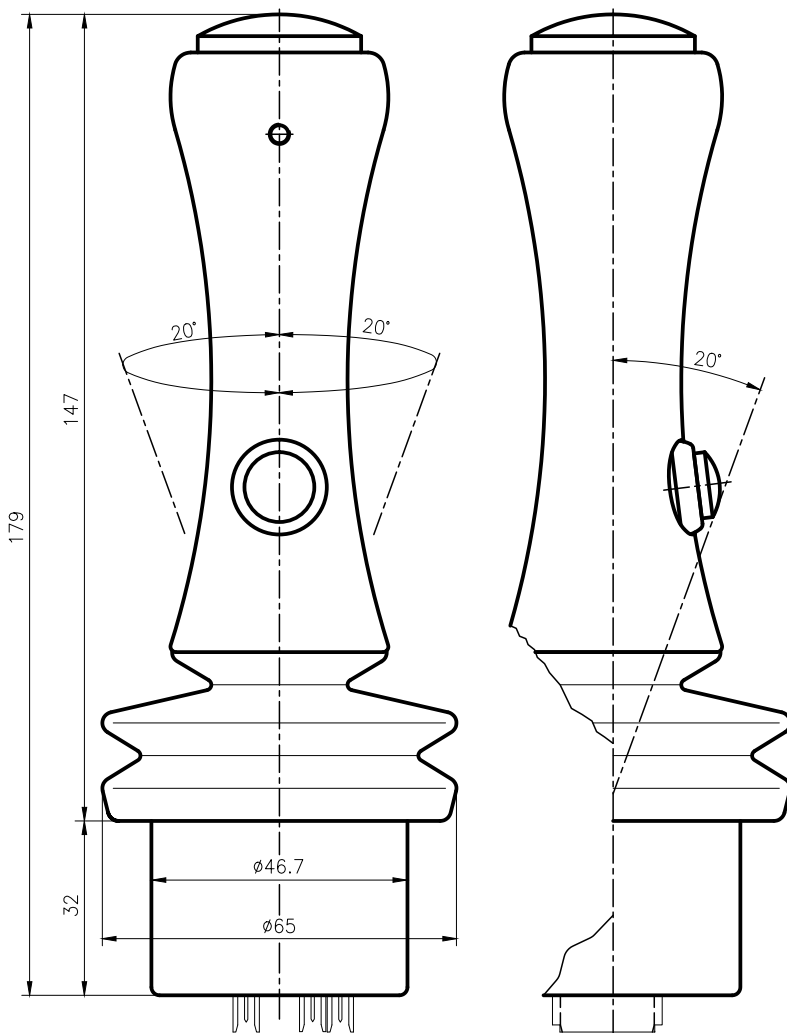
Description	
Joystick Type SK 60-0681	
Number of axis	2-axis, x-axis, y-axis
Operation by	Handle with 2-switch
Plug: DUBOX Walled Header	2x 8-poles: 76384-308 1x 3-poles: 76384-303
Counter plug: Dubox Housing Rotated not insertable	2x 8-poles: 65240-008 1x 3-poles: 65240-003
Cross guide	light
Center tab	±1.75°
Retaining spring	strong Z-Nr. 50-116
Switch function	2 shift segments per axis
Switchpoint α	±2.3°

Electrical characteristics	
Resistance value	5 kOhm ± 20%
Power dissipation	0.2 Watt at 40°C per axis
Contact rating	Zero potential difference between segments 5 V DC, 5 mA
Operating voltage	max. 30V DC
Type of switches	ITW-Switch
Switches voltage	30V DC / 400mA

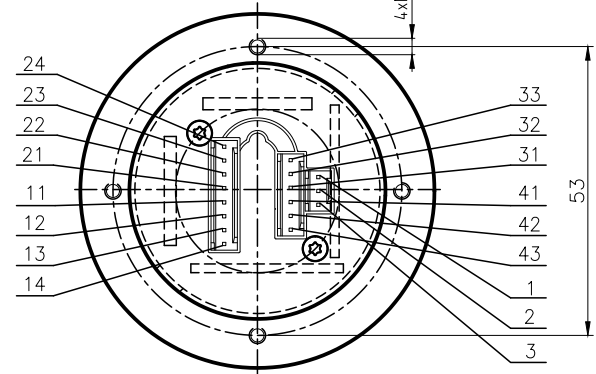
Axis	Potentiometer	Connector side			
	Direction	Center tab			
	Colour/Number	Joystick in mid-position			
x-axis	↑ +x	21 green	24 grey	41 yellow	open
	Wiper	22 blue	24 grey	42 orange	44 brown
	↓ -x	23 violet	24 grey	43 red	open
y-axis	↑ +y	11 yellow	14 brown	31 green	open
	Wiper	12 orange	14 brown	32 blue	34 grey
	↓ -y	13 red	14 brown	33 violet	open

Switch 1 im Handle	
Switch Contact	1 brown
open	2 red
Switch 2 im Handle	
Switch Contact	3 orange
open	2 red

Oberfläche		Maßstab 1:1	Position	Menge
Datum	Name	Joystick		
Bearb. 03.03.10	Kiener M.			
Gepr.				
Norm				
GEGE & THOMA AG		60-0681E		Blatt
AG 01-2543 Lengnau/Bl				Bl
Zust.	Änderungen	Datum	Name	Dateiname

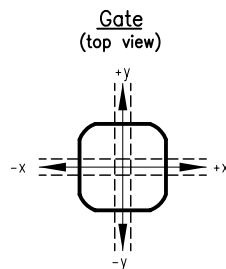
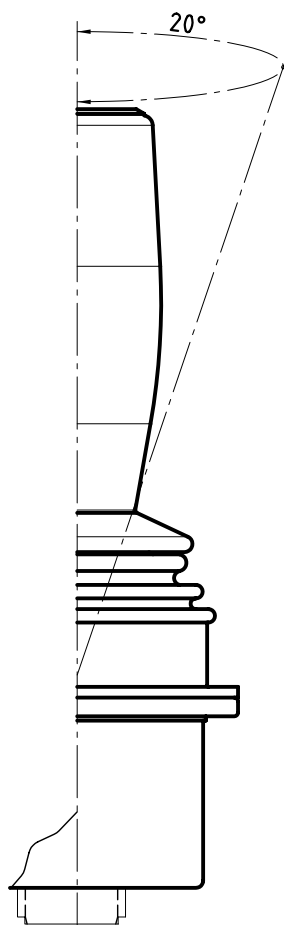
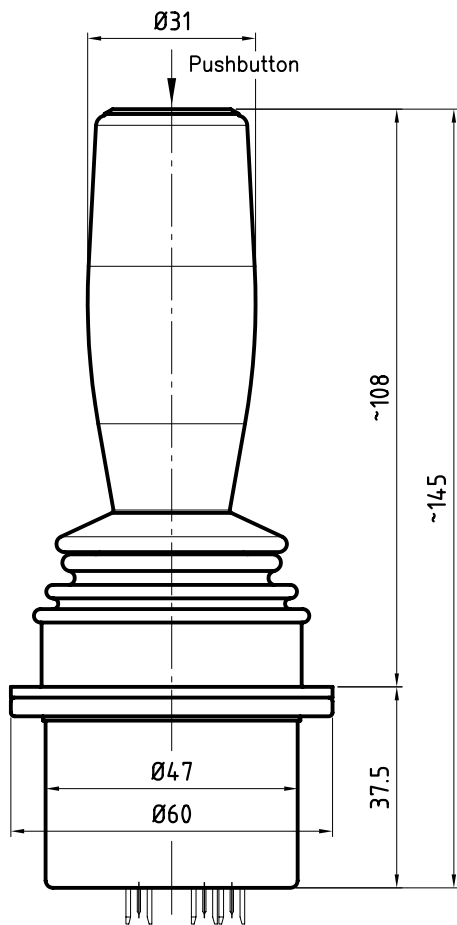


Bottom view

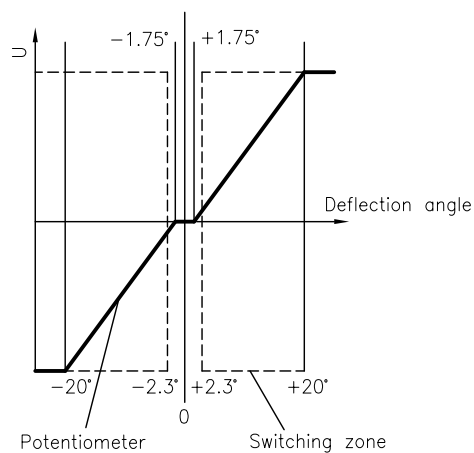


Description				
Joystick Type SK 60-0713				
Number of axis	2-axis, x-axis, y-axis			
Operation by	Handle with 2 Pushbuttons			
Plug: DUBOX Walled Header	8-poles: 76384-308 6-poles: 76384-306 3-poles: 76384-303			
Counter plug: Dubox Housing	8-poles: 65240-008 6-poles: 65240-006 3-poles: 65240-003			
Crossguide	soft			
Center tab	$\pm 1.75^\circ$			
Retaining spring	very hard Z-Nr. 60-112.02			
Switch function	2 shift segments per axis			
Switchpoint α	$\pm 2.3^\circ$			
Electrical characteristics				
Resistance Value	5 kOhm $\pm 20\%$			
Power disipation	0.2 Watt at 40°C per axis			
Contact rating	Zero potential difference between segments 5 V DC, 5 mA			
Switch top	Dome pushbutton 404119 T&H			
Switch voltage top	30V DC 250mA			
Switch lateral	ITW-Switch Nr. 59-900089			
Switch voltage lateral	30V DC 400mA			
Operating voltage	max. 30V DC			
Axis	Potentiometer side	Connector side		
	Direction	Colour/number	Center tab	Joystick in mid-position
x-axis	$\uparrow +x$	21 green	41 orange	open
	Wiper	22 blue	24 grey	42 red
	$\downarrow -x$	23 violet		43 brown
y-axis	$\uparrow +y$	11 yellow	31 yellow	open
	Wiper	12 orange	14 brown	32 green
	$\downarrow -y$	13 red		33 blue
Pushbuttons in Toggle				
Switch top	contact	1	grey	
	open	2	white	
Switch lateral	contact	3	black	
	open	2		

		Oberfläche	Maßstab 1:1	Position	Menge
		Datum	Name	Joystick	
		Bearb. 03.02.11	Kiener M.		
		Gepr.			
		Norm			
		GENGE & THOMA AG <small>CH-2543 Lengnau/Biel</small>		60-0713	
				Blatt	
				Bl	
Zust.	Änderungen	Datum	Name	Dateiname	E:\DWG_SK60\60-0713.dwg

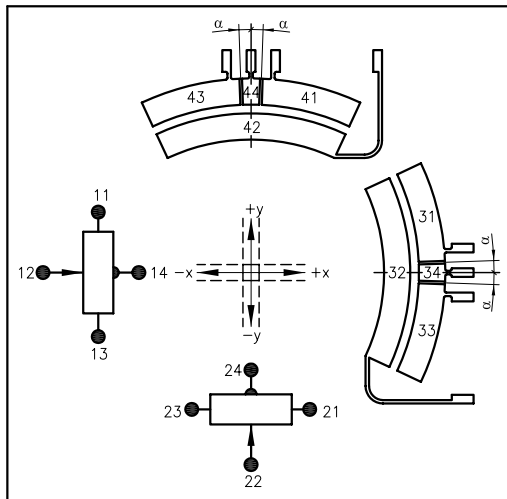
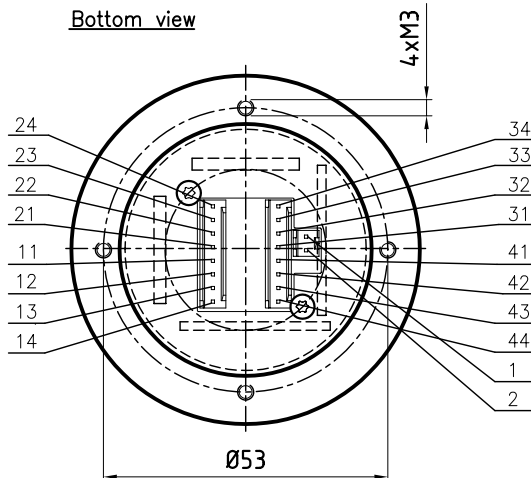


Output diagram

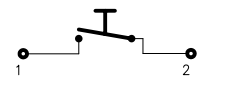


Description					
Joystick type SK 60-0921					
Number of axes	2-axes, x-axis, y-axis				
Operation by	Sleek top, handle with pushbutton				
<u>Connector:</u> DUBOX Walled Header	2x 8-poles: 76384-308 1x 2-poles: 76384-302				
<u>Mating connector:</u> Dubox Housing	2x 8-poles: 65240-008				
<u>Anti-rotation locking</u>	1x 2-poles: 65240-002				
Cross guidance	soft				
Center tab	±1.75°				
Retaining spring	normal Z-Nr. 60-112				
Switch function	2 shift segments per axis				
Switch point α	±2.3°				
Electrical characteristics					
Resistance value	5 kOhm ± 20%				
Power dissipation	0.2 Watt at 40°C per axis				
Contact rating	Zero potential difference between segments 5 V DC, 5 mA				
Operating voltage	max. 30V DC				
Pushbutton	EAO 24 V DC, 100mA				
Axes	Potentiometer	Connector side			
Direction	Colour/number	Center tab	Joystick in mid-position		
x-axis	↑ +x	21 green	24 grey	41 yellow	open
	Wiper	22 blue		42 orange	44 brown
	↓ -x	23 violet		43 red	open
y-axis	↑ +y	11 yellow	14 brown	31 green	open
	Wiper	12 orange		32 blue	34 grey
	↓ -y	13 red		33 violet	open
Pushbutton in handle					
Switch	Contact	2			
	open	1			

Bottom view



Pushbutton



		Oberfläche	Maßstab 1:1	Position	Menge
	Datum	Name	Joystick		
Bearb.	10.01.13	Kiener M.			
Gepr.					
Norm					
		GENGE & THOMA AG	60-0921		Blatt
		01-2543 Lengnau/Bl			Bl
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