Joystick Switches

More than safety.

EUCHNER

More than safety.

Emil Euchner, the company's founder and inventor of the multiple limit switch, circa 1928.

Around the world – the Swabian specialists in motion sequence control for mechanical and systems engineering.

EUCHNER's history began in 1940 with the establishment of an engineering office by Emil Euchner. Since that time, EUCHNER has been involved in the design and development of switchgear for controlling a wide variety of motion sequences in mechanical and systems engineering. In 1953, Emil Euchner founded EUCHNER + Co., a milestone in the company's history. In 1952, he developed the first multiple limit switch – to this day a symbol of the enterprising spirit of this family-owned company.

Automation – Safety – ManMachine

Today, our products range from electromechanical and electronic components to complex system solutions. With this wide range of products we can provide the necessary technologies to offer the right solution for special requirements – regardless of whether these relate to reliable and precise positioning or to components and systems for safety engineering in the automation sector.
EUCHNER products are sold through a world-wide sales network of competent partners. With our closeness to the customer and the guarantee of reliable solutions throughout the globe, we enjoy the confidence of customers all over the world.

Quality, reliability, precision

Quality, reliability and precision are the hallmarks of our corporate philosophy. They represent concepts and values to which we feel totally committed.
At EUCHNER, quality means that all our employees take personal responsibility for the company as a whole and, in particular, for their own field of work. This individual commitment to perfection results in products which are ideally tailored to the customers' needs and the requirements of the market. After all: our customers and their needs are the focus of all our efforts. Through efficient and effective use of resources, the promotion of personal initiative and courage in finding unusual solutions to the benefit of our customers, we ensure a high level of customer satisfaction. We familiarize ourselves with their needs, requirements and products and we learn from the experiences of our customers' own customers.

EUCHNER – More than safety.

Quality – made by EUCHNER

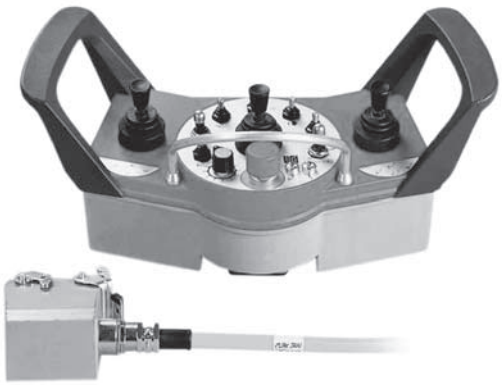
Table of contents

Joystick switches

Application

Joystick switches or joysticks are manually actuated control devices for installation in control and front panels as well as in portable control equipment. They are used wherever motion sequences analogous to the actuation direction are controlled by hand. They are ideal for raising, lowering and triggering movements to the right and left, just to name same few possibilities.
EUCHNER joysticks are used in the steel and construction industry, in machine tools, for transport and conveyor systems, in the system and mechanical engineering sectors and for warehousing, medical and studio technology. With the GL (Germanischer Lloyd) certification, the devices are approved for use in the ship-building industry.
EUCHNER joysticks are also used for radio and cable controls, building machinery and cranes.

Joysticks as control equipment in remote control devices


Remote cable control for concrete pumps

Design and function

Microswitches with a step function response are used as switching elements. Due to the intermittent control, a clear switching function is given for precise control systems. Depending on the respective application, switching elements with a power rating of between 4mA and 16A can be used. These are fixed on the mounting plate for each different series, either individually or in groups. The switching elements are actuated by the joystick being moved out of the intermediate position. The robust levers made of stainless steel are bedded with a hinged ball bearing that is fixed in a front plate.

Advantages/features

Direction of movement:

- Simplification of the command control station
- Easy mounting due to the slots in the panel
- Small space requirement
- Long service life
- Robust and lasting construction
- High potection class: IP 65 and beyond

Models

EUCHNER joystick switches are available in a number of different models:

Series WK...
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Series WE...
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Series KB...
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Series KF...
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Series KE...
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Series KC...
(page 16)

Series KP...
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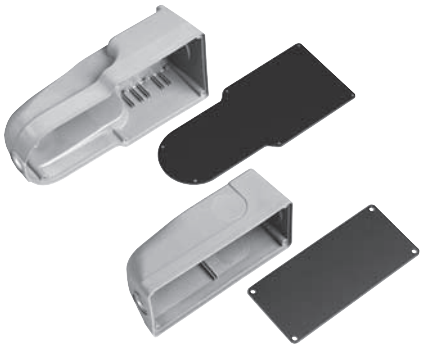


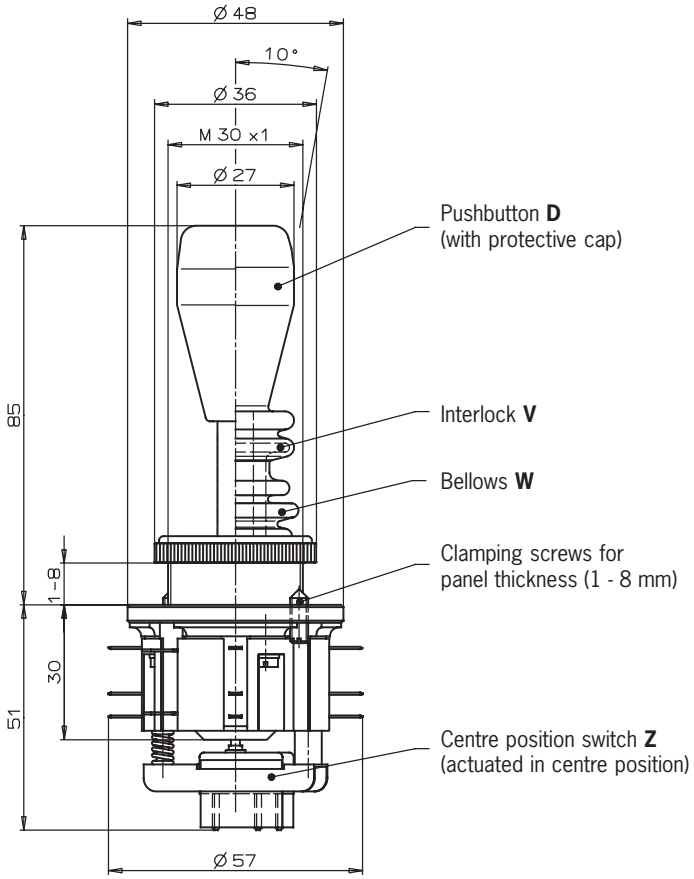
Housing kits
(from page 22)
suitable for series
WK, KB, KE
and KF

Series WK...

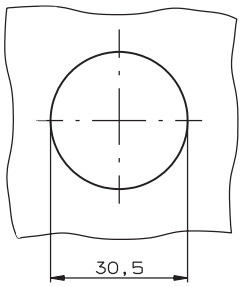
Germanischer Lloyd
Certificate no. 17 041 - 00 HH

- **Control panel installation to IEC 947-5-1 D30**
- **1 to 8 actuating directions with spring return operation or combined**
- **One changeover contact with tab connector 2.8 x 0.5 IEC 760 for each actuating direction**
- **Centre position switch**
- **Pushbutton in handle**

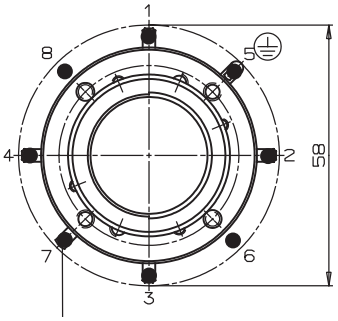
Dimension drawing



Panel cutout



Actuating directions



Connection **D**
(the connection is located on the underside for types with 8 directions)

Ordering code

W	K		

Series

Actuating direction and switching behavior

Stayput switch	**S**	(switching lever latches in selected position)
Spring return switch	**T**	(switching lever returns to centre position)

Options

Pushbutton	**D**
Bellows	**W**
Interlock	**V**
Centre position switch	**Z**
All-round actuation	**R**

Technical data

Parameters	Value	Unit
Housing material	glass-fibre reinforced thermoplastic / aluminum	
Switching lever material	stainless steel	
Degree of protection to IEC 529 on actuating side with / without bellows	IP65 / IP54	
Mounting method	IEC 947-5-1 D30	
Weight	approx. 0.17	kg
Mechanical life	$1x10^6$ switching cycles	
Ambient temperature with spring return switch	-5 to +65	°C
Ambient temperature with stayput switch	-25 to +65	°C
Max. number of switching elements	8	
Connection type	tab connector 2.8 x 0.5 IEC 760	
Contact elements	changeover contact C IEC 947-5-1	
Switching principle	snap-action switch, type ES 584	
Rated insulation voltage U_i	250	V
Rated impulse withstand voltage U_{imp}	2.5	kV
Utilization category AC 15	230 V / 4 A	
Utilization category DC 13	24 V / 2 A	
Min. switching current at 24 V	12	mA
Min. switching voltage	10	V
Contact material	silver alloy, gold on request	
Short circuit protection (control circuit fuse)	slow-blow T6 / quick-blow F10	A
Max. number of actuating directions	8	
All-round actuation R (spring return switch only)	actuation of 1 switching element (vertical or horizontal) or 2 adjacent switching elements (diagonal) simultaneously, with 8 microswitches *	
Switching positions per direction	1	
Stayput switch S (latching)	according to type designation	
Spring return switch T	according to type designation	
Bellows W	Option	
Interlock V in centre position	Option	
Centre position switch Z	Option	
Pushbutton D	Option	
Degree of protection to IEC 529	IP65	
Electrical life	$5x10^4$ switching cycles at 0.7 A / 250 V AC	
Switching element	1 x NO contact	
Utilization category AC 15	230 V / 2 A	
Utilization category DC 13	24 V / 1 A	
Min. switching current at 24 V	12	mA
Min. switching voltage	10	V
Actuating force	< 8	N
Actuating travel	approx. 3	mm

Ordering examples:

Joystick switch series **WK**, actuating directions **1**+**3** stayput switch **S**, actuating directions **2**+**4** spring return switch **T**, Pushbutton **D**, centre position switch **Z**, Interlock **V** in centre position — **WK S13 T24 DZV**

Joystick switch series **WK**, 8 switching elements as spring return switches, all-round actuation **R** — **WK T1-8 R**

Design

Joystick switch series **WK**, 4 switching elements, 2 actuating directions (2 switching elements per actuating direction) — **on request**

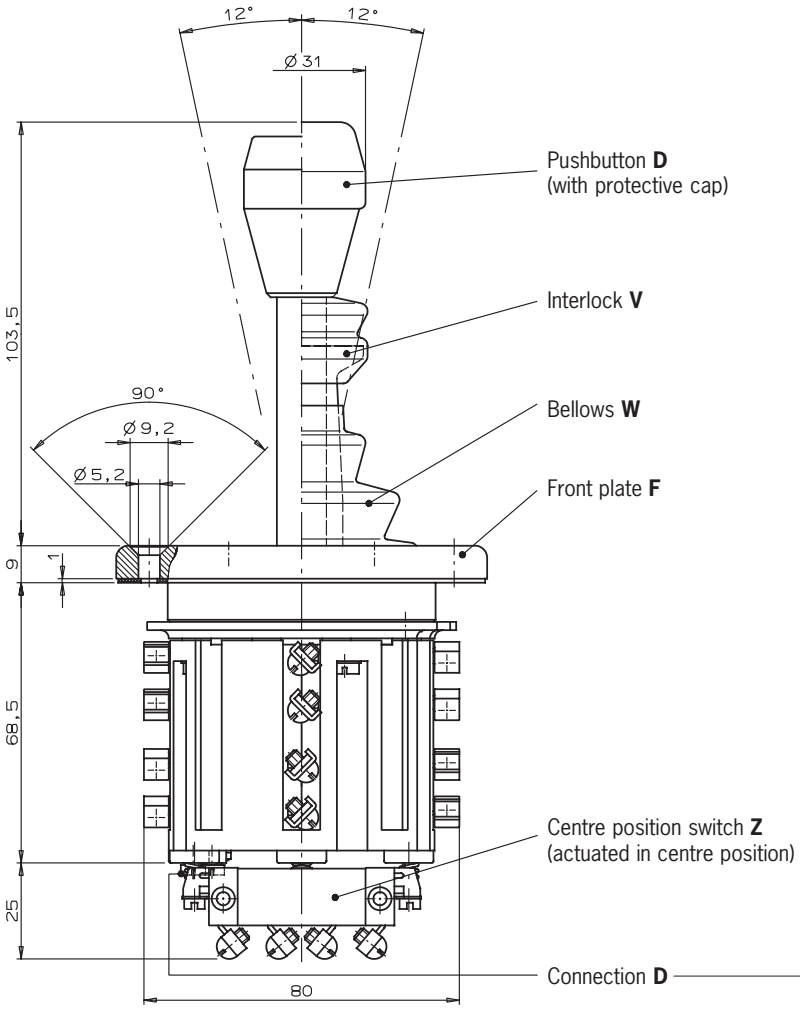
* Diagonal actuation of 4 adjacent switching elements is on request.

Series WE...

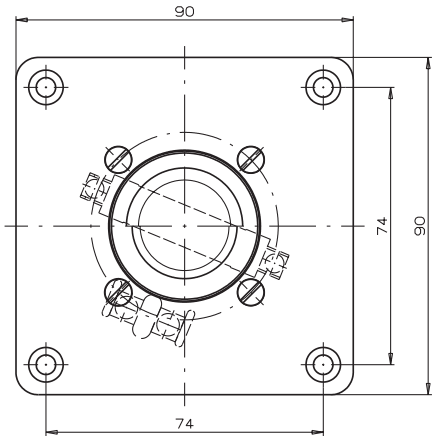
Germanischer Lloyd
Certificate no. 17 041 - 00 HH

- **Control panel installation at rear or with front plate**
- **1 to 8 actuating directions with stayput or spring return operation or combined**
- **One changeover contact with screw terminal for each actuating direction**
- **Centre position switch**
- **Pushbutton in handle**

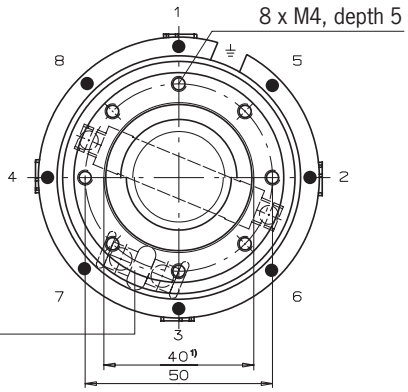
Dimension drawing



Front plate



Control panel installation and actuating directions



Ordering code

W	E		

Series

Actuating direction and switching behavior

Stayput switch	**S**	(switching lever latches in selected position)
Spring return switch	**T**	(switching lever returns to centre position)

Options

Pushbutton	**D**
Bellows	**W**
Interlock	**V**
Centre position switch	**Z**
All-round actuation	**R**
Front plate	**F**

Technical data

Parameters	Value	Unit
Housing material	glass-fibre reinforced thermoplastic / aluminum	
Switching lever material	galvanized steel	
Degree of protection to IEC 529 on actuating side with / without bellows	IP65 / IP54	
Mounting method	control panel installation at rear or with front plate	
Weight	approx. 0.65	kg
Mechanical life	$1x10^6$ switching cycles	
Ambient temperature with spring return switch	-5 to +65	°C
Ambient temperature with stayput switch	-25 to +65	°C
Max. number of switching elements	8	
Connection type	screw terminal	
Contact elements	changeover contact Za IEC 947-5-1	
Switching principle	snap-action switch, type ES 502V1	
Rated insulation voltage U_i	250	V
Rated impulse withstand voltage U_{imp}	2.5	kV
Utilization category AC 15	230 V / 10 A	
Utilization category DC 13	24 V / 4 A	
Min. switching current at 24 V	50	mA
Min. switching voltage	24	V
Contact material	silver alloy	
Short circuit protection (control circuit fuse)	slow-blow T16 / quick-blow F25	A
Max. number of actuating directions	8	
All-round actuation R (spring return switch only)	1 switching element is actuated per actuating direction	
Switching positions per direction	1	
Stayput switch S (latching)	according to type designation	
Spring return switch T	according to type designation	
Bellows W	Option	
Interlock V in centre position	Option	
Centre position switch Z	Option	
Pushbutton D	Option	
Degree of protection to IEC 529	IP65	
Electrical life	$5x10^4$ switching cycles at 0.7 A / 250 V AC	
Switching element	1 x NO contact	
Utilization category AC 15	230 V / 2 A	
Utilization category DC 13	24 V / 1 A	
Min. switching current at 24 V	12	mA
Min. switching voltage	10	V
Actuating force	< 8	N
Actuating travel	approx. 3	mm

Ordering examples:

Joystick switch series **WE**, actuating directions **1**+**3** stayput switch **S**, actuating directions **2**+**4** spring return switch **T**, Pushbutton **D**, centre position switch **Z**, Interlock **V** in centre position — **WE S13 T24 DZV**

Joystick switch series **WE**, 8 switching elements as spring return switches, all-round actuation **R** — **WE T1-8 R**

Design

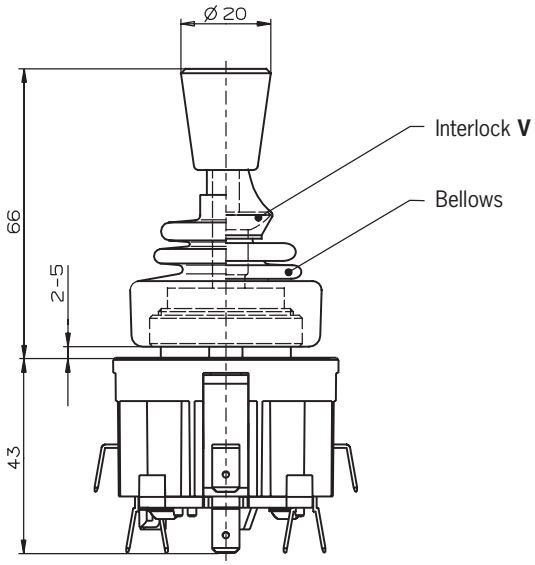
Joystick switch series **WE**, 4 switching elements, 2 actuating directions (2 switching elements per actuating direction) — **on request**

Series KB...

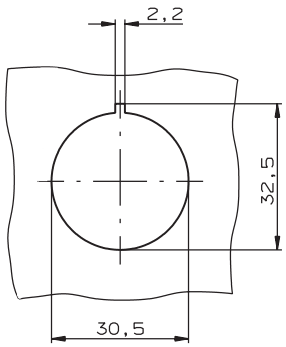
Germanischer Lloyd
Certificate no. 17 041 - 00 HH

- **Control panel installation to IEC 947-5-1 D30**
- **1 to 8 actuating directions, 4 switching elements. With stayput or spring return operation or combined**
- **One changeover contact with tab connector 6.3 x 0.8 IEC 760 for each actuating direction**

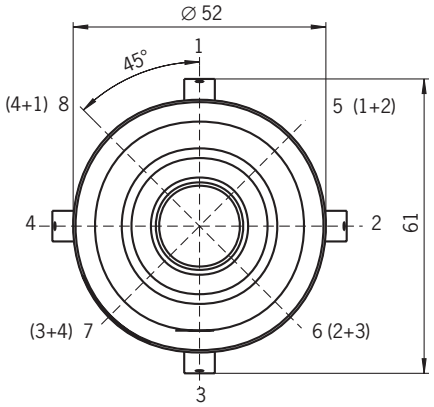
Dimension drawing



Panel cutout



Actuating directions



Ordering code

K	B		

Series

Actuating direction and switching behavior

Stayput switch	**S**	(switching lever latches in selected position)
Spring return switch	**T**	(switching lever returns to centre position)

Options

Interlock	**V**
All-round actuation	**R** [1]

1) Simultaneous actuation of 2 adjacent switching elements in diagonal actuating directions.

Technical data

Parameters		Value	Unit
Housing material		Thermoset	
Switching lever material		stainless steel	
Degree of protection to IEC 529 on actuating side with bellows		IP65	
Mounting method		IEC 947-5-1 D30	
Weight		approx. 0.2	kg
Mechanical life	spring return switch	$2x10^6$ switching cycles	
	stayput switch	$1x10^6$ switching cycles	
Ambient temperature with spring return switch		-5 to +65	°C
Ambient temperature with stayput switch		-25 to +65	°C
Max number of switching elements		4	
Connection type		tab connector 6.3 x 0.8 screw terminal on request	IEC 760
Contact elements		changeover contact C IEC 947-5-1	
Switching principle		snap-action switch, type ES 517 A	
Rated insulation voltage U_i		250	V
Rated impulse withstand voltage U_{imp}		2.5	kV
Utilization category AC 15		230 V / 5 A	
Utilization category DC 13		24 V / 3 A	
Min. switching current at 24 V		10	mA
Min. switching voltage		12	V
Contact material		silver alloy	
Short circuit protection (control circuit fuse)		T10 / F20	A
Max. number of actuating directions		8	
All-round actuation R (spring return switch only)		actuation of 1 switching element (vertical or horizontal) or 2 adjacent switching elements (diagonal) simultaneously	
Switching positions per direction		1	
Stayput switch S (latching)		according to type designation	
Spring return switch T		according to type designation	
Interlock V in centre position		Option	

Ordering examples:

Joystick switch series **KB**, actuating directions **1**+**3** stayput switch **S**, actuating directions **2**+**4** spring return switch **T** — **KB S13 T24**

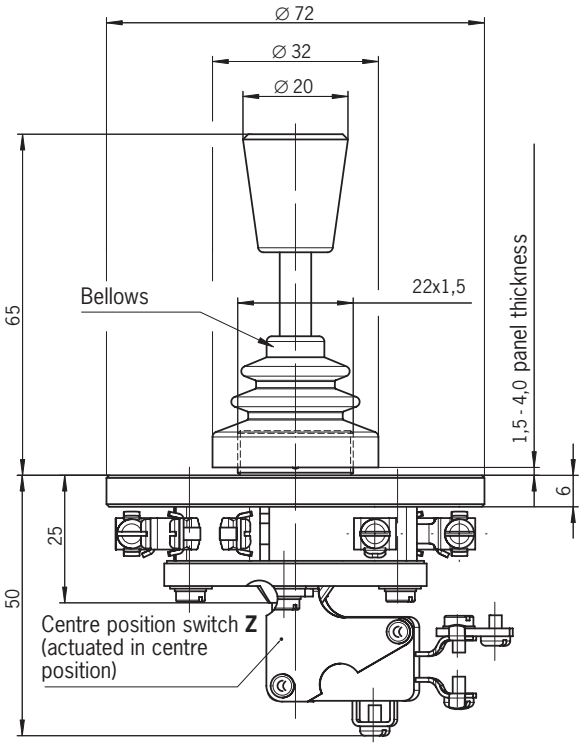
Joystick switch series **KB**, actuating directions **1**+**3** spring return switch **T**, Interlock **V** in centre position — **KB T13 V**

Series KF...

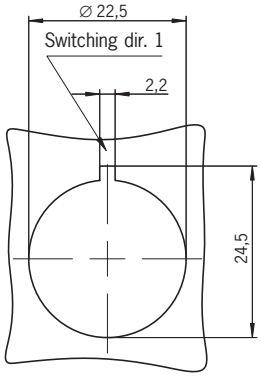
Germanischer Lloyd
Certificate no. 17 041 - 00 HH

- **Control panel installation at rear**
- **1 to 8 actuating directions, 4 switching elements. With stayput or spring return operation or combined**
- **One changeover contact with screw terminal for each actuating direction**
- **Centre position switch**

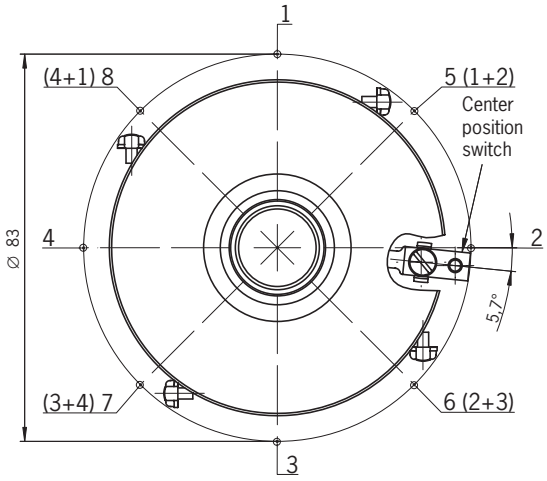
Dimension drawing



Panel cutout



Actuating directions



Ordering code

K	F		

Series

Actuating direction and switching behavior

Stayput switch	**S**	(switching lever latches in selected position)
Spring return switch	**T**	(switching lever returns to centre position)

Options

Centre position switch	**Z**
All-round actuation	**R** [1]

1) Simultaneous actuation of 2 adjacent switching elements in diagonal actuating directions.

Technical data

Parameters	Value	Unit
Housing material	Thermoset	
Switching lever material	stainless steel	
Degree of protection to IEC 529 on actuating side with bellows	IP65	
Mounting method	panel installation at rear	
Weight	approx. 0.2	kg
Mechanical life	$1x10^6$ switching cycles	
Ambient temperature with spring return switch	-25 to +65	°C
Ambient temperature with stayput switch	-25 to +65	°C
Max. number of switching elements	4	
Connection type	screw terminal	
Contact elements	changeover contact C IEC 947-5-1	
Switching principle	snap-action switch, type ES 517	
Rated insulation voltage U_i	250	V
Rated impulse withstand voltage U_{imp}	2.5	kV
Utilization category AC 15	230 V / 5 A	
Utilization category DC 13	24 V / 3 A	
Min. switching current at 24 V	10	mA
Min. switching voltage	12	V
Contact material	silver alloy	
Short circuit protection (control circuit fuse)	slow-blow T10 / quick-blow F20	A
Max. number of actuating directions	8	
All-round actuation R	actuation of 1 switching element (vertical or horizontal) or 2 adjacent switching elements (diagonal) simultaneously	
Switching positions per direction	1	
Stayput switch S (latching)	according to type designation	
Spring return switch T	according to type designation	
Centre position switch Z	Option	

Ordering examples:

Joystick switch series **KF**, actuating directions **1**+**3** stayput switch **S**, actuating directions **2**+**4** spring return switch **T**, centre position switch **Z** — **KF S13 T24 Z**

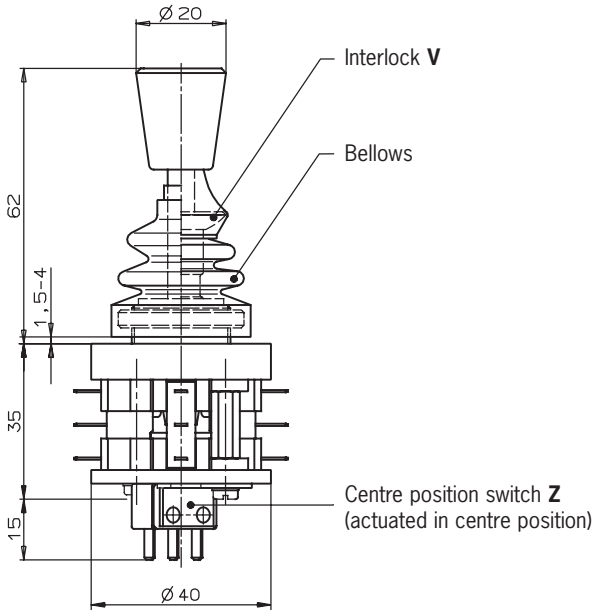
Joystick switch series **KF**, actuating directions **1**-**4** spring return switch **T**, all-round actuation **R** — **KF T1234 R**

Series KE...

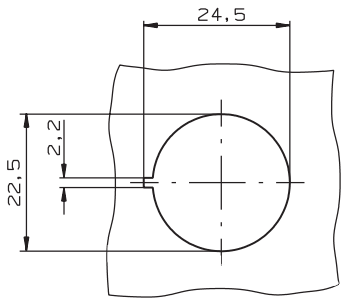
Germanischer Lloyd
Certificate no. 17 041 - 00 HH

- **Control panel installation to IEC 947-5-1 D22**
- **1 to 8 actuating directions, 4 switching elements. With stayput or spring return operation or combined**
- **One changeover contact with tab connector 2.8 x 0.5 IEC 760 for each actuating direction**
- **Centre position switch**

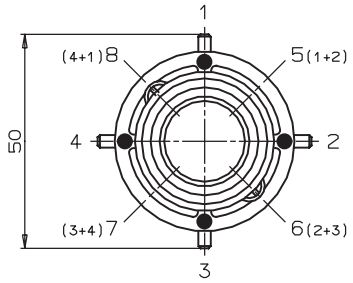
Dimension drawing



Panel cutout



Actuating directions



Ordering code

K	E		

Series

Actuating direction and switching behavior

Stayput switch	**S**	(switching lever latches in selected position)
Spring return switch	**T**	(switching lever returns to centre position)

Options

Interlock	**V**
Centre position switch	**Z**
All-round actuation	**R** [1]

1) Simultaneous actuation of 2 adjacent switching elements in diagonal actuating directions.

Technical data

Parameters	Value	Unit
Housing material	Thermoset	
Switching lever material	stainless steel	
Degree of protection to IEC 529 on actuating side with bellows	IP65	
Mounting method	IEC 947-5-1 D22	
Weight	approx. 0.1	kg
Mechanical life	$1x10^6$ switching cycles	
Ambient temperature with spring return switch	-25 to +65	°C
Ambient temperature with stayput switch	-25 to +65	°C
Max. number of switching elements	4	
Connection type	tab connector 2.8 x 0.5 IEC 760	
Contact elements	changeover contact C IEC 947-5-1	
Switching principle	snap-action switch, type ES 587	
Rated insulation voltage U_i	250	V
Rated impulse withstand voltage U_{imp}	2.5	kV
Utilization category AC 15	230 V / 4 A	
Utilization category DC 13	24 V / 2 A	
Min. switching current at 24 V	12	mA
Min. switching voltage	10	V
Contact material	silver alloy	
Short circuit protection (control circuit fuse)	slow-blow T10 / quick-blow F20	A
Max. number of actuating directions	8	
All-round actuation R	actuation of 1 switching element (vertical or horizontal) or 2 adjacent switching elements (diagonal) simultaneously	
Switching positions per direction	1	
Stayput switch S (latching)	according to type designation	
Spring return switch T	according to type designation	
Interlock V in centre position	Option	
Centre position switch Z	Option	

Ordering examples:

Joystick switch series **KE**, actuating directions **1**+**3** stayput switch **S**, actuating directions **2**+**4** spring return switch **T**, centre position switch **Z** — **KE S13 T24 Z**

Joystick switch series **KE**, actuating directions **1**+**3** spring return switch **T**, Interlock **V** in centre position — **KE T13 V**

Joystick switch series **KE**, actuating directions **1**-**4** Spring return switch **T**, all-round actuation **R** — **KE T1234 R**

Series KC...

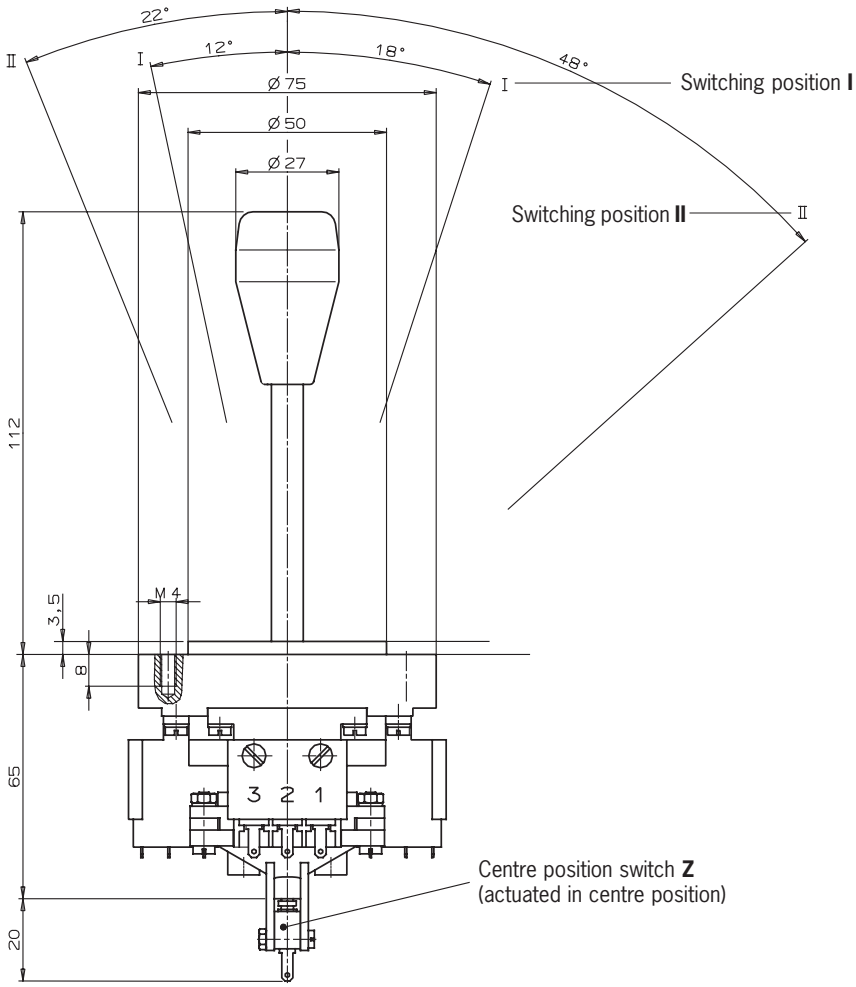
Germanischer Lloyd
Certificate no. 17 041 - 00 HH

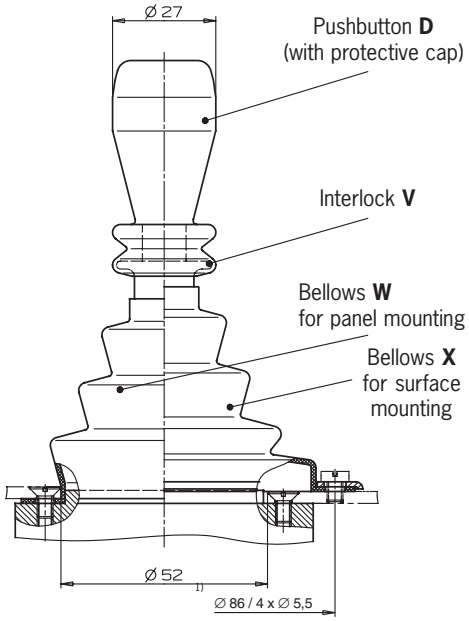
- **control panel installation at rear or with front plate**
- **1 to 8 actuating directions with 1 or 2 switching positions for each actuating direction**
- **Switching positions as stayput or spring return operation in various combinations**
- **Centre position switch**
- **Pushbutton in handle**

Dimension drawing

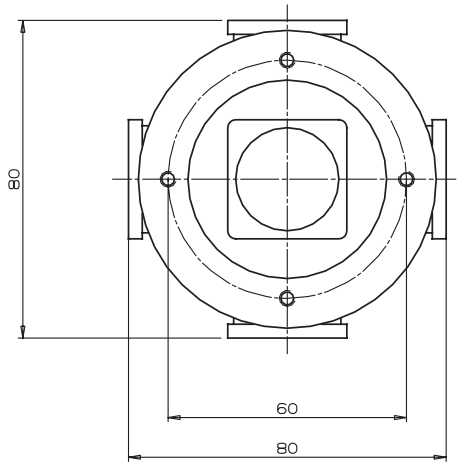
Main actuating directions
1, 2, 3 and **4**

Diagonal actuating directions
5, 6, 7 and **8**

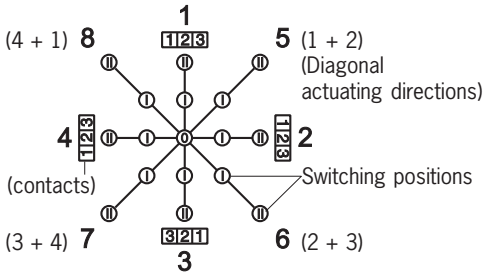




1) Panel cutout for assembly with bellows **W**



Actuating directions
Top view of actuating lever



Technical data

Parameters	Value	Unit
Housing material	glass-fibre reinforced thermoplastic / aluminum	
Switching lever material	galvanized steel	
Degree of protection to IEC 529 on actuating side with / without bellows	IP65 / IP50	
Mounting method	control panel installation at rear or with front plate	
Weight	approx. 0.75	kg
Mechanical life	$1x10^6$ switching cycles	
Ambient temperature with spring return switch	-5 to +65	°C
Ambient temperature with stayput switch	-25 to +65	°C
Max. number of switching elements	3 per direction	
Connection type	tab connector 2.8 x 0.5 IEC 760 (ES 584) screw terminal (ES 556)	
Contact elements	changeover contact C IEC 947-5-1	
Switching principle	snap-action switch, type ES 584 or ES 556	
Rated insulation voltage U_i	250	V
Rated impulse withstand voltage U_{imp}	2.5	kV
Utilization category AC 15	230 V / 4 A	
Utilization category DC 13	24 V / 2 A	
Min. switching current at 24 V	12	mA
Min. switching voltage	10	V
Contact material	silver alloy	
Short circuit protection (control circuit fuse)	slow-blow T6 / quick-blow F10	A
Max. number of actuating directions	8	
All-round actuation R (spring return switch only)	actuation of 1 switching element (vertical or horizontal) or 2 adjacent switching elements (diagonal) simultaneously	
Switching positions per direction	1 or 2	
Stayput switch S (latching)	according to type designation	
Spring return switch T	according to type designation	
Bellows W, X	Option	
Interlock V in centre position or position I	Option	
Centre position switch Z	Option	
Pushbutton D	Option	
Degree of protection to IEC 529	IP65	
Electrical life	$5x10^4$ switching cycles at 0.7 A / 250 V AC	
Contact elements	1 x NO contact	
Utilization category AC 15	230 V / 2 A	
Utilization category DC 13	24 V / 1 A	
Min. switching current at 24 V	12	mA
Min. switching voltage	10	V
Actuating force	< 8	N
Actuating travel	approx. 3	mm

Ordering examples: (see type code on page 18)

Joystick switch series **KC** with tab connector, main actuating direction 1 with 3 switching elements. As spring return switch in switching position I. As stayput switch in switching position II. Main actuating directions 2 and 4 with 2 switching elements each. As stayput switch in switching positions I and II. Main actuating direction 3 not used. Option **V1** (mech. interlock from switching position I to switching position II) **KCA3A5C005C0000V1**

Joystick switch series **KC** with screw terminal, main actuating directions **1**-**4** as stayput switch. **S** with one switching element each, diagonal actuating directions **5**-**8**, Pushbutton **D**, bellows **W** for panel mounting. **KCB4E4E4E4E5678DW**

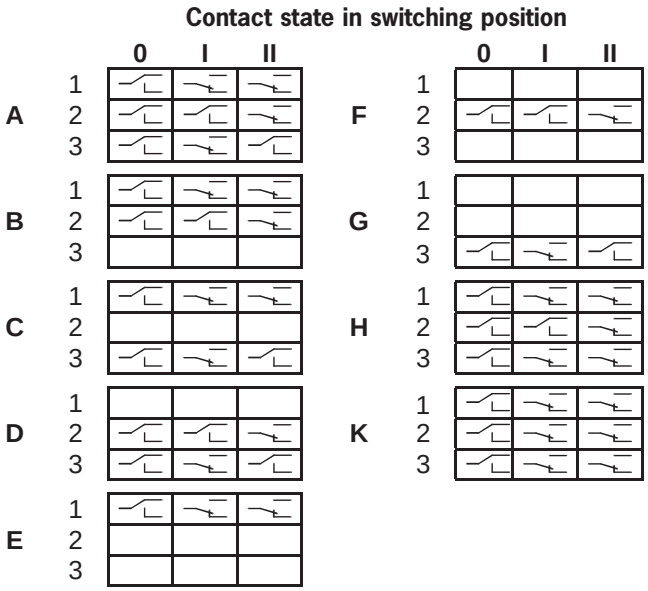
Series KC...

Switching behavior [1)]

● Stayput switch (switching lever latches in selected position)
⊕ Spring return switch (switching lever returns to initial position)

Ordering code	Switching position I	Switching position II
1	⊕	-
2	⊕	⊕
3	⊕	●
4	●	-
5	●	●
6	●	⊕

Switching functions [2)]



Ordering code

Series

Connection type
Tab connector 2.8 x 0.5 IEC 760 **A**
Screw terminal **B**

Main actuating direction 1
Switching behavior [1)]
Switching function [2)]

Main actuating direction 2
Switching behavior [1)]
Switching function [2)]

Main actuating direction 3
Switching behavior [1)]
Switching function [2)]

Main actuating direction 4
Switching behavior [1)]
Switching function [2)]

Diagonal actuating direction 5 [3)]
Diagonal actuating direction 6 [3)]
Diagonal actuating direction 7 [3)]
Diagonal actuating direction 8 [3)]

Options

Pushbutton in handle	**D**
Bellows for panel mounting	**W**
Bellows for surface mounting	**X**
Interlock switching position 0	**V0**
Interlock switching position I to II	**V1**
Centre position switch	**Z**
All-round actuation	**R**

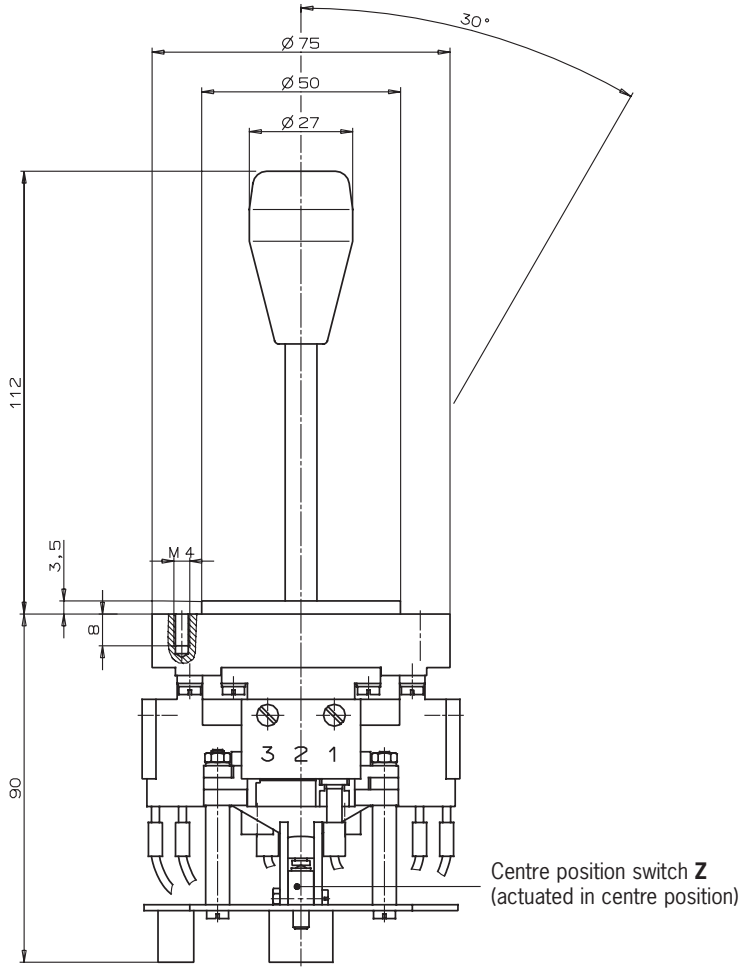
1) See „Switching behavior“ table. Actuating directions which are not required must be marked with „0“.
2) See „Switching functions“ table.
3) Simultaneous actuation of 2 adjacent switching elements in diagonal actuating directions.

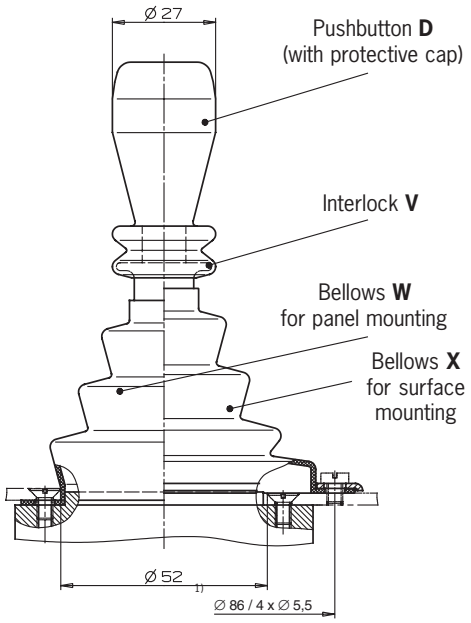
Series KP...

Analog Joystick

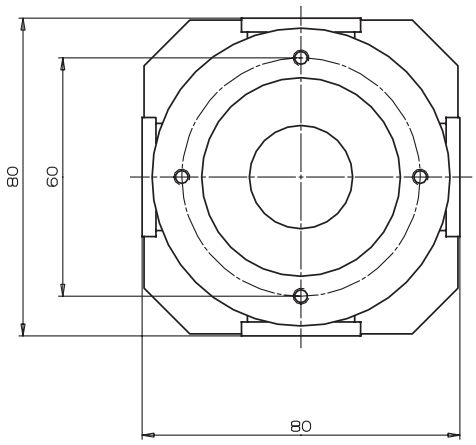
- **control panel installation at rear or with front plate**
- **Analog, proportional output signals**
- **Control variants with 1 and 2 axes or 2 axes simultaneously**
- **Centre position switch**
- **Pushbutton in handle**

Dimension drawing



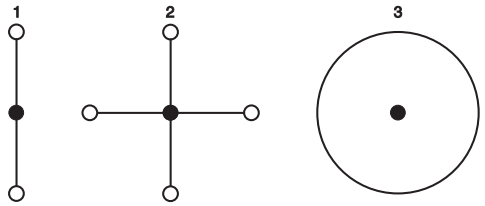


1) Panel cutout for assembly with bellows **W**



Control versions

Versions 1 = 1 axis
Versions 2 = 2 axes
Versions 3 = 2 axes simultaneously (only spring return version)



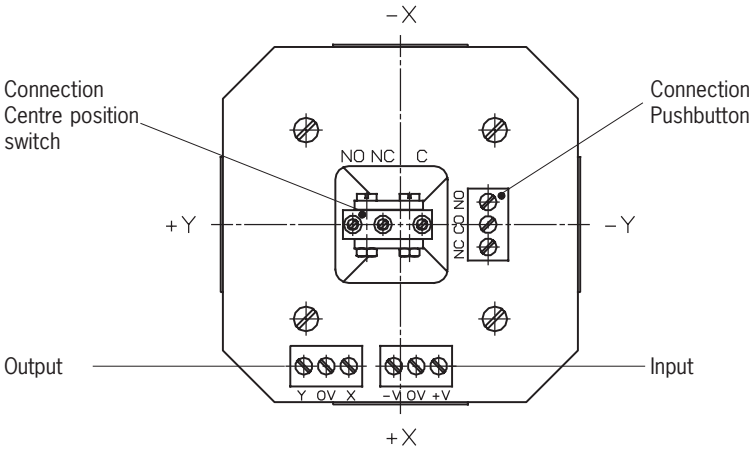
Technical data

Parameters	Value	Unit
Housing material	glass-fibre reinforced thermoplastic / aluminum	
Switching lever material	galvanized steel	
Degree of protection to IEC 529 on actuating side with / without bellows	IP65 / IP50	
Mounting method	control panel installation at rear or with front plate	
Weight	approx. 0.75	kg
Mechanical life	$1x10^6$ switching cycles	
Ambient temperature with spring return switch	-5 to +65	°C
Ambient temperature with stayput switch	-25 to +65	°C
Max. number of switching elements	1 per direction	
Connection type	screw terminal on PC board	
Contact elements	changeover contact C IEC 947-5-1	
Switching principle	snap-action switch	
Rated insulation voltage U_i	50	V
Contact material	silver alloy	
Input voltage of resistance element	± 18	V=
Output voltage of resistance element	± 10	V=
Max. number of actuating directions	1 axis, 2 axes or 2 axes simultaneously	
Stayput switch S (latching)	according to type designation	
Spring return switch T	according to type designation	
Bellows W, X	Option	
Interlock V in centre position	Option	
Centre position switch Z	Option	
Pushbutton D	Option	
Degree of protection to IEC 529	IP65	
Electrical life	$5x10^4$ switching cycles at 0.7 A / 250 V AC	
Contact elements	1 x NO contact	
Utilization category AC 15	230 V / 2 A	
Utilization category DC 13	24 V / 1 A	
Min. switching current at 24 V	12	mA
Min. switching voltage	10	V
Actuating force	< 8	N
Actuating travel	approx. 3	mm

Series KP...

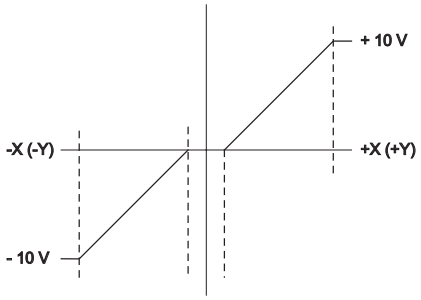
Analog Joystick

Pin assignment



Output

Terminal	Signal
Y	± 10 V, 10 mA
0 V	0 V (GND)
X	± 10 V, 10 mA



Input

Terminal	Signal
- V	-18 V
0 V	0 V (GND)
+ V	+18 V

Ordering code

K	P			

Series

Control variants

1 axis	**1**
2 axes	**2**
2 axes simultaneously	**3**

End position

Stayput switch	**S**
Spring return switch	**T**

Options

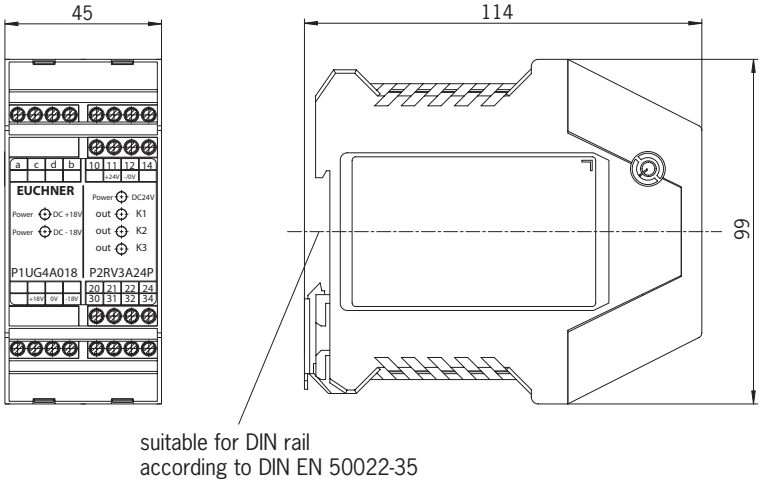
Pushbutton	**D**
Bellows for panel mounting	**W**
Bellows for surface mounting	**X**
Interlock	**V**
Centre position switch	**Z**

Ordering example:

Analog Joystick series **KP** for **2**-axis control, limit position spring return switch **T**, mechanical interlock, **V** in zero position, bellows **W** for panel mounting, centre position switch **Z** in switching position zero

KP 2 TVWZ

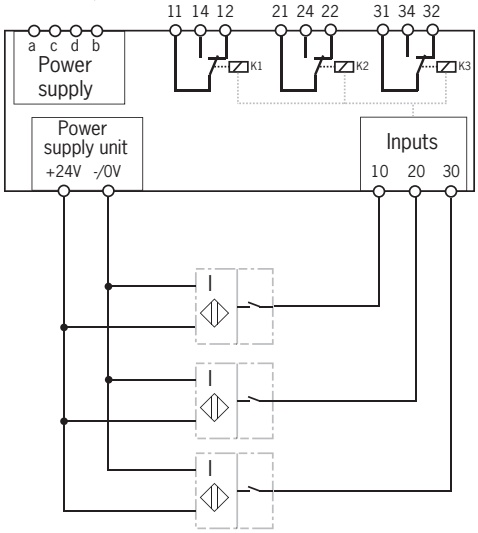
Universal Power Suply Unit P1/P2 Order No. 096 645



The universal power supply unit P1/P2 comprises the unit P1UG4A018 (P1) for the supply of the EUCHNER series KP joystick.
The unit P2RV3A24P (P2) is used as a switch amplifier for the connection of three inductive proximity switches or single hole fixing limit switches. In addition, it can also be used as a simple power supply. The units can be operated separately or together.

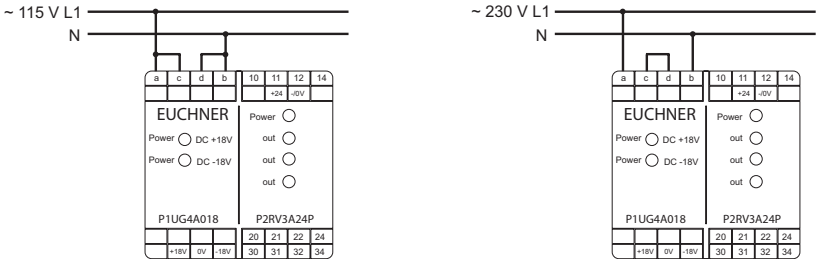
Use as switch amplifier

(connection example with inductive proximity switches)



Connection to power supply

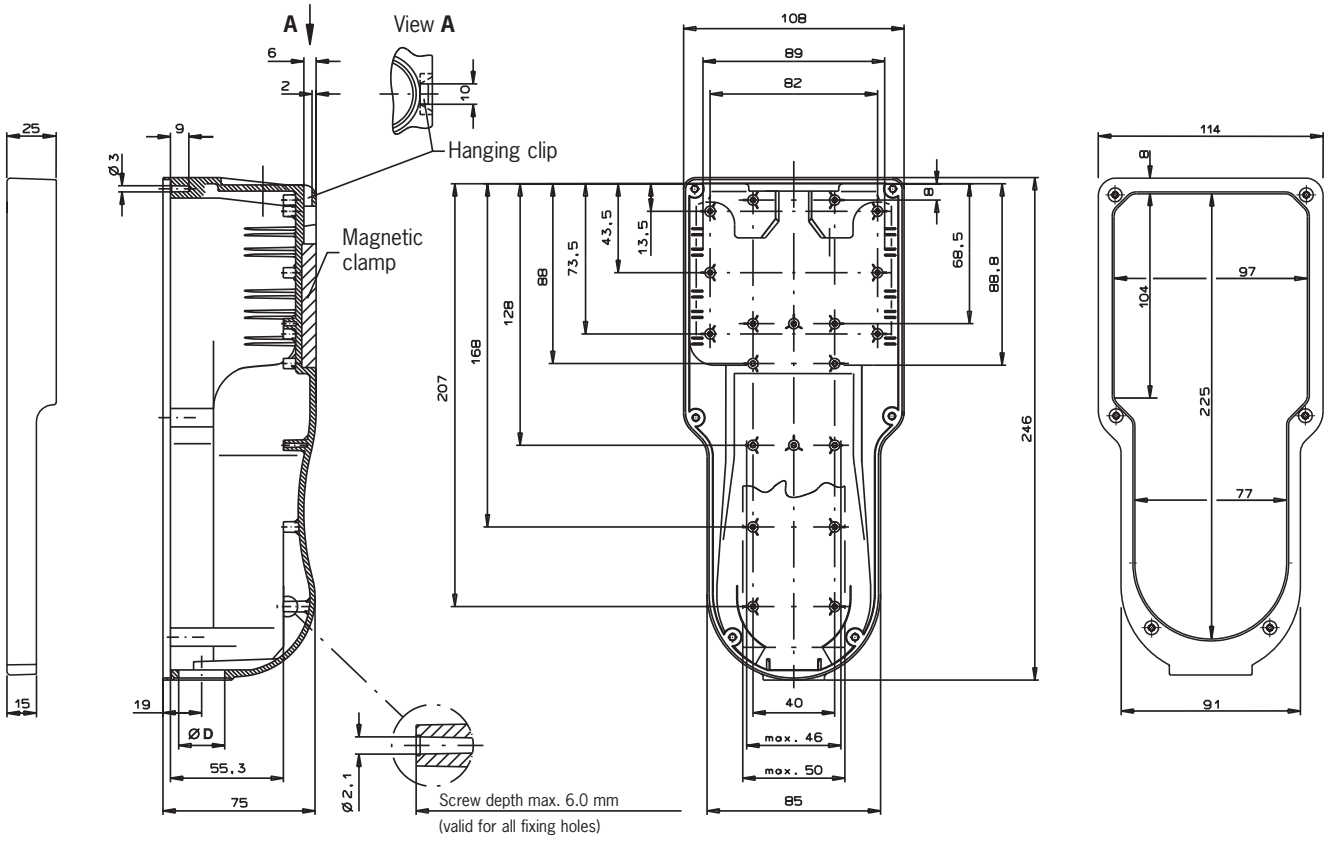
with AC 115 V or AC 230 V



Parameter	Value	Unit
Housing material	Polyamide PA6.6	
Degree of protection acc. to EN/IEC 60529	IP 20	
Ambient temperature at U_B = DC 24 V	-15 ... +55	°C
Storage temperature	- 25 ... +70	°C
Degree of contamination (external)	2 (acc. to EN 60947)	
Material roup	II	
Mounting	DIN rail 35 mm according to DIN EN 50022-35	
Weight	0.4	kg
Connection type	Connection terminals	
Conductor cross-section	0.14 ... 2.5	mm^2
Primary voltage	AC 115 V ± 10 % AC 230 V ± 10 %	
Line requency	50 ... 60	Hz
External fuse (transformer, electrically isolated)	2 x 160 mA, slow blow	
Max. power consumption, P1 and P2 together	5.4	VA
P1UG4A018		
Output voltage, regulated	DC -18 V and DC +18 V	
Load current I_{max}	50	mA
Power consumption	5.4	VA
P2RV3A24P		
Control circuit voltage at I_{max} I (nominal current)	 24 30	 DC V DC V
Power consumption	2.7	VA
Control current I_{max}	70	mA
Output contacts	3 NC 3 NO	
Max. switching voltage	250	AC/DC V
Max switching current	4	A
Breaking capacity AC DC	 500 50	 VA W

Housing HBL

Dimension drawing



Note

- 2 versions for different cable glands

Design	Ø D
PG 11	19
PG 13.5	20.8

Technical data

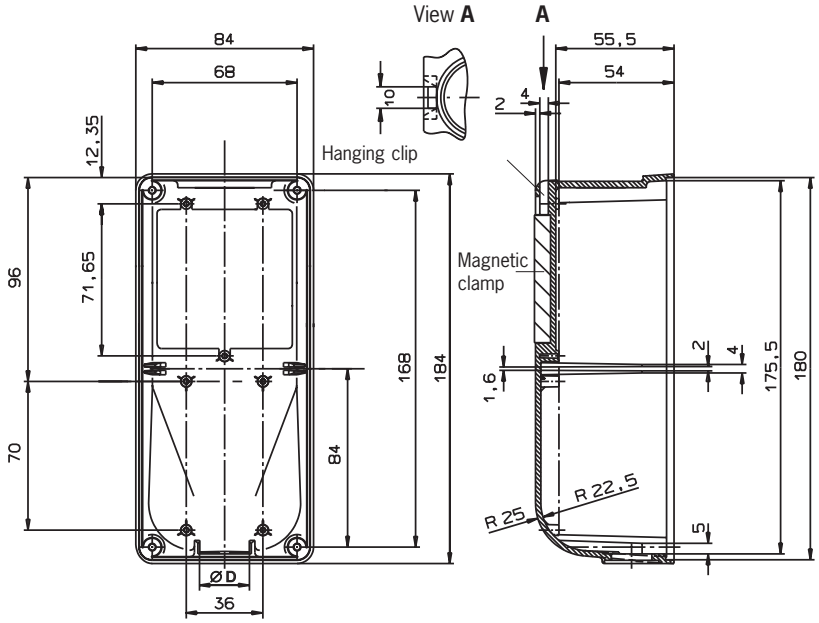
Parameters	Value	Unit
Housing HBL		
Material	Polyamide	
Color	blue-grey RAL 7031	
Ambient temperature	0 to +55	°C
Degree of protection to EN 60529	to IP 65	
Weight	approx. 0.4	kg

Ordering table

Design	Type designation	Order No.
PG 11	Housing HBL, with magnetic clamp, hanging clip, fixing nut for heavy gauge cable gland PG 11, 6 screws for front plate attachment, cover frame	073 098
PG 13.5	Housing HBL, with magnetic clamp, hanging clip, fixing nut for heavy gauge cable gland PG 13.5, 6 screws for front plate attachment, cover frame	072 630

Housing HBE

Dimension drawing



Notes

- 2 versions for different cable glands

Design	Ø D
PG 11	19
PG 13.5	20.8

Technical data

Parameters	Value	Unit
Housing HBE		
Material	Polyamide	
Color	blue-grey RAL 7031	
Ambient temperature	0 to +55	°C
Degree of protection to EN 60529	to IP 65	
Weight	0.3	kg

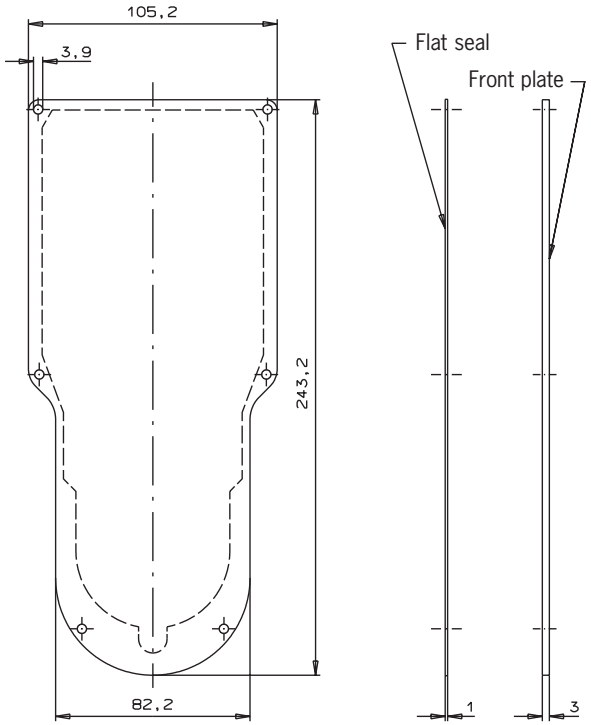
Ordering table

Design	Type designation	Order No.
PG 11	Housing HBE, with magnetic clamp, hanging clip, fixing nut for heavy gauge cable gland PG 11, 4 screws for front plate attachment	048 429
PG 13.5	Housing HBE, with magnetic clamp, hanging clip, fixing nut for heavy gauge cable gland PG 13.5, 4 screws for front plate attachment	072 626

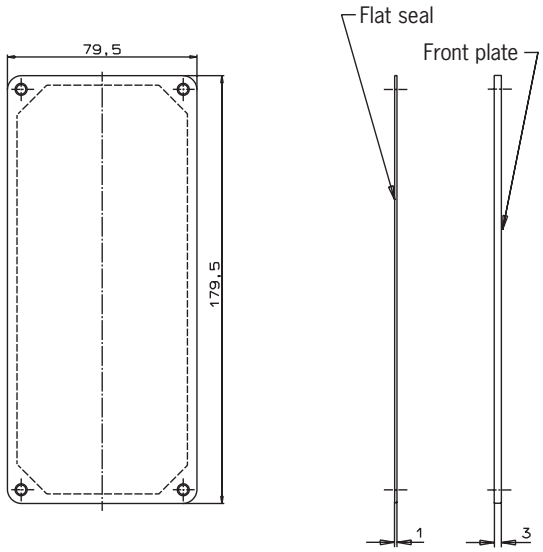
Front plates for housing HBL and HBE

Dimension drawing

Front plates HBL



Front plates HBE



Technical data

	Material	
Material front plate	electro-anodized aluminum, black	
Material seal	NBR, self-adhesive on one side	

Ordering table

Type designation	Order No.
Front plate for HBL housing, with seal	055 967
Front plate for HBE housing, with seal	052 954