Spohn+Burkhardt
Elektrotechnische Fabrik Blaubeuren

Joysticks

We build it so you can control it

Tradition and expertise

Welcome to Spohn + Burkhardt

The company.

Spohn + Burkhardt was founded in 1920 by Karl Spohn and David Burkhardt in Blaubeuren, Germany and continues to be family owned to this day.

The product line has grown from a small offering of transfer switches to a full line of products including joysticks, control stations and resistors, known worldwide for unmatched design and quality.

Our complete line of industry leading control products are manufacturedat two facilities in Southern Germany.
Sheet metal fabrication, finishing,resistor assembly and control system wiring is done at the facility in Schelklingen while corporate headquarters, controllers, controller accessories and control system final assembly resides in Blaubeuren.

The plant in Schelklingen boasts state of the art fabrication equipment that allows quick turnaround and the highest of quality for all customer requirements, including custom designs per customer specifications.

Our team of product developers and engineers work to create the most innovative new products in response to today's quick changing and demanding requirements.
We offer purpose built mechanical systems that integrate innovative electronics into all products. With industry leading engineering expertise and decades of experience, we work alongside our customers from start to finish in order to provide solutions to all of their control requirements.
We are prideful of this ability and see it as one of our many strengths and the foundation of our success.

Due to our size our strength lies in the unbeatable advantage of having the ability to be flexible and able to respond quickly and efficiently to new technological advances for any market throughout the world.

Made in Germany
for more than 90 years.

Spohn+Burkhardt
Elektrotechnische Fabrik Blaubeuren

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Innovative solutions for

- All port crane control applications
- Construction machinery
- Agricultural technology
- Vessel throttle and winch control
- Conveyors and drive control
- Transport engineering
- Plant engineering

Working under control

Perfect tools for professionals.

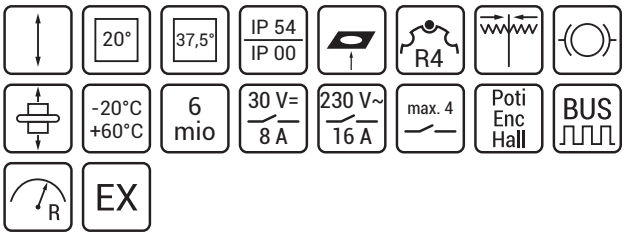
Spohn+Burkhardt
Elektrotechnische Fabrik Blaubeuren

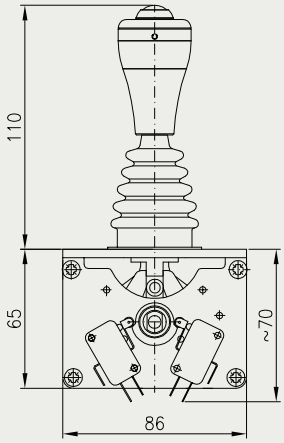
BENEFITS

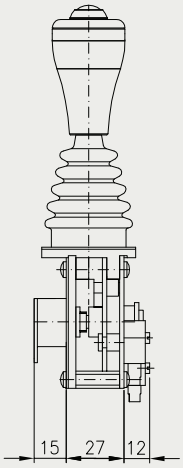
- Decades of experience in joystick design and manufacturing
- Optimum combination options of our joysticks and handles
- Harmonious relationship between joystick and equipment
- Deliveries from single pieces up to series production
- Upmost quality and service life
- Large dealer network providing service worldwide
- Custom designed solutions per customer requirements

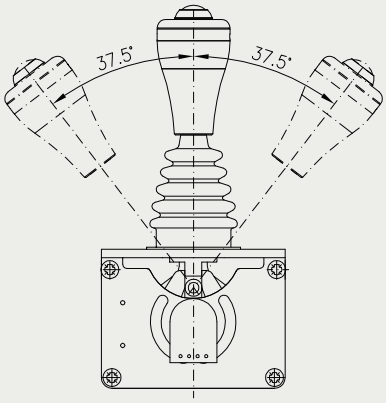
ST0

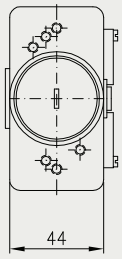
Solid.

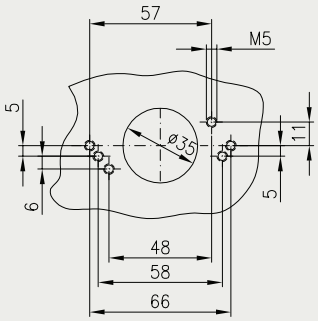




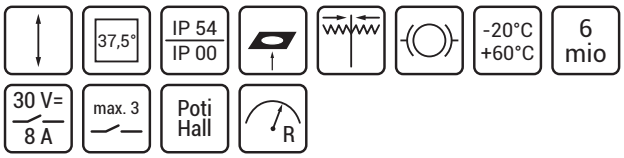






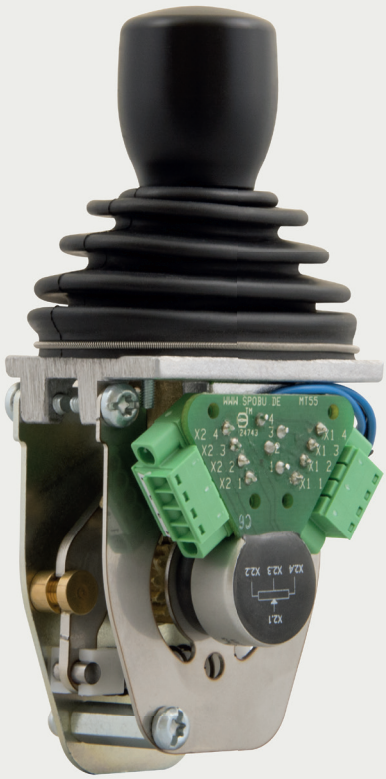


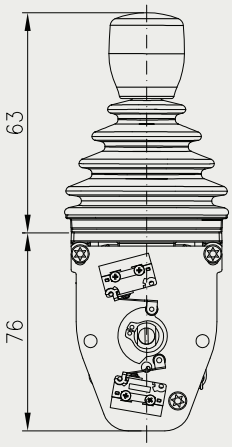
Both standard and custom solutions can be produced based on our modular principle. The sturdy metal cast drive block used as standard by Spohn + Burkhardt assures a long service life and high number of switching cycles. Including spring-return to center, friction brake and mechanical interlocking, the modular concept enables a wide range of options and variations. We provides this joystick in versions either engaging in 5-0-5 step output or with spring-return. A combined version with locking contact positions and momentary contact positions is also possible. Equipped with micro-switches, double contact elements, potentiometers, or absolute encoders, it can be used for a

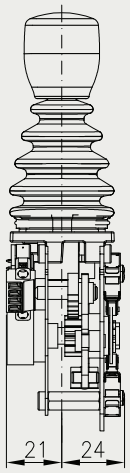


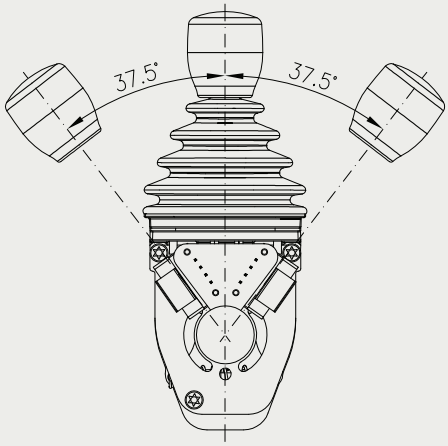
ST2

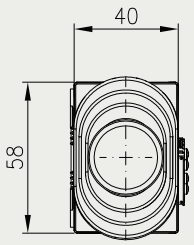
Compact, narrow single axis joystick.

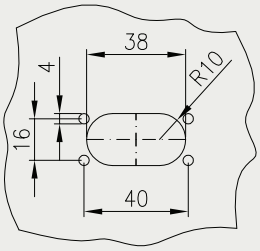




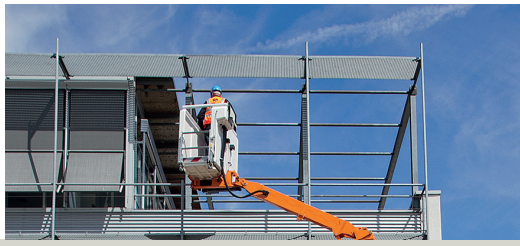








wide range of demanding control tasks. With an integrated bus interface, it works just as reliably as a bus node as with a valve amplifier for activation of solenoid valves. The comprehensive handle assortment completes this joystick with optical and tactile features. Depending on installation dimensions, we recommend the ST2 as a shorter variant with a lower profile than the standard ST0. This joystick is frequently used in control consoles, construction machinery, municipal vehicles, and in work platforms.



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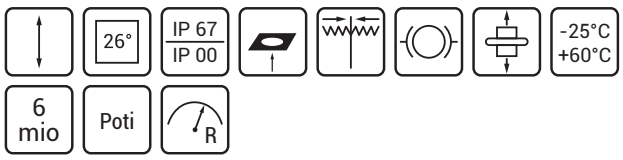
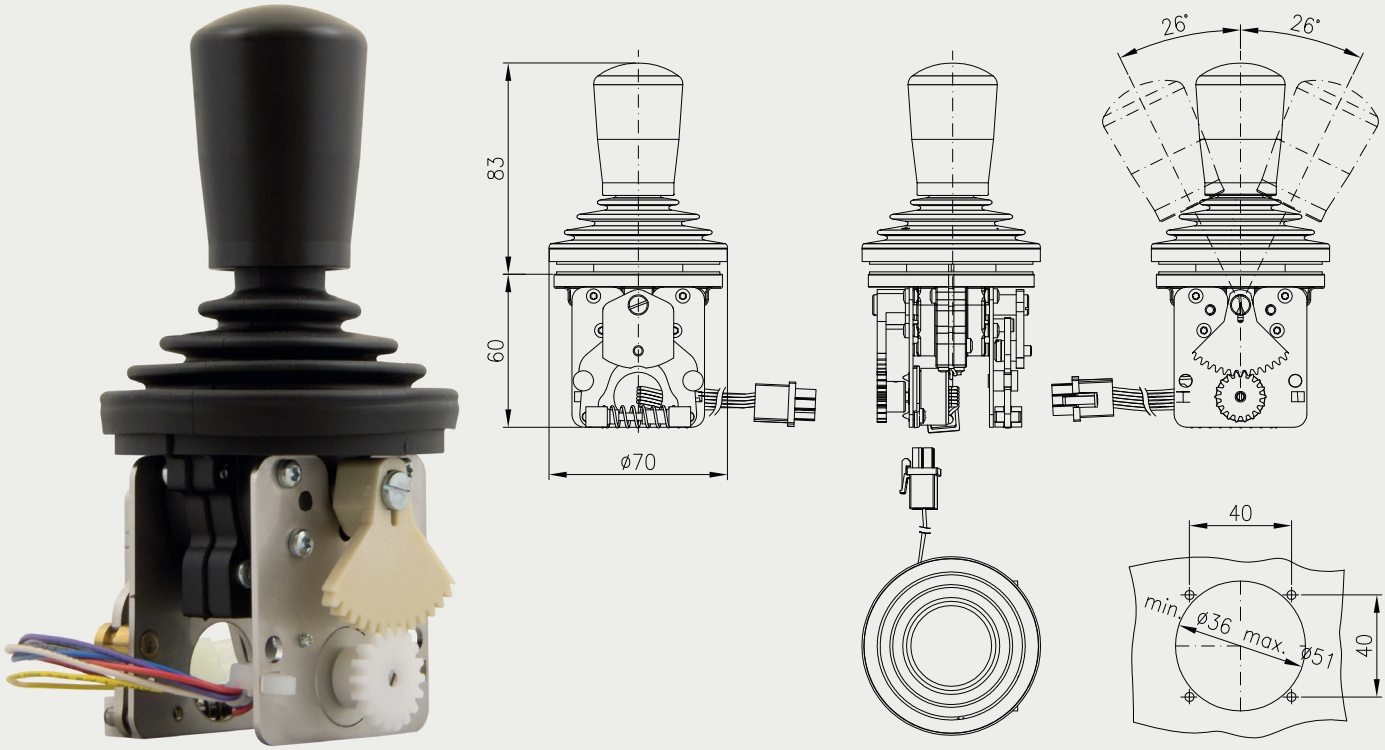


ST4

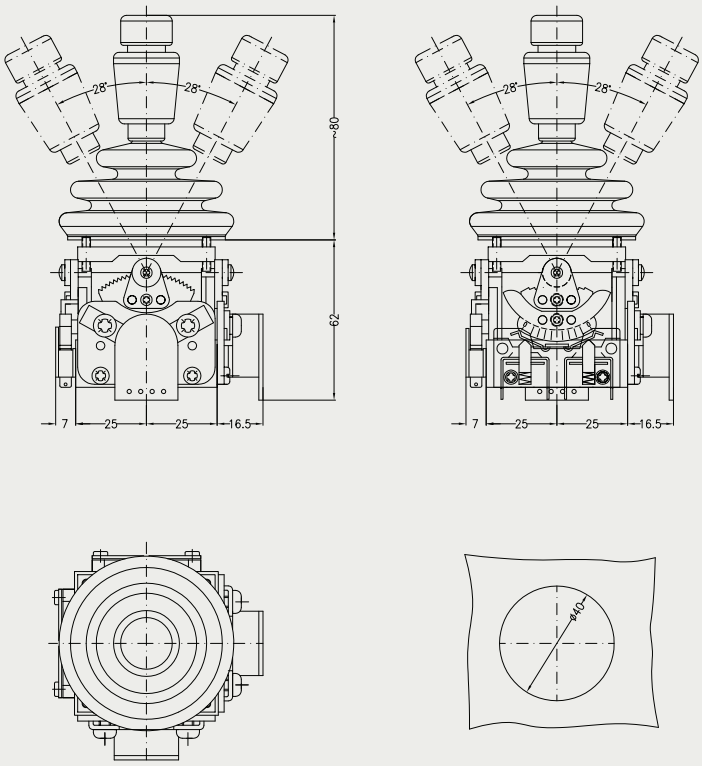
The weather-proof 1-axis joystick.



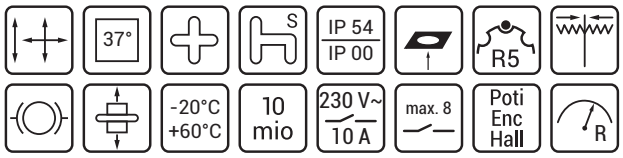
A specially-designed ST0 for wind and rain, snow and ice. The innovative drive block, a solution made of special plastic, guarantees even with defective rubber boot tightness and functionality when water enters. Specially designed for construction and agricultural machinery without cabin, this version ensures maximum shifting performance. For everything that is exposed to winter, weather and sunlight.

M0

Small, durable, and reliable.

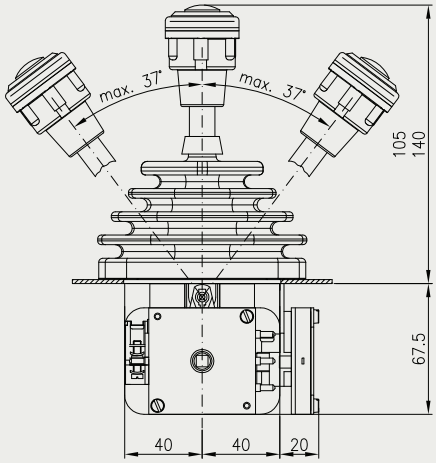


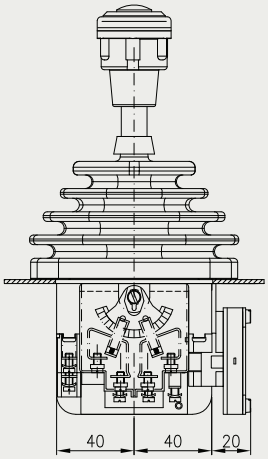
The M0 mini joystick is designed for digital applications with up to 5-0-5 step output and / or analogue applications with stepless output potentiometers. Micro-switches or analogue sensors are installed with modular double contacts on the drive block made of durable PA6 GF30 plastic. Of course, resistance to ozone, UV radiation, oil, and maritime climate is mandatory. Despite a very low installation depth, both a single drive and compound drive with spring-return can be provided. With installation of micro-switches, the joystick developed for low voltages can also be used for operating voltages of up to 230 VAC. For added stability, the high handle shaft was produced from metal and thus installation of a pushbutton in the handle is also enabled. An X-Y connecting link is also available in addition to the standard connecting link for handle deflection of up to 26 degrees. With its low weight and small dimensions, the joystick is intended for installation in portable panels and as a control switch for auxiliary functions.

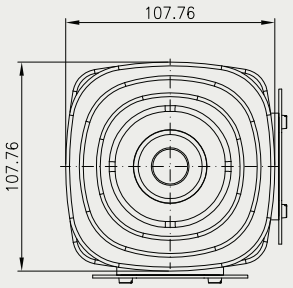


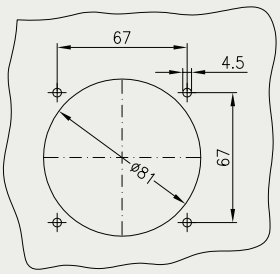
VCS0

Our classic joystick.





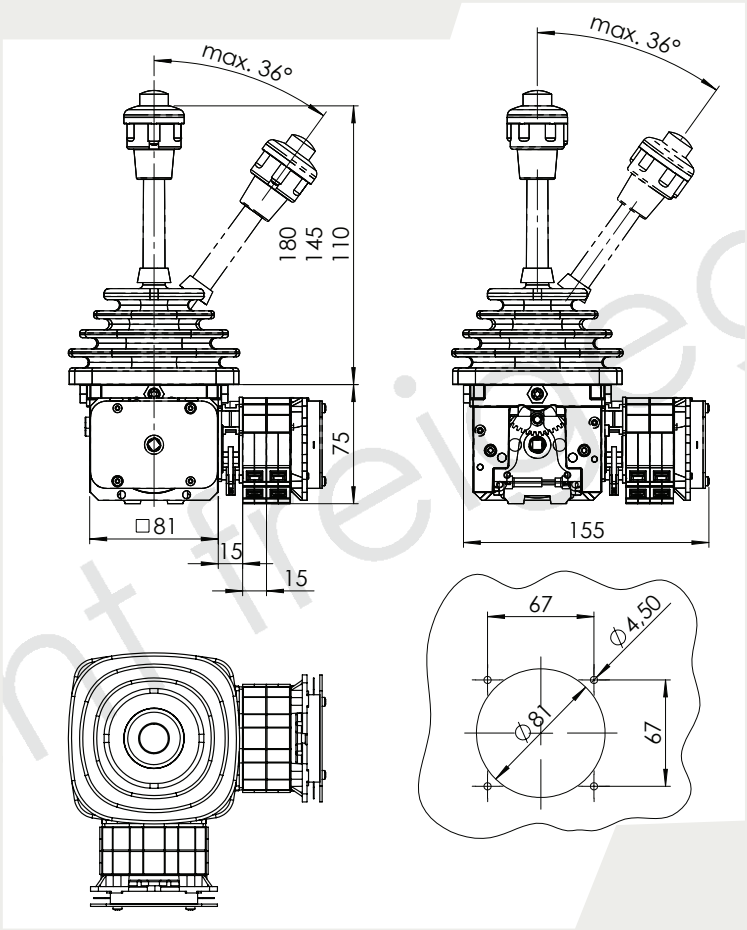




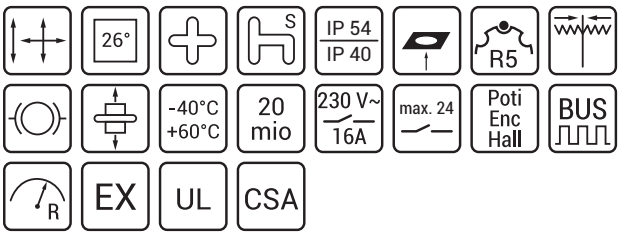
For medium-duty applications, we recommend this joystick which has been field-proven in use for decades. The drive block with special leak-current-proof, heat-resistant and cold-resistant insulation supports all mechanical components and serves as contact protection for the electrically conductive parts. An optional zero position, horn, or deadman's (operator presence) contact can be integrated in the drive block for space-saving and protected installation. Insulated double contact elements for up to 250 V and 10 A are intelligently positive locking and additionally flanged securely on the drive block. Various connecting links are available for mechanical limiting or guidance of the direction of movement. Standard and special connections can also be provided with the use of up to four double contact elements per axis. Positive-locking potentiometers and encoders can be docked with the use of a simple sliding coupling or directly instead of a double contact element. In addition to numerous special equipment applications, this joystick is supplied as standard equipment for cranes, control stations, and in portable control consoles – thanks to its low weight.

VNS0

The Allrounder.

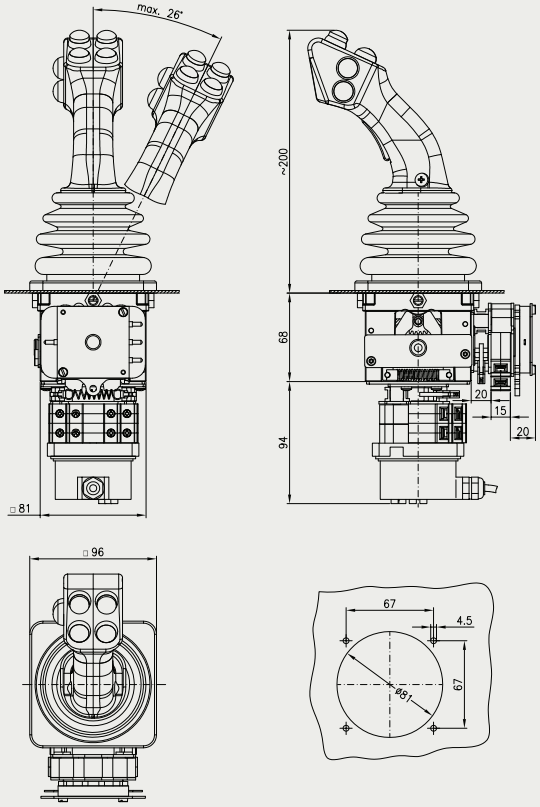


Both the VNSO and the NNSO are very robust joysticks with aluminium pressure casting consoles and metal gears. Their resistance against ozone, UV radiation, oil and maritime climate makes them especially suitable for heavy operations and in Ex-areas. They are available both as single and compound axis drives. The intelligent modular design allows customized solutions for contact elements for up to twelve units, each of them with two switching contacts. Those may be flanged in the x-,y- and z-axis as well as in series. A maximum of nine contact elements is feasible with spring return and notches. A large standard portfolio allows to choose the notches as well as the cams. They are also programmable according to client's request. Silver or gold contacts are optional. The hollow handle shaft made of a special alloy, with 8 mm diameter for

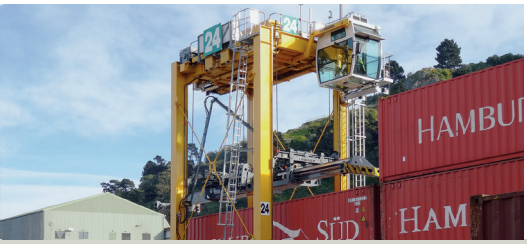


NNS0

Our special type.

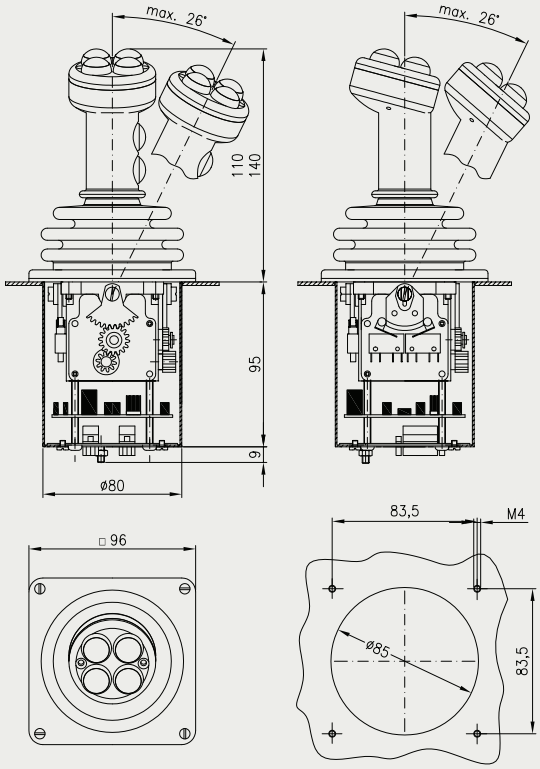


VNS0, 12 mm diameter for NNS0, enables assembly of a variety of handles and offers the possibility of guiding cables through the joystick. Rotational movements are also possible with a variety of handle options. The special coupling system offers a simple possibility for flanged mounting of various potentiometers and optoelectronic encoders. There are also a variety of printed circuit boards for bus systems available with adapted system size. You can optionally receive the nameplate according to your specifications in a transparent plastic version with the labeling of your choice, or as an engraved aluminum version.

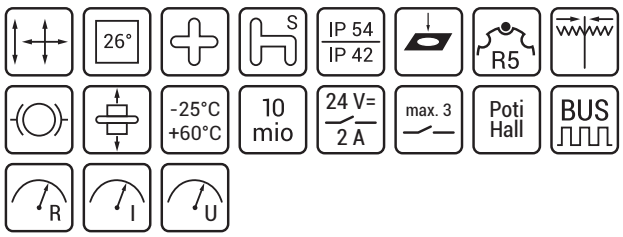


CS1

Compact 2-axis joystick with bus connection.

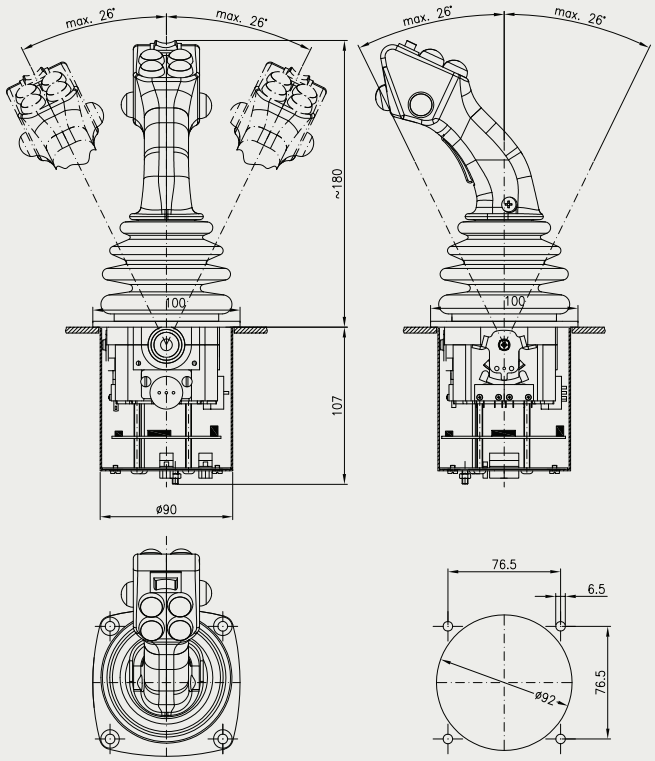


This compact, yet versatile joystick series is proof that joysticks do not have to be large. The durable and precise metal gear, controlled with an 8 mm (12 mm for single drive) handle shaft, drives with stamped cam discs, micro-switches, or metal gears or conductive plastic or wire-coiled potentiometers. Electronic interfaces for bus connection and amplifier assemblies for analogue transmission that are protected and shielded with a metal enclosure cup can be optionally installed under the impact-resistant, anti-aging plastic drive block. The wide range of options are made possible on the basis of a modular principle including standard and special connecting links, nameplates, rubber boots, and handles. If a version meeting your requirements is not included, we can develop one that is specially optimized for your application.



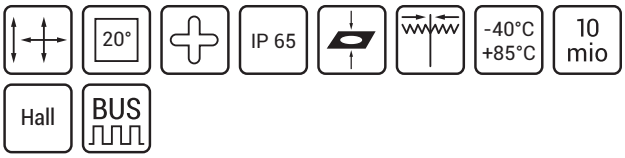
NS3

Our bus professional.

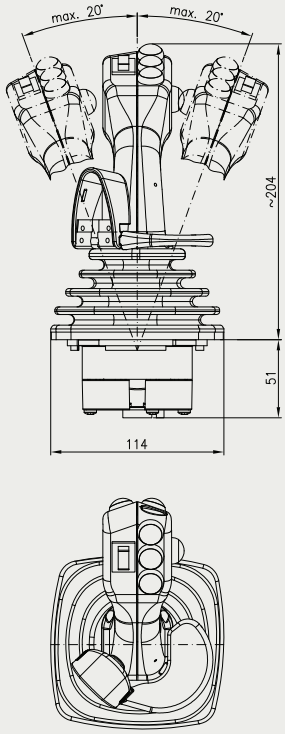


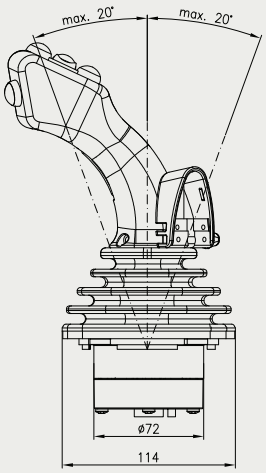
Metal gears and aluminum pressure casting elements are the highest Spohn + Burkhardt quality features for this compact precision joystick. The bearing is provided in a special pairing of bronze and plastic and enables very precise and delicate work. The special console design enables activation of electronic elements such as Hall contacts and potentiometers and the use of up to three switch contacts. Several bus and amplifier printed circuit boards are available as units that can be integrated on the underside with special encapsulation for EMC purposes. Pulse-width-modulated power distribution for activation of solenoid valves is also available. Of course, we also offer special connecting links for the guidance of the sturdy 12 mm handle shaft in addition to the standard connecting links. In combination with bus systems, the NS3 is suitable for tough conditions in construction, agricultural, and forestry applications, as well as for special machinery applications. There are also a wide range of handle options available from our modular system, or we can work with you to develop a custom version tailored to your requirements.

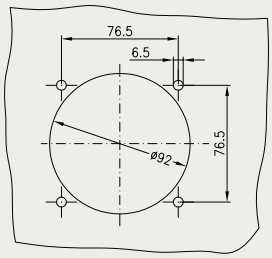
HS2



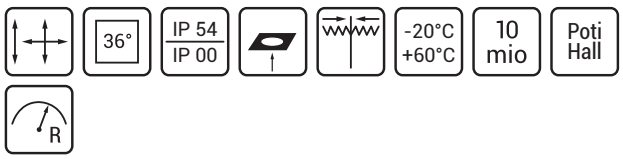
3D-Hall-Technology for highest claims.





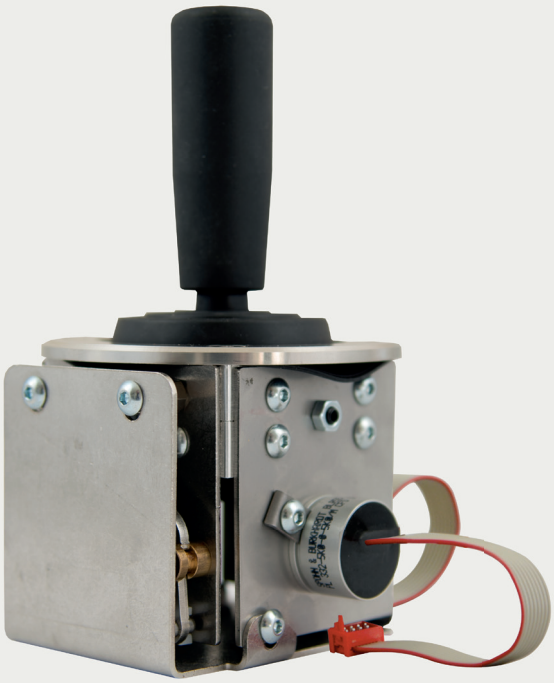


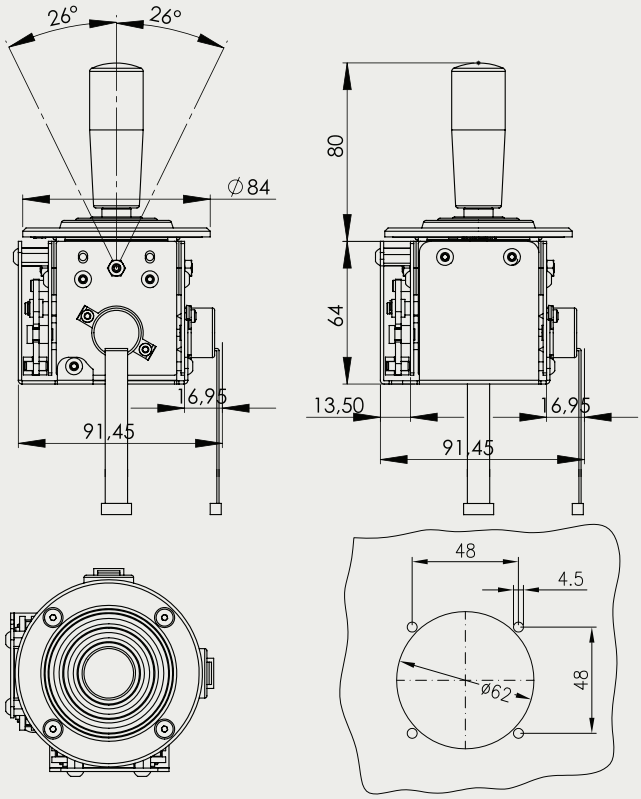
Especially for applications with all the different bus systems, this joystick was developed. The wear-free 3D Hall sensor system allows a control system to at least 10 million cycles. In addition to a Spohn + Burkhardt-typical stable ferromagnetic metal body, the low height and the depth of rotation are characteristics of this new joystick platform. The extremely compact design enables the use of even the smallest spaces and consoles to realize until now not possible console designs. Various connecting links, final notchings and a variety of handle shapes round off the range of applications. The joystick is used in particular in the agricultural and construction equipment and is easily integrated into complex control panels and systems.



JMS3

For the highest precision.

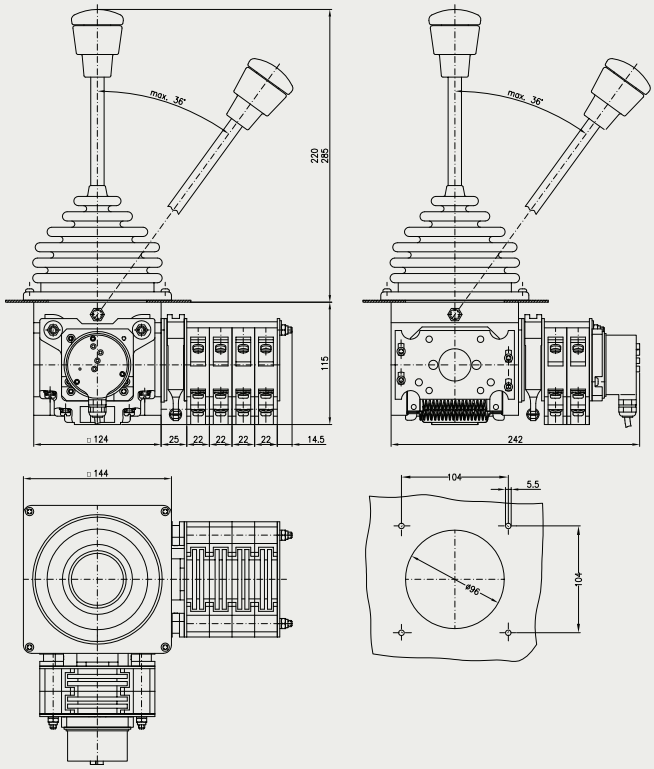




All-metal joystick manufactured with the highest precision. An aluminum base element is assembled with a positive-locking fit on the modular stainless steel and brass parts. Low-force and precise control is achieved with a solid brass gear and special oil-damped rotation dampers. Potentiometers or encapsulated HALL sensors are flange-mounted on the side for analogue output signals; on request, they can be installed with zero-play gearing based on a special design. The spherical cap with ball bearing and linkage are installed inverted in order to achieve a very compact design. This design solution assures a low handle height, which also facilitates exact and direct operation. The specially designed rubber boot visually completes the very flat appearance from above. Equipped with specially developed finger grips, this joystick is installed increasingly often in control consoles, control stands, and desks. This joystick demonstrates its strengths in applications requiring reliable control of fast vehicles and machines or extremely precise approach and alignment of loads in crane applications.

VNS2

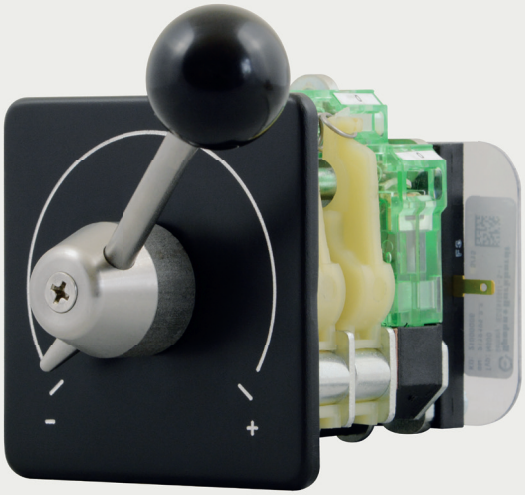
Convincing technology for the tough conditions.

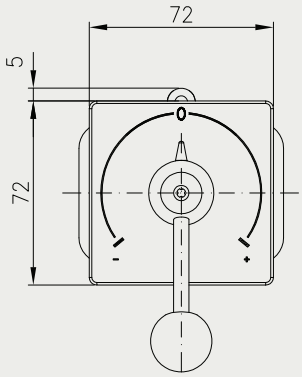


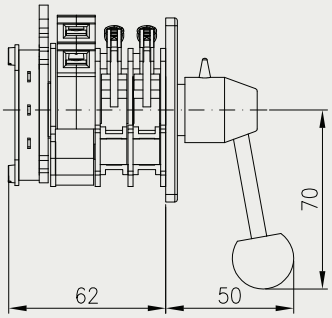
Our VNS2 is the big brother of our proven pioneer VNS0. It was developed especially for tough mechanical and environmental operating conditions. It is available as single or multi-axis controller or in conjunction with special handles as 3-axis version. The intelligent modular system permits the mounting of contact blocks in X, Y or Z direction, each with up to 12 double contact elements. Milled cams, programmed from our standard portfolio or customized, control the powerful DC, AC or gold contacts. Of course, the master switch with encoders, potentiometers or handles can be completed from our huge range of products. The 12 mm hollow handle stem of special alloy, an aluminum rosette, the metal gears and a drive block casting contribute to the estimated steel plant operators and crane manufacturers robustness and durability.

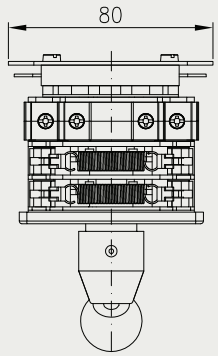
NS00, NS20

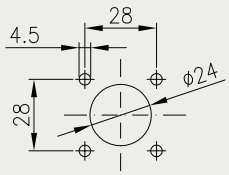
Robust.







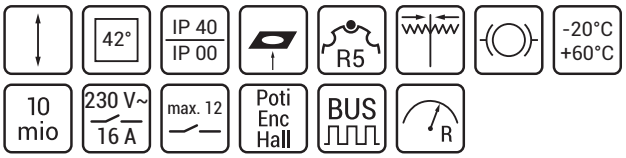


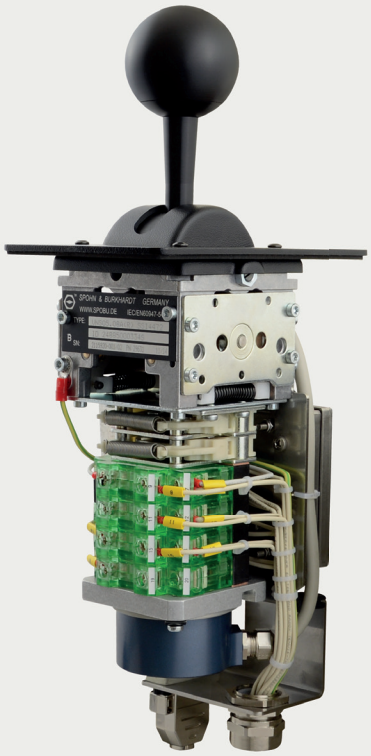


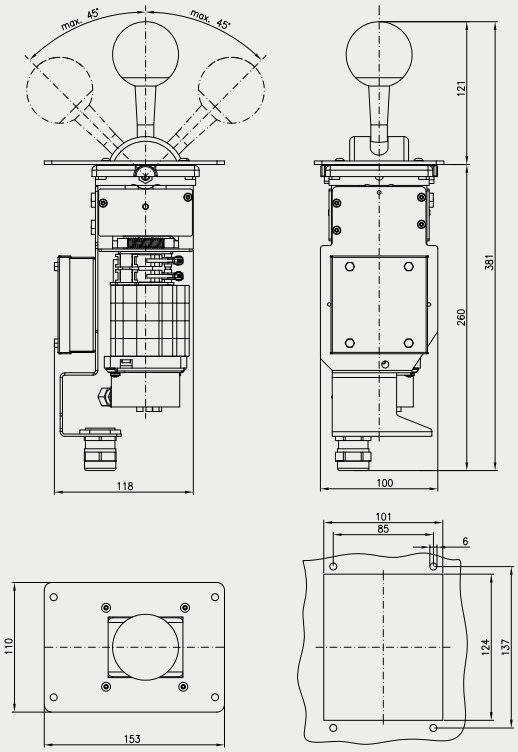
The NS00 and NS20 are very robust rotary switches with 6 and 12 mm diameter metal square shaft, aluminum nameplate, and cam-actuated contacts. The switch contacts, embedded in double contact modular blocks, with positive break by cam discs, are available in a gold-plated version for low voltage, as a silver contact for standard applications, or with permanent magnetic blowout for direct current. With metal notched discs from our modular program or custom positive-locking flanged potentiometers or encoders according to customer specifications, these rotary switches reliably handle control tasks in switch panels, control stations, and on-deck control stations.

FBS

The railway professional.







The FBS, a special version of the VNS0, is a switch developed for travel and braking operations used in trams and numerous other railway vehicles. It has been field-tested in practice over many years and has an impressively long service life and high reliability. In addition to its modular ergonomic design, it is resistant to ozone and UV radiation, so it can withstand harsh

Switches for railway applications

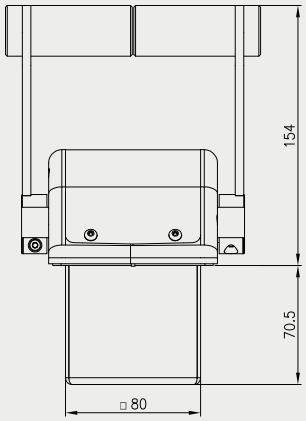
For work on rails.

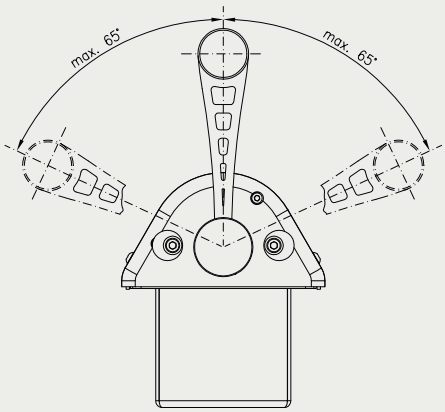
VNS0	ST0	Special solutions according to customer requirements	
			
▪ Setpoint specification via potentiometer ▪ Directional contacts ▪ CANBus interface ▪ Detent ▪ Friction brake and / or spring-return	▪ Contacts ▪ Partial reset ▪ Detent ▪ Friction brake and / or resetting ▪ Custom made according to customer requirements	▪ Setpoint specification for HALL sensors ▪ Mechanical reset block ▪ Detent ▪ Friction brake and / or resetting ▪ Deadman function ▪ Up to 2 positively actuated contacts	▪ Mechanical reset block ▪ Detent ▪ Friction brake and / or resetting ▪ Deadman function ▪ Up to 16 positively actuated contacts

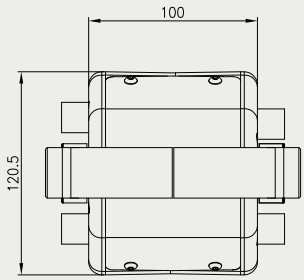
evironmental conditions. The deadman function provided with various handle shapes can be achieved either by mechanical-electrical means or with capacitive sensors and evaluating electronics. Possible switch versions vary from simple step switches to potentiometer switches to switches with encoders.

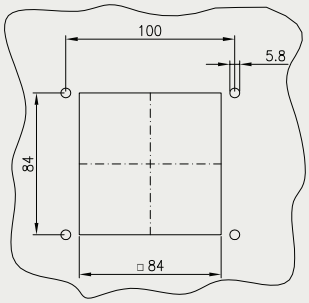
ST3

For ships and yachts.









Based on our ST modular system, single and dual switch lever applications can be realized with this joystick. The precision joystick provided with a metal spur gear is available with direction and switch contacts or with potentiometers. Variable movement stops for limiting of the throw angle, a special plate for custom labeling, and a stainless steel housing as a bottom cover round out the features of this product.

ST1, NS0-SFA, NS2KA

Developed for extreme environmental requirements.

ST1

- Single axis control lever
- Chrome-plated powder-coated aluminum housing
- Micro-switches and potentiometers
- Mechanical locking

NS0-SFA

- Single axis control lever
- Powder-coated aluminum housing, contact block with double contact elements and optionally with potentiometer or encoder
- Mechanical locking
- Friction brake or spring-return

NS2KA

- Robust single axis control lever
- Aluminium alloy housing optionally available with aluminum or V2A handle

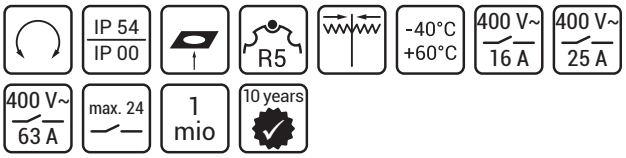
Control lever for ships

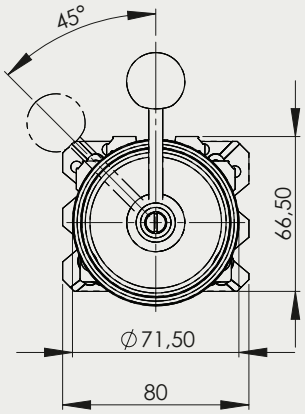
- Custom control lever
- Rotating handle
- Version with friction brake and detent

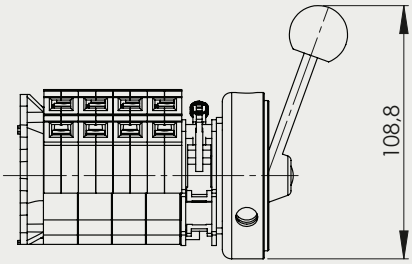
The requirement of assuring a high permanent IP protection rating on the panel top side led to the development of the ST1, NS0-SFA, and NS2KA control switches with chrome-plated and / or aluminum alloy cast consoles. The galvanized or stainless steel handle shaft provides precise control over the sealed shaft via bevel gears, contacts, potentiometers, and encoders that is stepped or stepless, locking, with spring-return or friction brake. These switches demonstrate their durability and reliability on ships, yachts, oil rigs, or steel mills.

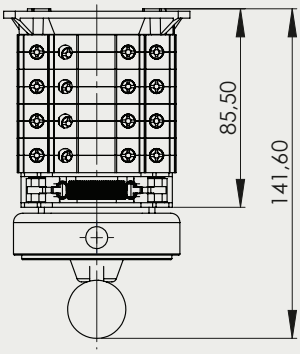
NS00, NW1, NW2

Robust.



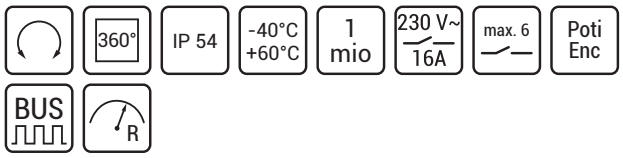






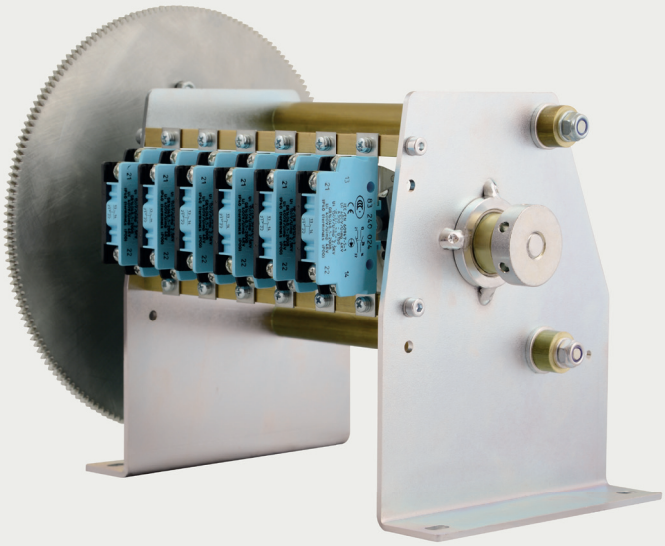
The NW-series comprises three robust cam switches staggered by switching power. A massive knob, form-fitting attached to the square shaft with metal lined milled cams, controls in double contact elements embedded positively opening switch contacts. Moreover spacious dimensioned ceramical arc chambers with Dejon-sheets, strong blow magnets and a large-open contact way ensure a safe switching.

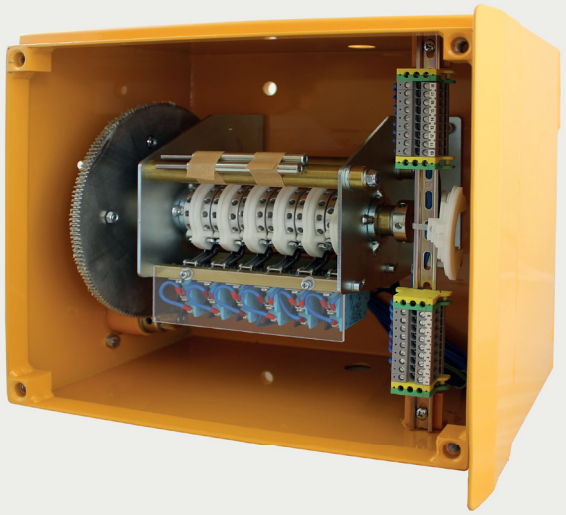
Optional closure devices made of metal for hanging padlocks or stable housing made of cast aluminum or metal are available. The NW-Series has proven itself for decades under extreme environmental conditions in cement factories, in belt drives, as travel limit switches in the crane area and everywhere where a rugged, durable switch is required.



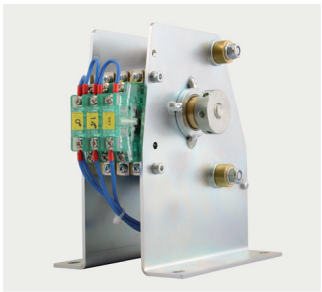
SM7747

Our gear limit switches.





The gear limit switches with transmission ratios from 5:1 to 15:1 are modular switching devices for the pivot range limitation. The positively activated contacts are actuated by means of two infinitely variable cam discs over a zero-play toothed gear drive realized by means of a pretensioned twin gear wheel. Encoders or potentiometers can be optionally flange-mounted on the metal drive shaft. This version, which is installed in a powder-coated steel housing and adapted to the size of the limit switch, has been field-proven over many years of use in lifting equipment applications.



Spohn+Burkhardt
Elektrotechnische Fabrik Blaubeuren












Special switches

Custom configurations.

NNS0 with bus

- Positive-locking flange-mounted interfaces for direct connection to PROFIBUS-DP, PROFINET I/O, CANBus Open, or J1939
- Optional hardware contacts activated by proven mechanical drive components

EX version

- Our solution for explosion-prone areas
- Fitted with Explosion-proof limit switches and / or Explosion-proof potentiometers for Zone 1

Rotary potentiometer

- Very robust potentiometer drive for 3 or 5 rotations with metal gear, friction brake, and non-slip rotary knob

Mini steering wheel

- Steering gear, 5:1 gear ratio, 3.75 rotations
- Precise, zero-play steering gear
- Hydraulic damping of the rotary movement
- Analog director can be optionally flange-mounted

ST2D

- Dual lever drive
- Micro-switches and potentiometers can be mounted
- Optional bus interface

NS0GG

- Proven dual lever drive
- Positive-locking mounting of contacts, potentiometers, and encoders

NS2GG

- Robust dual lever drive
- Direct current and alternating current contacts

Potentiometers / Electronics

Overview.

	Capacity	Exd	Technology	Type
Potentiometer	2 W		wire-wound	PD200
	3 W		wire-wound	PD550
	3 W		wire-wound	PW55
	6 W		wire-wound	PW70
	0,5 W		conductive plastic	Bxx
	0,5 W		conductive plastic	BLRxx
	0,5 W		conductive plastic	Gxx
	0,5 W		conductive plastic	GLRxx
	0,5 W	x	conductive plastic	Exd-PL310
	1 W	x	wire-wound	Exd-PW45
Potentiometer with amplifier	Output signal	Operating voltage		
	20 - 0 - 20 mA	24 VDC	conductive plastic potentiometer with amplifier	CAG 020
	20 - 4 - 20 mA	24 VDC	conductive plastic potentiometer with amplifier	CAG 420
	4 - 12 - 20 mA	24 VDC	conductive plastic potentiometer with amplifier	CAG 41220
	20 - 0 - 20 mA	24 VDC	conductive plastic potentiometer with amplifier	CAB 020
	20 - 4 - 20 mA	24 VDC	conductive plastic potentiometer with amplifier	CAB 420
	4 - 12 - 20 mA	24 VDC	conductive plastic potentiometer with amplifier	CABxx 41220
Amplifier	-20 - 0 - +20 mA	24 VDC	Amplifier for potentiometer	PAP20I
	-10 - 0 - +10 V	24 VDC	Amplifier for potentiometer	PAP10U
Inductive encoder	50 - 0 - 50 VAC	115 VAC	inductive	DG0 115/50
	50 - 0 - 50 VAC	230 VAC	inductive	DG0 230/50
	-10 - 0 - +10 VDC	115 VAC	inductive	DDG0+ESS030
Optical encoder	8-Bit Code / current	9-36 VDC	optoelectronic	OERxx
	8-Bit Code / current	9-36 VDC	optoelectronic, halogen-free cable	OERHxx
	-20 - 0 - +20 mA	18-36 VDC	optoelectronic	OGRPP20xx
	6-Bit Code	9-36 VDC	optoelectronic	OGF6B, OGF6G
	20 - 0(4) - 20 mA	18-36 VDC	optoelectronic	OGF020, OGF420
	-20 - 0 - +20 mA	18-36 VDC	optoelectronic	OGFP20
	PROFIBUS-DP	11-27 VDC	optoelectronic	OGO-DP, OEP-DP
Hall-sensors	20 - 4 - 20 mA	24 VDC ± 20%	Hall-Sensors	HS420
	0,5 - 2,5 - 4,5 V	5 VDC	Hall-Sensors	A1, A2
Bus interfaces	Bus system			
	CAN2.OB	9,5-32 V		
	CANopen	10-36 V		
	SAE-J1939-71	10-36 V		
	PROFIBUS-DP	10-36 V		
	PROFINET I/O	12-35 V		
	PROFINET I/O with PORFIsa-fe-protocol	12-35 V		
Capacitive sensor handle	Relay output, 1 changer contact	24 VDC ± 20%		

ST0	ST0N	ST1	ST2	ST3	ST4	M0	VCS0	VNS0	NNS0	NNS0-PI	VNS2	CS1	NS3	HS2	JMS3
✓	✓	✓				✓	✓	✓	✓		✓				
✓	✓	✓					✓	✓	✓		✓				
✓	✓	✓					✓	✓	✓		✓				
							✓	✓	✓		✓				
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													✓	✓	
✓	✓						✓	✓	✓	✓	✓	✓	✓		

Handle overview

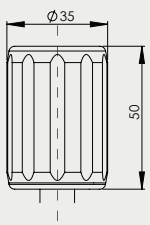
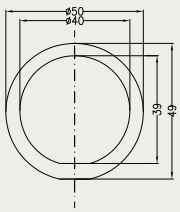
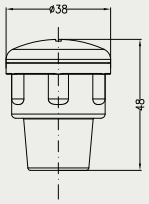
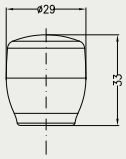
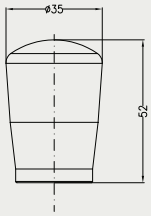
Possible combinations of switches and handles.

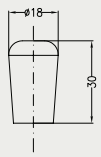
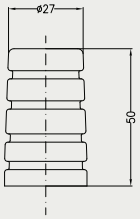
		ST0	ST1	ST2	ST3	ST4	M0	VCS0	VNS0	NNS0	VNS2	CS1	NS3	HS2	JMS3
G49							✓								
MO54							✓								
G41		✓	✓					✓	✓			✓			
G41 T								✓	✓						
G41H								✓	✓						
G41HD								✓	✓						
G41HDV sunk								✓	✓						
G41TY contact by lifting								✓	✓						
G41D notch/ G41DR spring return								✓	✓						
G41Z with/without contact								✓	✓						
G41HDZ with contact by push button								✓	✓						
G41HDVZ with contact by push button								✓	✓						
G41HDFZ with contact by push button								✓	✓						
G22			✓				✓	✓	✓	✓	✓	✓	✓	✓	✓
G21		✓	✓					✓	✓	✓	✓	✓	✓	✓	✓
G27		✓	✓												
UG		✓						✓	✓	✓	✓	✓	✓	✓	

	ST0	ST1	ST2	ST3	ST4	M0	VCS0	VNS0	NNS0	VNS2	CS1	NS3	HS2	JMS3
UGD 	✓						✓	✓	✓	✓	✓	✓	✓	
UGA 	✓						✓	✓	✓	✓	✓	✓	✓	
BNSWD 	✓	✓					✓	✓			✓			
BNS 	✓	✓					✓	✓			✓			
G9 	✓						✓	✓	✓		✓	✓	✓	✓
G25 	✓						✓	✓	✓		✓	✓	✓	✓
G1 	✓	✓					✓	✓	✓	✓	✓	✓	✓	
KG40 	✓	✓					✓	✓	✓	✓	✓	✓		
KG50 								✓	✓	✓				
KG56-IKZ 								✓	✓	✓				
G19-Z 							✓	✓			✓			
G2 	✓	✓					✓	✓	✓	✓	✓	✓	✓	
G4T-WT 	✓	✓					✓	✓			✓	✓		
G13 	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	
G44 			✓											
G36 				✓										
G45 					✓									
G45Z 					✓									

Handle without button

Overview.

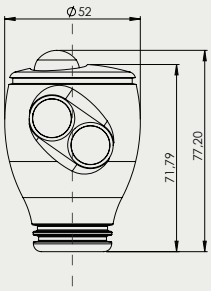
G50	KG40 / KG50	G41	G44	G45
				
				

G42	G43
	
	

Handle with button

Overview.

G51



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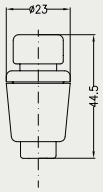
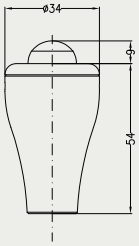
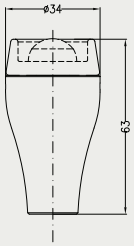


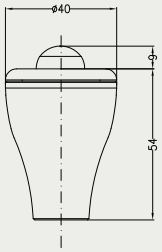
G27



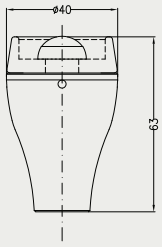
G27-V



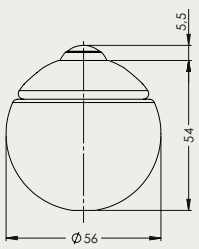
G22



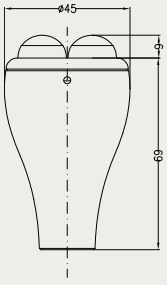
G22-V



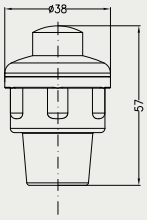
G20



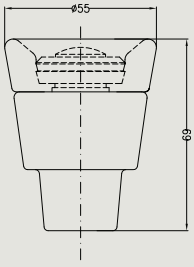
G21



G41-H

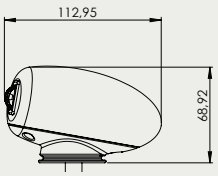
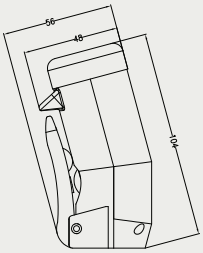
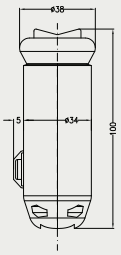
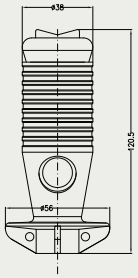
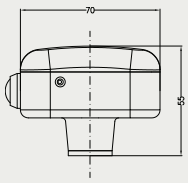


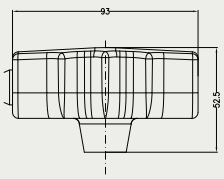
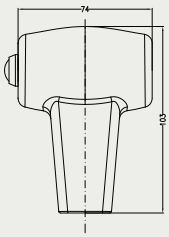
G46-HDV



Balls and T-handles

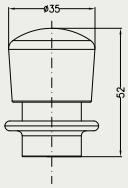
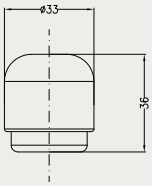
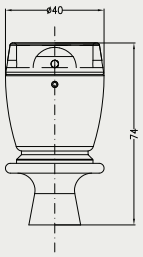
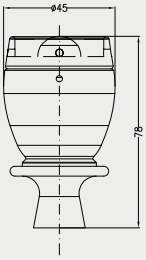
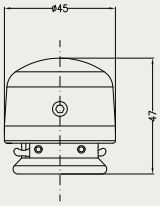
Overview.

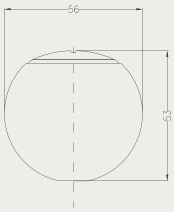
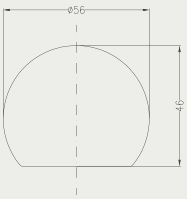
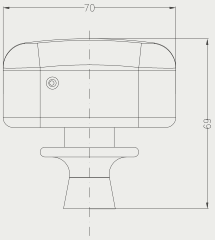
G53	G4T-WT	B1NSWD	BNSWD	G13
				
				

G1	G2
	
	

Handles for mechanical locking

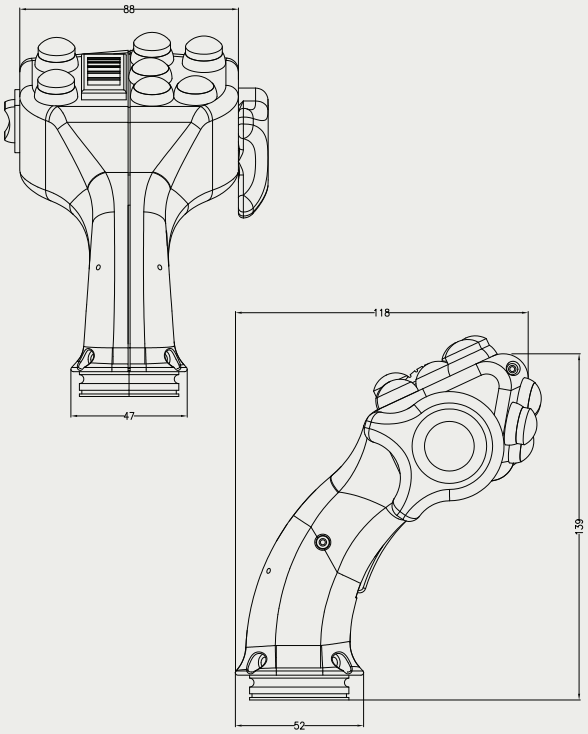
Overview.

G45-Z	G47-Z	G22-ZV	G21-ZV	G19-Z
				
				

KG56-IKKZ	KG56-IKZ	G13-Z
		
		

UGA

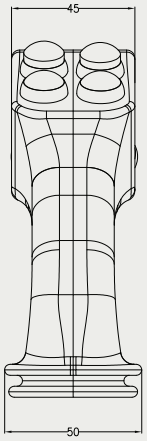
Universal.

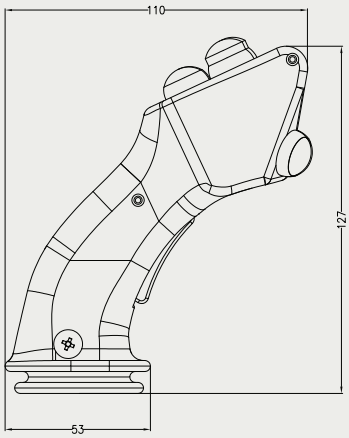


With its narrow and wide handle halves, the UGA offers a wide variety of combination possibilities and functions. You can customize your handle by selecting the various switch installations. Please note that not all installation positions can be filled due to space limitations. Please consult the factory for your specific layout capability. This handle is also available with a hand rest for a low fatigue work environment. The UGA can also be combined with many of the joysticks in our product assortment.

UGD

Functional.

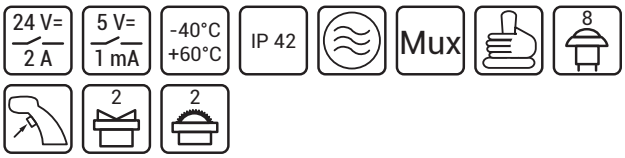


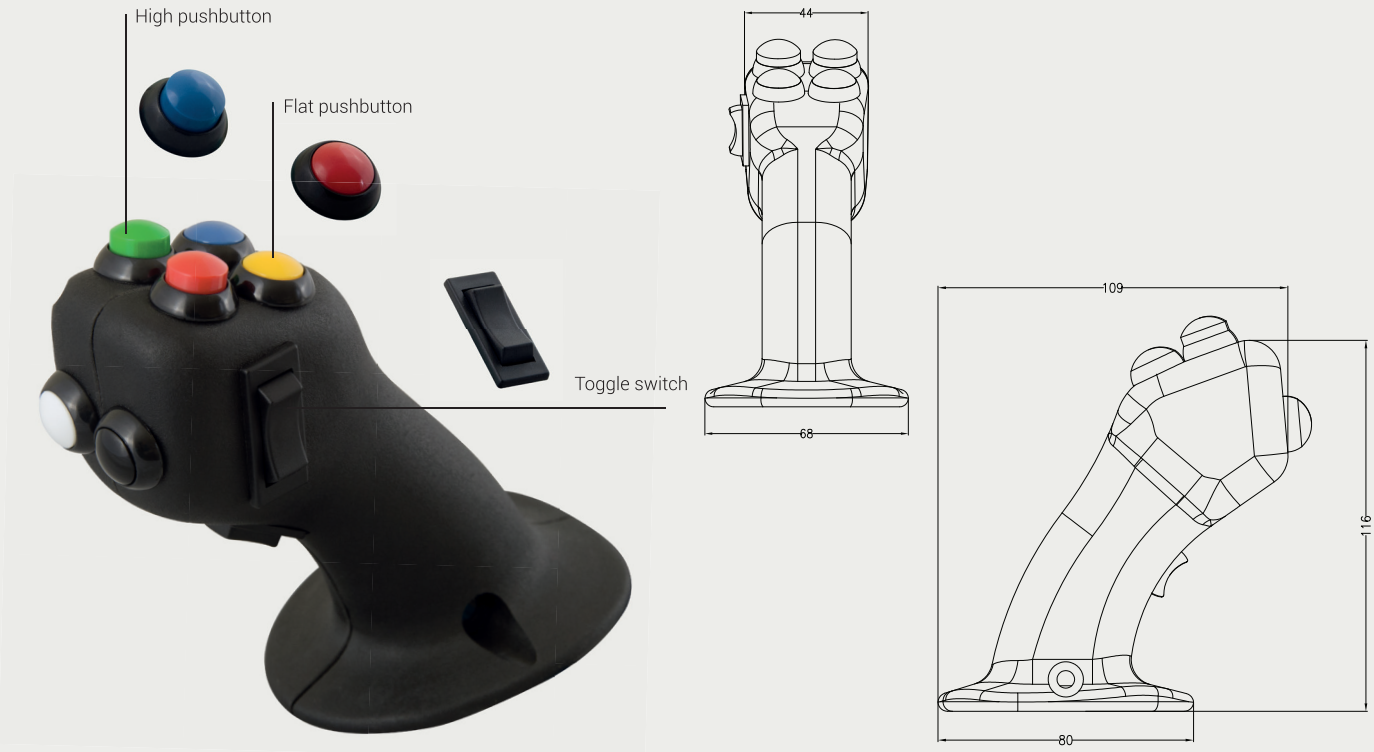


As with the UGA, various components can be installed in the somewhat smaller UGD. You can also decide which positions of the handle should be occupied. Please mind that some combinations can not be used at the same time due to internal space limitations. Depending on the area of application, you can combine the handle with a joystick from our product assortment.

UGN

Hand rest included.



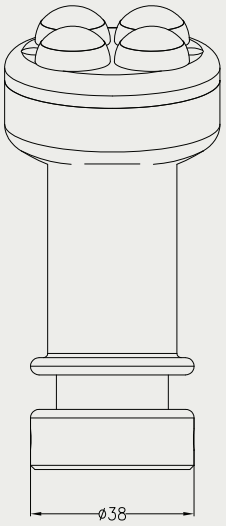


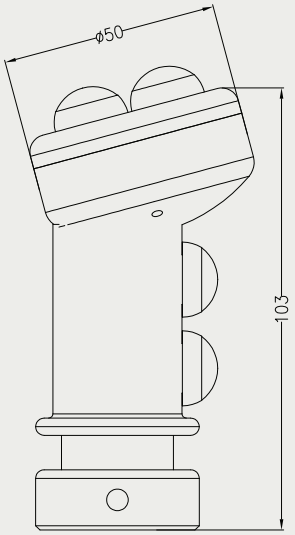
The UGN, which is the smallest handle of our UG series, can be equipped with various components like its bigger brothers. Please mind that not all positions can be used at the same time. With its small, compact design, it is easy to operate. All pushbuttons and toggle switches are easily reached without changing grip positions. The UGN can be configured for either left-handed or right-handed application.

24 V= 2 A | 5 V= 1 mA | -40°C +60°C | IP 54 | 6

G25, G9

Compact.





The G25 and G9 are designed such that they can be operated between the thumb and index finger or with the entire hand. The upper 4 push-buttons are ergonomically tilted downwards and the lower 2 push-buttons can be optionally mounted on the left, right, or in the front. The control field can be configured according to customer wishes.

Special handles

For individual requirements.

Examples for special solutions according to customer requirements

- Ergonomically shaped
- Versatile
- Optional capacitive sensor
- 1 left and / or right pushbutton
- Freely selectable color composition

- Ergonomic T-handle with freely designed control field for thumb operation
- Fixed hand rest

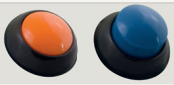
- Ergonomically shaped
- Freely selectable control fields according to customer requirements
- Integrated electronics for CANBus

- Ergonomic shape for intuitive operation
- All important functions in one hand
- 3 analog thumb wheels
- Integrated mini joystick
- Multiple pushbuttons and toggle switches

We also design handles in small series for your individual requirements. This may involve simpler round shapes which are produced from turned parts or more complicated shapes which can be produced in small series by means of 3D printing. For larger series, we can produce handles according to your requirements in an injection molding process.

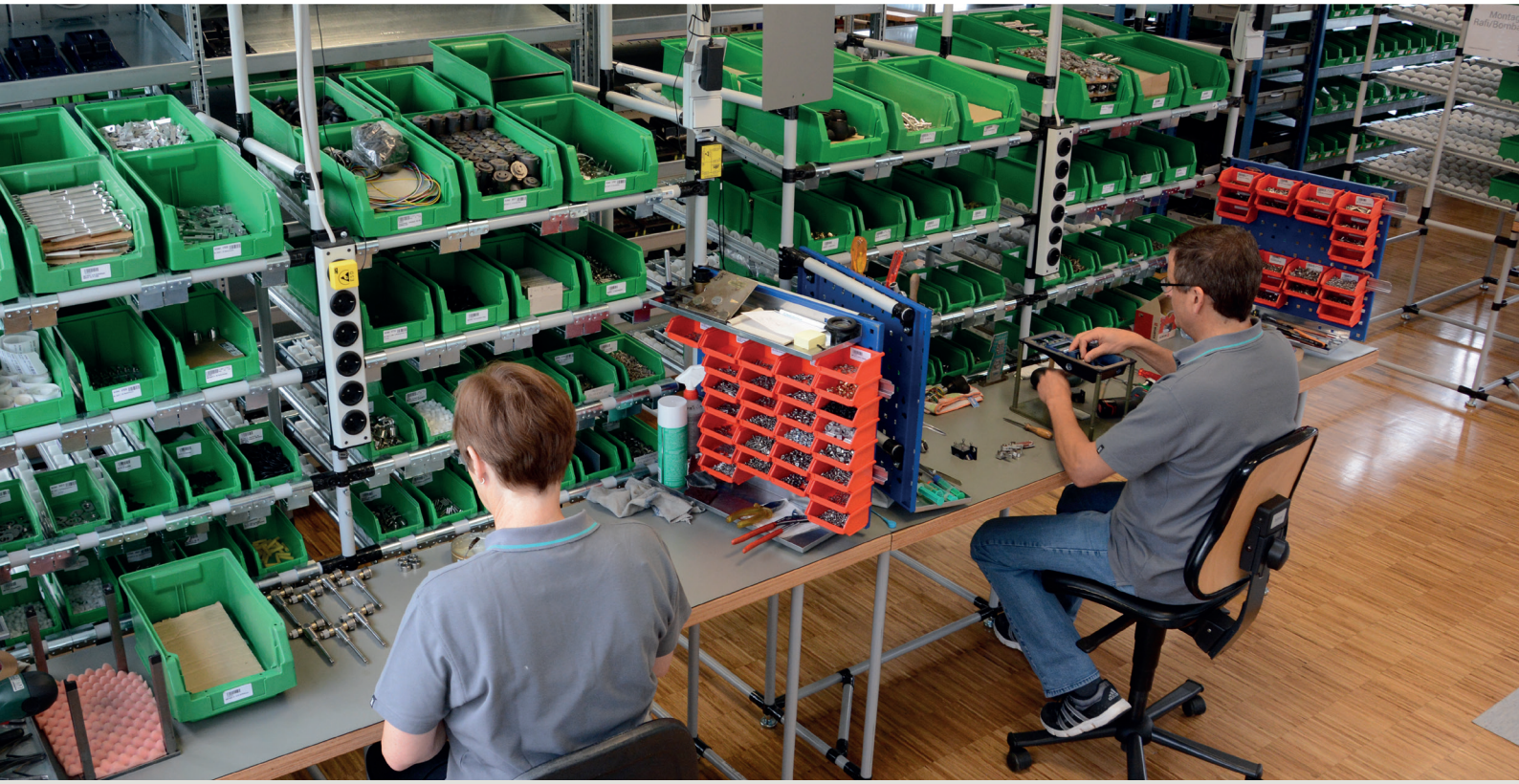
Components in the handle

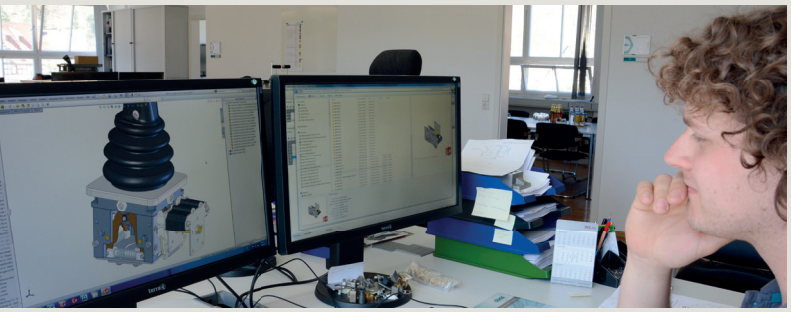
Overview.

		Model	Color actuator	Protection	Note
push button		spring return	■■■■■■■■■	IP67	1 closing contact oder 1 closing contact/1 break contact, high or flat actuator, max. 3 A-24 VDC
		spring return, latching, LED	■■■■■	IP67	1 closing contact, LED 12 or 24 VDC max. 2 A-24 VDC
		spring return	■■■■■	IP67	1 closing contact cap Ø 25 mm
		spring return	□■	IP40 IP65	1 closing contact or 1 break contact, screw connection optional, protection cap for IP65
		spring return	■	IP65	enabling switch, 3-step, 2 make contacts, max. 0,7 A-30 VDC
		spring return	■	IP40	1 closing contact
Rocker switch		spring return, latching	■	IP40	0–1, 1 closing contact
		spring return, latching	■	IP40	0–1 or 1–0–1
		latching	■	IP67	1–0–1 dust- and splash waterproof
		spring return, latching	■	IP40	1–0–1, optional with protection cap
		latching	■	IP68S	direction switch, 1–0–1 with 1S1O+1S1O, max. 2 A-24 VDC
Minijoystick		spring return	■	IP54	per axis 1S+1S, max. 2 A-24 VDC
		spring return	■	P54	
Analog elements		potentiometer, Hall	■	IP40	
		potentiometric	■	IP40	rotary potentiometer with contacts
LED		LED	■■■■	IP40	12 or 24 VDC

Professional design engineering services

From the idea to the final product.





Every application is different and every solution is unique.

Since 1920 we have designed and manufactured high quality, custom joysticks.

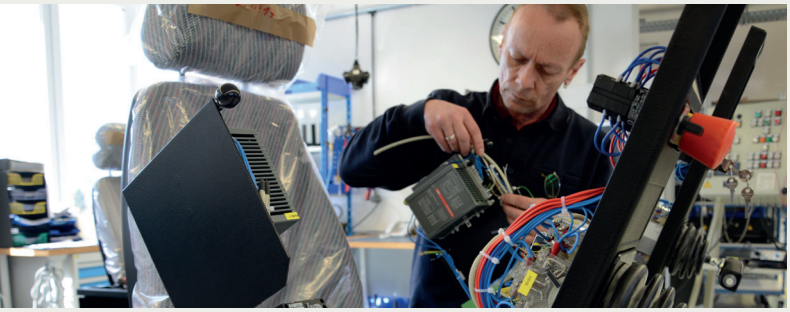
We listen to and take into consideration the needs of our customers and the markets we serve.

Our research and development department is constantly working on new designs to meet the ever changing market demands. We constantly review, update and improve existing products to optimize performance and increase value to our customers.

Our commitment to quality and innovative designs sets us apart from our competition.

We have an unmatched focus and commitment to oofer the best solutions for all of our customers.

Spohn + Burkhardt:
Made in Germany
for more than 90 years.



We build a solution for you.

Our design department works with you to develop custom solutions with the objective of meeting your requirement as effectively as possible.
All in accordance with our motto:

Spohn + Burkhardt:
We build it so you can control it.

Spohn+Burkhardt
Elektrotechnische Fabrik Blaubeuren

Foot pedals

Overview.

SF	FST	FPS, FPW	FSTS, FPSS, FPWS
			
▪ One or two step output with reset ▪ Powder-coated aluminum housing ▪ Protection rating IP42 or IP56 ▪ Actuator with deep ribbing ▪ Sturdy flange plate ▪ Options: Metal cable screw connection ▪ Use in industrial applications	▪ Analog with optional contacts with reset ▪ Powder-coated aluminum housing ▪ Protection rating IP54 ▪ Ergonomically ribbed aluminum step plate with heel edge for foot positioning ▪ Simple, stable mounting ▪ Options: Metal cable screw connection ▪ Use in industrial applications	▪ Maximum 4-step output or analog with reset ▪ Powder-coated aluminum housing ▪ Protection rating IP42 ▪ Large, ergonomically ribbed aluminum step plate with heel edge for foot positioning ▪ Simple, stable mounting ▪ Options: Metal cable screw connection ▪ Specially designed for use in harsh industrial applications	▪ FST, FPS, FPW version with sturdy metal protective hood ▪ Industrial applications in which activations entails a hazard

Specializing in custom solutions

Perfect adaptation to your work environment.

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Legend

Explanation of symbols.

	1-axis
	2-axis
	1- or 2-axis
	Rotating drive
	Angle
	Cross gate
	Special gate
	Max. achievable protection category outside | inside
	Installation from above
	Installation from below
	Installation from above or below
	Bottom attachment
	Number of notches
	Spring return
	Friction brake
	Mechanical interlock
	Surrounding temperature
	Switching cycles
	Max. voltage/Current
	Max. number of contacts each direction of movement
	Potentiometer, encoder, Hall
	Hall
	Bus systems
	Analog output, resistance
	Analog output, current (mA)
	Analog output, voltage (V)
	Illuminated
	Capacitive grip sensor
	Multiplexer system
	Palm rest
	Max. number of push buttons
	Deadman/Trigger
	Max. number of rocher switches
	Max. number of thumbwheels
	Handle, twistable
	Protected against explosion
	CE
	CCC
	UL
	CSA
	Guarantee

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