



Joysticks

Poignées de pilotage

Steuerknüppel

Our company

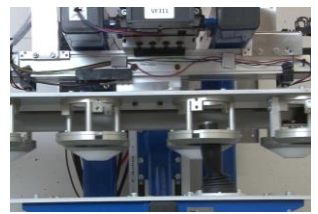
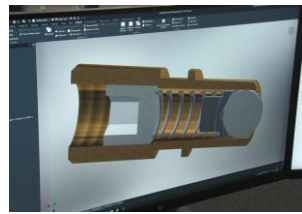
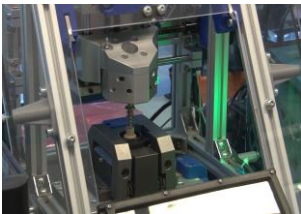
Founded in 1958 the company was specialized in the production of rotary potentiometers. The company developed successfully in the market of the sensors until the 1980s when Genge&Thoma AG started to invent the first joysticks to expand the product portfolio.

With the time the still family-owned company moved to Lengnau and later to our current location in Brugg, in the heartland of the most famous Swiss watch production sites where mechanical innovation and electrical engineering are practiced with passion. Our main focus moved more and more towards the joystick market, and we expanded our business around the world.

What we offer

Our goal is, to have the perfect joystick solution for your needs. That for we have expanded our portfolio continuously over the past decades and can offer you the whole range from small thumb joysticks to rigid ones for heavy applications.

We are proud to offer everything in house, from the first contact with our sales team through development to modern in-house assembly and quality control. Thanks to this, we are able to offer you an efficient and fast development process for new joysticks, fully adapted to your needs. With a broad team of electrical, IT and mechanical engineers we have all the knowledge inhouse, which we need to develop a new product.



Our joystick portfolio

An overview about our most common joystick families

Page 04	SK60	The most versatile. With up to three axis, pushbuttons, different handles and interfaces
Page 06	SK315	The small one
Page 08	SK197	For remote controls. With up to three axis and optional steps
Page 10	SK216	The control lever. Typical for the speed control of trains and construction machines
Page 12	SK212	The big one. Customizable handle with all kind of buttons with a small mounting depth
Page 14	SK220	The thumb joystick. Either separately or mounted on a SK212.
Page 16	SK225	The round one. 360° rotatable with or without detents, two axes and LED illumination

SK60 The all-rounder



One fits most

The SK 60 base offers several options with different haptic characteristics to choose from. It's available in various configurations and has up to 3 axes depending on the handle.

In the core of the joystick is a well proven hall effect sensor. Our modular design solutions can deliver the most common communication signals and interfaces like analogue CANopen or J1939.

The multifunctional and flexibly design allows for the ability to fit well into a wide range of applications.

Please contact us, it will be our pleasure to suggest an individual joystick solution for your specific needs. Your solution is our standard.

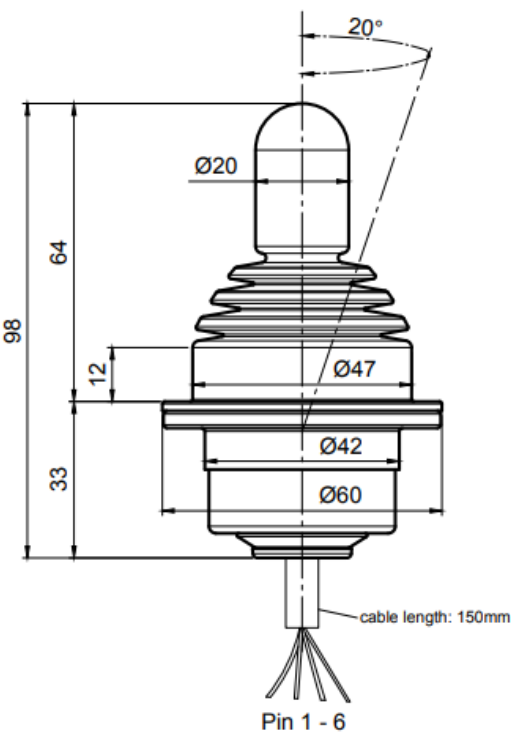
Technical specification

Axes	2 axes (option 1 axis)
Deflection Angle	+/- 20°
Resetting	Self-resetting
Push button	Optional
Options	Connectors, push button, handles, rigide cross guidance
Height above panel	64mm (2.5in)
Mounting depth	34mm (1.3in), below panel + cable
Panel cut-out	Ø 43 or 49mm (1.69in or 1.93in)
Bolt circle	53mm (2.08in) with 4 x M3 screws
Technology	Hall-effect sensors
Operating voltage	5V DC(standard)
Output signal	Analogue / CANopen / J1939
Connection	Cable
Durability	Up to 3 million full cycles
Operation temperature	-30° - +80°C (-22°F - +176°F)
Storage temperature	-40° - +85°C (-40°F - +185°F)
IP protection class	IP67 (mounted above panel with mounting ring)
Fire protection	UL94-V0
Application examples	Vehicles, machinery, off-shore, mobile equipment

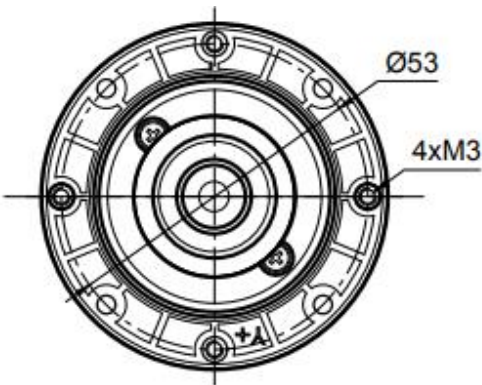


SK60 technical drawings

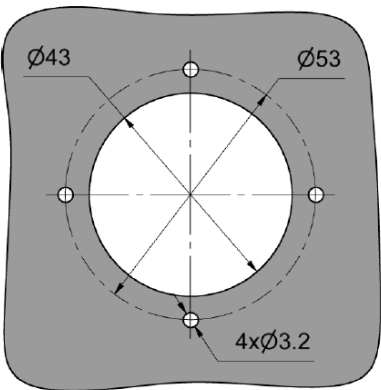
Side view



Bottom view



Panel cut-out



Mounting illustration with mounting ring



SK315 The small one



Compact with many possibilities

Compact and durable multi-axis joysticks, perfectly made for industrial machines, electric vehicles or your individual application.

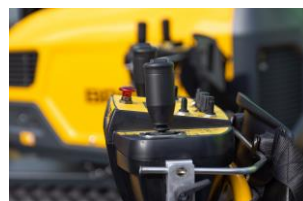
It comes with a low height to fit in many controls or integrated panels, but with a large handy knob to operate also with gloves.

Remarkable and unique – all axes are available with single or redundant output signals. The joysticks can be equipped with a push button if needed.

Please contact us, it will be our pleasure to suggest an individual joystick solution for your specific needs. Your solution is our standard.

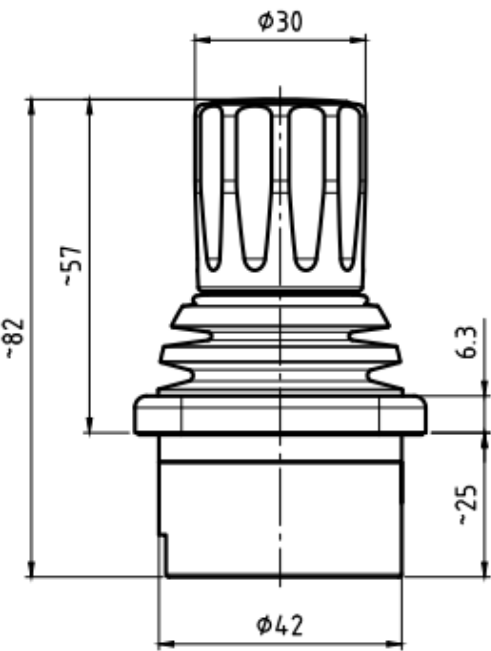
Technical specification

Axes	Up to 3 axes
Operating angle	X/Y axis: +/- 20° / Z axis: +/- 30°
Resetting	Self-resetting
Guidance	Soft guidance
Push button	Optional
Options	Push button, handles
Height above panel	57mm (2.24in)
Mounting depth	25mm (0.98in), below panel + cable
Panel cut-out	Ø 42.5mm (1.67in)
Bolt circle	□ 35mm (1.37in) with 4 x M3 screws
Technology	Hall-effect sensors
Operating voltage	5V DC(standard)
Output signal	0.5V – 4.5V, linear, redundant
Connection	Connector
Durability	Up to 3 million full cycles
Operation temperature	-30° - +80°C (-22°F - +176°F)
Storage temperature	-40° - +85°C (-40°F - +185°F)
IP protection class	IP65 above panel
Application examples	Vehicles, machinery, mobile equipment
Gate	Square

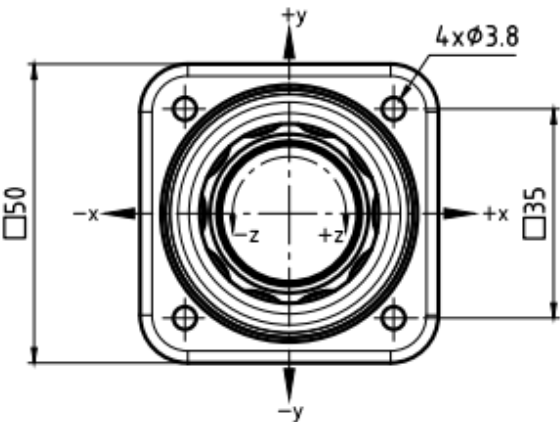


SK315 Technical drawings

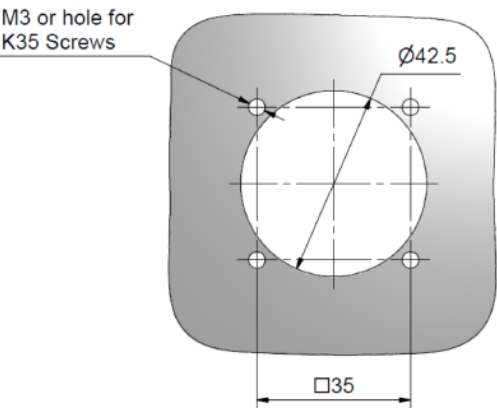
Side view



Bottom view



Panel cut-out



SK197 For remote controls



The unconventional joystick family

The SK 197 family of modular joysticks offers several options with different haptic characteristics to choose from. It's available in various configurations and has up to 3 axes depending on the handle.

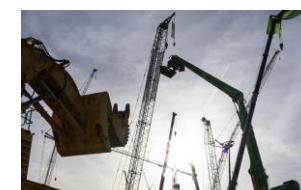
In the core of the joystick is a well proven potentiometer. Our modular design solutions can deliver the most common communication signals and interfaces like analogue CANopen or J1939.

The multifunctional and flexibly design allows for the ability to fit well into a wide range of applications, especially for remote controls.

Please contact us, it will be our pleasure to suggest an individual joystick solution for your specific needs. Your custom solution is our standard.

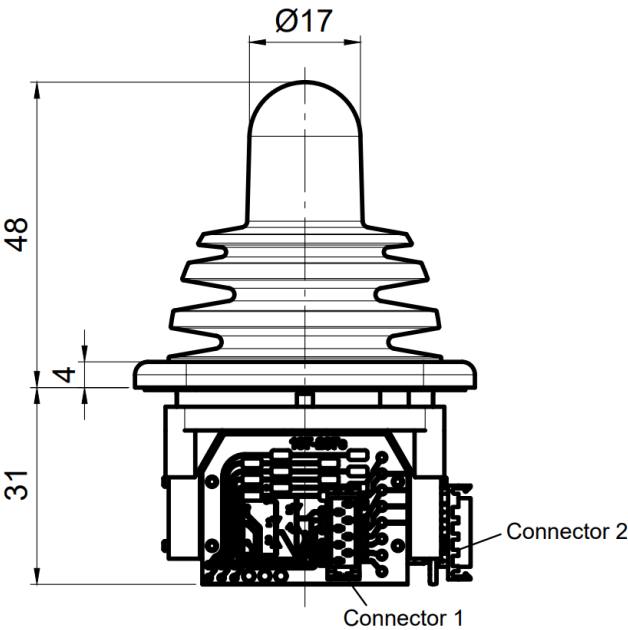
Technical specification

Axes	2 axes (option 1 or 3 axis)
Technology	Potentiometer
Resetting	Self-resetting
Steps	Up to 5 steps
Deflection Angle	+/- 26°
Cross guidance	Rigid/soft/none
Push button	Optional
Height above panel	48mm (1,89in)
Mounting depth	31mm (1.22in), below panel + cable
Panel cut-out	Ø 41 or 49mm (1.61in or 1.93in)
Bolt circle	53mm (2.09in) with 4 x M3 screws
Operating voltage	30V DC (standard)
Output signal	Analogue
Connection	MicroMatch
Durability	Up to 3 million full cycles
Operation temperature	-30° - +75°C (-22°F - +167°F)
Storage temperature	-40° - +85°C (-40°F - +185°F)
IP protection class	IP54 (mounted above panel with mounting ring)
Application examples	Especially designed for remote controls, vehicles, machinery, off-shore, mobile equipment

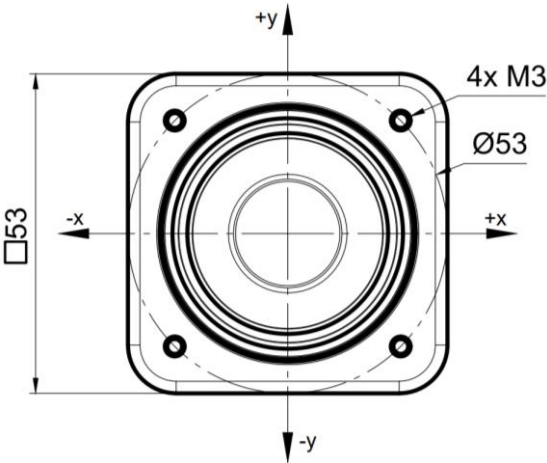


SK197 technical drawings

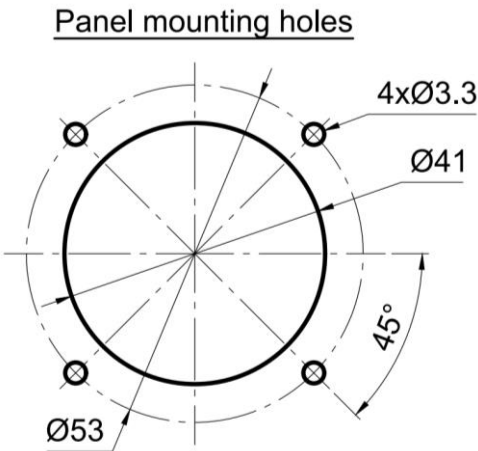
Side view



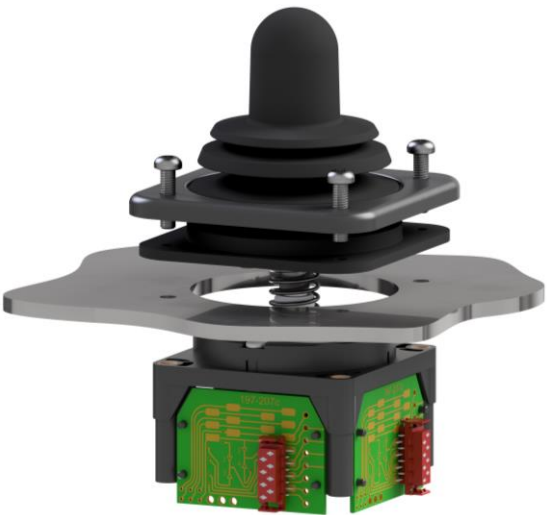
Top view



Panel cut-out



Mounting illustration with mounting ring



SK216 The control lever



The tough joystick

This joystick has been developed to perform in a rough environment but still gives out a smooth and stable output signal.

With two overlaying rubber boots, it is not only more than leakproof, it even allows for the upper boot to be exchanged while installed. It comes in different models and is configurable to your needs.

Please contact us, it will be our pleasure to suggest an individual joystick solution for your specific needs. Your custom solution is our standard.

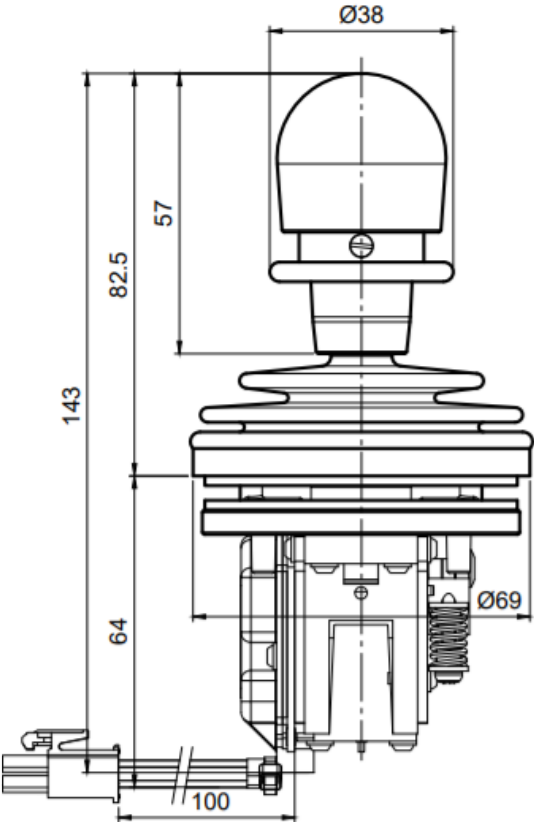
Technical specification

Axes	1 axis
Deflection Angle	+/- 26.5°
Resetting	Center-lock, friction brake
Push button	Optional
Options	Self-centering
Height above panel	82.5mm (~3.26in) (Depending on handle)
Mounting depth	64mm (~2.44in), below panel
Panel cut-out	Ø 51mm (~2.00in)
Bolt square	40mm (1.57in) with 4 x K30 self-tapping screws
Technology	CP or Hall
Operating voltage	Max 30V DC (CP version)
Output signal	Analogue, ask for options
Connection	Mate-N-Lok, ask for options
Durability	Up to 3 million full cycles
Operation temperature	-30° - +80°C (-22°F - +176°F)
Storage temperature	-40° - +85°C (-40°F - +185°F)
IP protection class	IP67 (above panel, 2 rubber boots)
Fire protection	UL94-V0
Application examples	Vehicles, machinery, off-shore

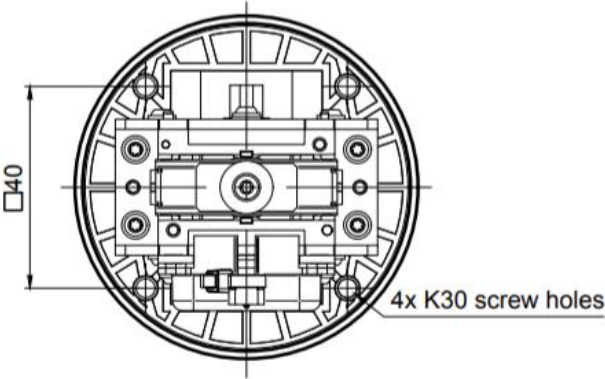


SK216 technical drawings

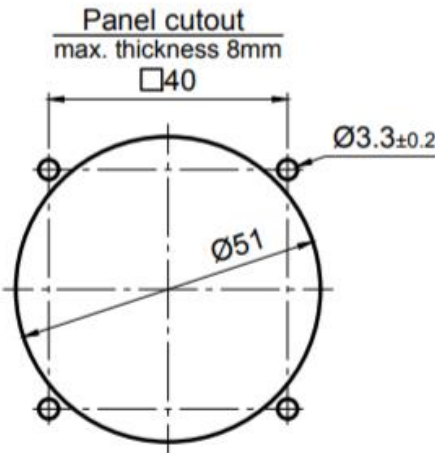
Side view



Fixation



Panel cut-out



SK212 The multifunctional



The multifunctional joystick

This joystick is designed to perform in harsh environments while maintaining a smooth and reliable control signal.

Its rugged design and the amazingly small installation depth makes it perfect for agricultural and construction equipment, the mobile hydraulics market and various other applications. Due to its ergonomically appealing layout, multiple functions, such as switches, mini-joysticks or thumbwheels, can easily be added.

Do not hesitate to contact us, we will be happy to propose an individual joystick solution for your specific needs.

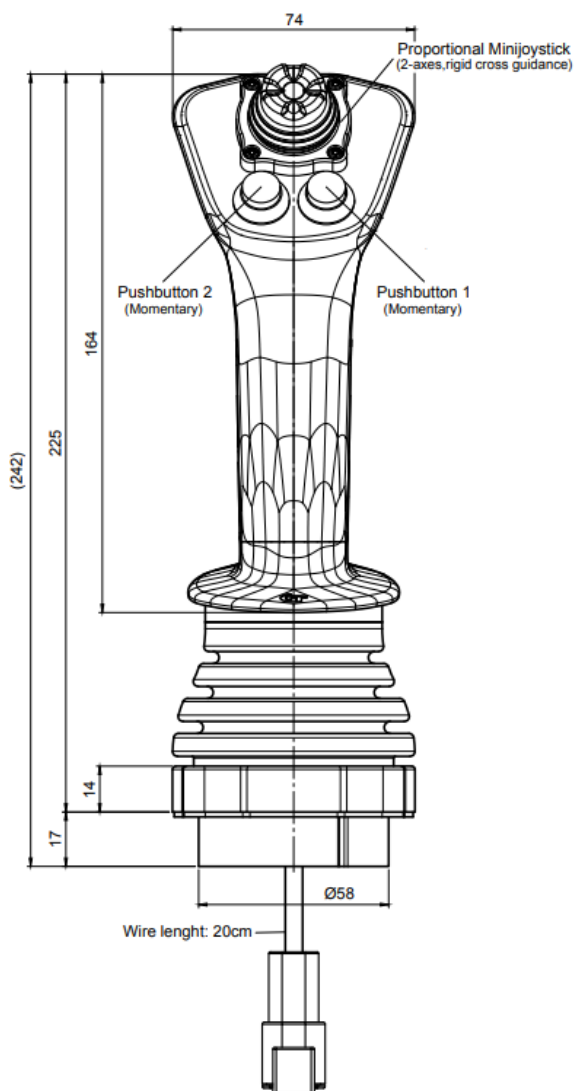
Technical specification

Axes	1 or 2 axes
Operating Angle	+/- 24°
Resetting	Self-centering
Guidance	Soft guidance
Options	Push buttons, thumbwheels, mini joysticks, rocker switches & many more
Height above panel	225mm (~8.86in)
Mounting depth	17mm (~0.67in), top mounted
Panel cut-out	Ø 58.5 0/+1.5mm mm (~2.3in)
Bolt square	54mm (2.13in) with 4 x M5 screws
Technology	Hall-effect sensors
Operating voltage	8 - 36V DC
Output signal	CANopen, J1939, proportional 0.5 - 4.5V
Connection	Deutsch DTM04-4P
Durability	Up to 3 million full cycles
Operation temperature	-30° - +70°C (-22°F - +158°F)
Storage temperature	-40° - +85°C (-40°F - +185°F)
IP protection class	IP 65 typical, depending on configuration
Fire protection	On demand
Application examples	Vehicles, construction, off-shore, mobile hydraulic

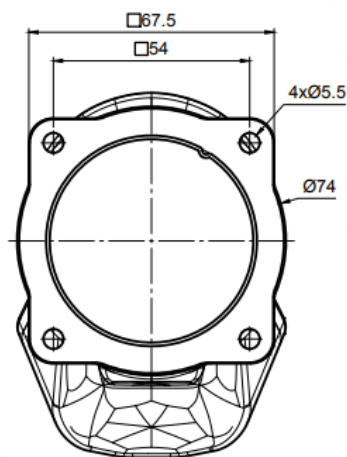


SK212 technical drawings

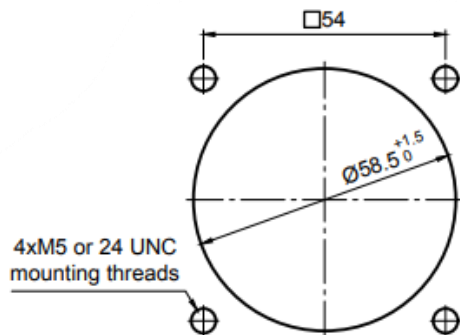
Front view



Mounting



Panel cut-out



SK220 The Mini-Joystick



Small – ergonomic – robust

The robust Mini-Joystick SK220 is designed with an ergonomic thumb-operated knob. Its technology is working on robust hall-effect sensors for contactless operations in X and Y directions. Redundancy is standard. A durable spring returns the joystick safely to the center position.

The Mini-Joysticks outstanding characteristics are high reliability, an extraordinary electromagnetic compatibility and a long life of over 5 million full cycles.

Typical applications for the Mini-Joystick are controllers, medical devices, remote controls and multi-function handles.

Please contact us, it will be our pleasure to suggest an individual joystick solution for your specific needs. Your solution is our standard.

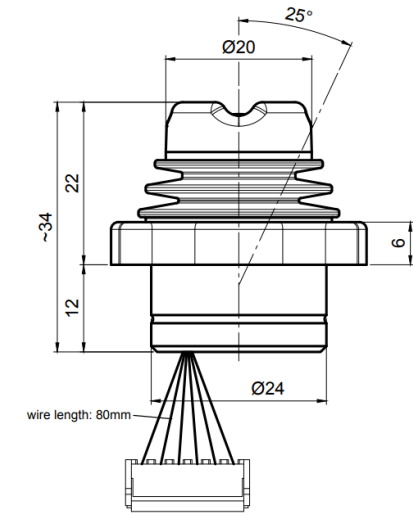
Technical specification

Axis	1 or 2 axis version
Spring return	Ergonomic and reliable central spring return
Deflection angle	25° per semiaxis
Haptics	Soft or rigid cross guidance
Installation	Top mounted
Height above panel	22mm (0.86in)
Mounting depth	12mm (0.47in)
Panel cut-out	Ø 25mm (0.98in)
Bolt circle	35mm (1.37in) with 4 x M2.5 or K25 screws
Technology	Redundant hall effect sensors
Operating voltage	5V DC
Output signal	0.5 – 4.5V DC (standard)
Connection	Cable 80mm (3.14in) with connector JST EHR 6 pins
Durability	Up to 5 Mio. full cycles
Operation temperature	-30° - +80°C
Storage temperature	-40° - +85°C
IP protection class	IP67 if mounted correctly
Magnet compatibility	6000A/m
Weight	30g
Operating force	1.6N
Max. allowed force	4Nm
Application examples	Medical devices, controllers, multi-function handles

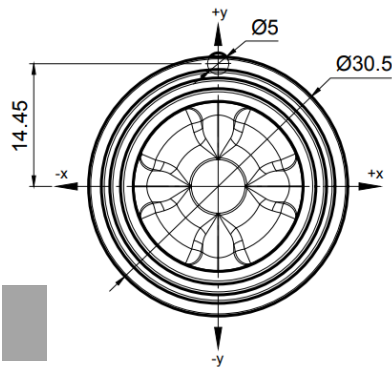


SK220 technical drawings

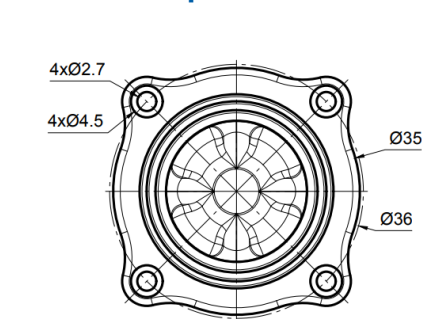
Dimensions side view



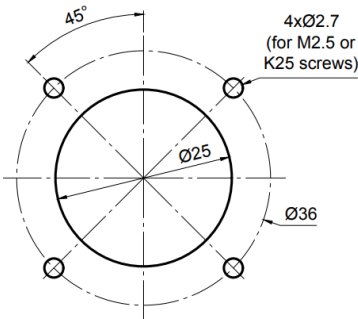
Top view without mounting flange



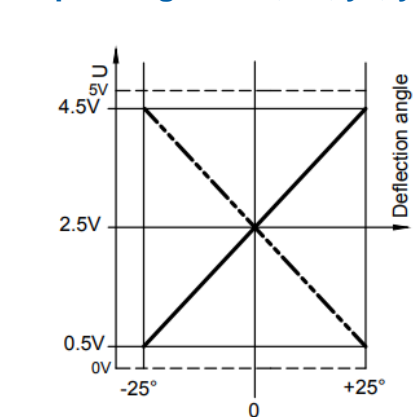
Dimensions plan view



Panel cut-out



Output diagram x1, x2, y1, y2



SK225 The round one



The precision controller

The SK 225 precision motion controller is designed for rough applications. In addition to the movement of a normal joystick, the entire knob can be continuously rotated 360 degrees while 20 clearly noticeable detents provide operator feedback.

A programmable, integrated, multi-coloured led ring along with a built-in push button are just a few of its unique features.

The controller impresses with no installation depth. This multifunctional controller has the ability to fit in a wide range of applications.

Please contact us, it will be our pleasure to suggest an individual joystick solution for your specific needs. Your custom solution is our standard.

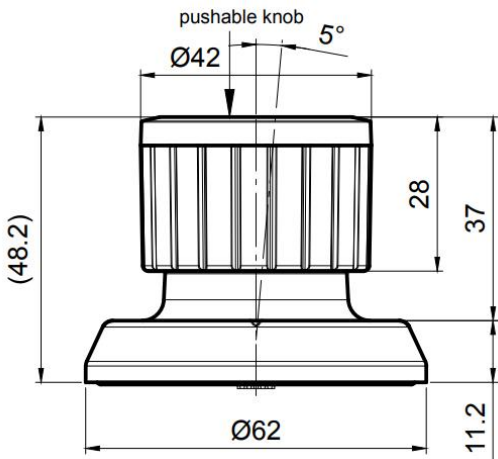
Technical specification

Axes	3 axes
Rotation	360° continuous rotation with 20 detents
Deflection angle	5° per semiaxis, self-centering
Push button	Press down whole knob – snap dome
Options	Without steps, without deflection in X and Y axes
Height above panel	48mm (~1.89in)
Mounting depth	0mm (0in), top mounted
Panel cut-out	Ø 40mm (1.57in)
Bolt circle	53mm (2.1in) with 4 x K30 self-tapping screws
Technology	Hall-effect sensors
Operating voltage	3,3-5V DC
Output signal	I ² C (standard), ask for options
Connection	Molex PicoBlade 4-pin connector
Durability	Up to 3 million full cycles, push button up to 1 million
Operation temperature	-30° - +70°C
Storage temperature	-40° - +85°C
IP protection class	IP67 (above panel)
Fire protection	UL94-V0
Illumination	Up to 150 cd /m ² RGB
Application examples	Medical devices, display control, vehicles, industrial machines

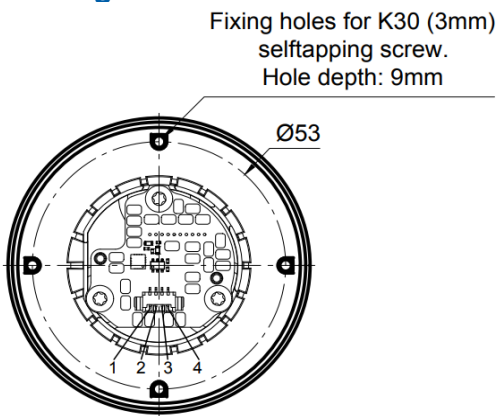


SK225 technical drawings

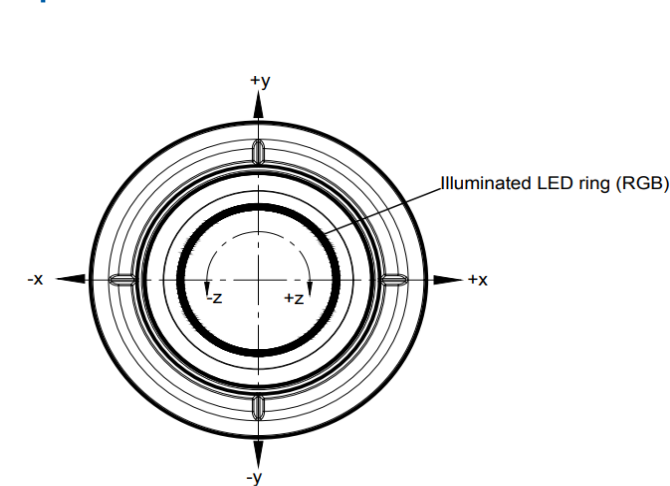
Side view



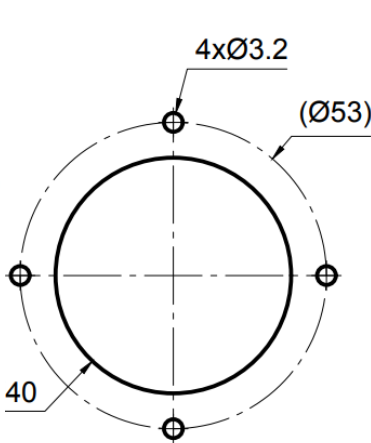
Mounting



Top view



Panel cut-out





Erlenstrasse 32

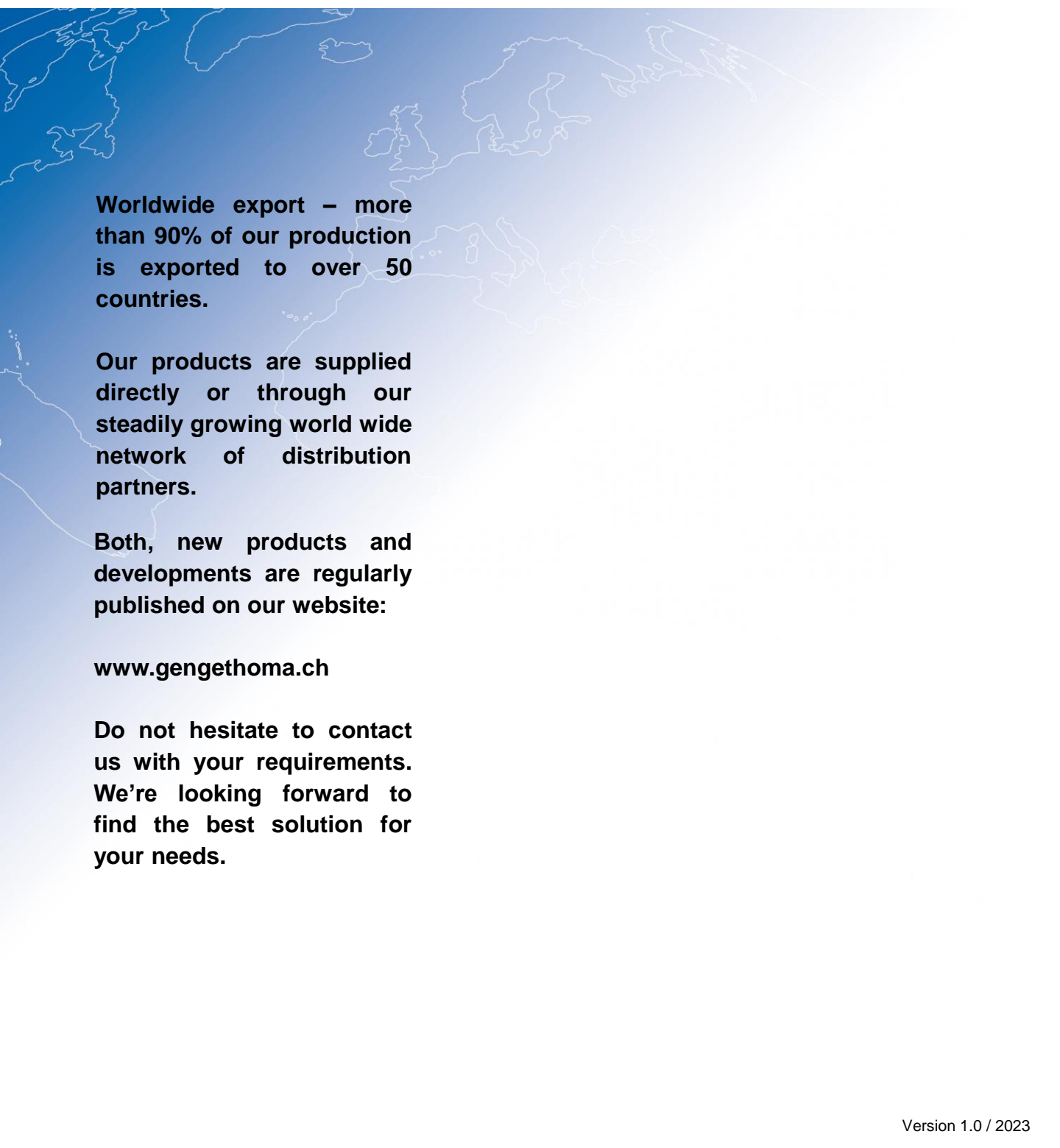
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Worldwide export – more than 90% of our production is exported to over 50 countries.

Our products are supplied directly or through our steadily growing world wide network of distribution partners.

Both, new products and developments are regularly published on our website:

www.gengethoma.ch

Do not hesitate to contact us with your requirements. We're looking forward to find the best solution for your needs.