Hand-Held Pendant Stations/ Handwheels





More than safety.



More than safety.

Jan Strange



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 familyowned 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

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Quality, reliability and precision are the hallmarks of our corporate philosophy. They represent concepts and values to which we feel totally committed. At EUCHNER, guality 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

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About this catalog

The Hand-held Pendant Stations/ Handwheels catalog provides you with an overview of our HBA and HBL series hand-held pendant stations as well as of our series HK and HW handwheels.

Due to their precision, their ergonomic design and their robustness, these switches are the right choice for numerous applications. You will find the technical data after the product overview.

You will find the following series and accessories in this catalog:

	Hand-Held Pendant Stations / Handwheels									
	Hand-H	eld Pendant	Stations				Handv	vheels		
Complete	Complete Devices		Acces- sories	Acces- sories Holder		Handwheels with Magnetic Detent Mechanism			eels with al Detent anism	Acces- sories
HBA	HBL				НКВ	нкс	HKD	HWA	HWB	
see page 10	see page 20	see page 25	see page 35	see page 48	see page 52	see page 54	see page 56	see page 58	see page 60	see page 62

How can I find the right product?

There are two ways you can find the right product:

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- If you know the order number or the item designation, look for the product directly in the item index (see page 68 or page 70).
- If you have specific requirements, refine the selection step-by-step with the aid of the table of contents and the selection tables.



Standards and approvals

Standards

Hand-held pendant stations must comply with the requirements of the EMC directive 2004/108/EEC. The EMC directive has been implemented in national law in the EU member states and, as a result, is binding for all manufacturers. Detailed requirements on EMC are defined in EN 61000 (Electromagnetic compatibility (EMC)) part 6-2 and 6-4. If the requirements of this standard are met, conformity with the applicable laws and therefore with the EMC directive is assumed. EUCHNER hand-held pendant stations comply with the relevant standards and therefore help you to comply with the requirements during the design of your machinery.

Approvals

Many of the hand-held pendant stations given in this catalog are listed by Underwriters Laboratories (UL). The approval symbols on the individual pages of the catalog indicate which devices are approved. This is the UL approval symbol:



Products with this symbol are approved by Underwriters Laboratories (UL, Canada and USA)



Function and technology used in hand-held pendant stations

The most important machine functions can be monitored, e.g. axis selection and axis movement can be controlled decentrally using handheld pendant stations. The freedom of movement of the machine operator is increased and the operator can monitor and control processes without being tied to a fixed control panel.

In addition to the control function, hand-held pendant stations can also have a safety function. For this purpose the hand-held pendant stations are equipped with emergency stop buttons and enabling switches.

Hand-held pendant stations with enabling function

Hand-held pendant stations with enabling function are essentially similar to classic enabling switches.

Enabling switches are manually operated control devices that, together with other control switches, enable commands related to potentially hazardous conditions to be run, as long as the enabling switches are actuated continuously. These switches are used wherever personnel must work directly in the danger area on machines and systems. This is necessary, e. g. during setting up, programming, testing or servicing work. As per annex 1 of the Machinery directive, the protective action of movable safety guards can be disabled in these operating modes. The Machinery directive places the condition that these operating modes must be secured using a lockable device (e. g. key-operated switch) and machine operation is only allowed to be triggered by a second, separate action. To enable the operator in the danger area of a machine to trigger a machine movement, an enabling device should also be actuated.

The operator must also be able to stop the machine movement using the enabling device. This task is performed by the enabling switch. Every person who is in the hazardous area must carry an enabling device so that suitable action can be taken in case of danger.

Two-stage pushbutton or three-stage enabling switch?

The operator can only start a machine movement if he/she actuates the enabling device and keeps it in the actuated position. The movement is stopped again when the switch is released. This two-stage function (OFF-ON) is provided by all pushbuttons and all three-stage enabling switches. However, experience shows that the operator often clenches the enabling device in an emergency.

In this case a three-stage enabling switch is better and is specifically requested in many C standards. This switch has three switch positions (OFF-ON-OFF) and, if the operator clenches the switch, it is actuated beyond the enabling position (middle position) and the machine is shut down as a result.

If a 2-stage pushbutton is used, it must also be ensured that, in an emergency, the operator is in a position to activate an emergency stop device in close proximity (VDI 2853). To identify the type of enabling device in the catalog, the following symbols are used:







Function sequence for three-stage enabling switch





As can be clearly seen in the figure, the enabling function can only be achieved at stage 2. This function is provided by the closing of the normally open contacts (NO = E1 and E2).

If the button is released, that is back from stage 2 to stage 1, the normally open contacts are opened again. The 2-stage pushbuttons and the 3-stage enabling switches are identical in this function.

If, in this example, the button on a 3-stage enabling switch is pressed past the actuating point (stage 2) in panic (to stage 3), then not only the normally open contacts (NO) are reset, but at the series ZSE also the safe positively driven contacts (NC \ominus) are opened additionally.

The patented switch system ensures that the enabling function does not become active at stage 2 on the resetting of the pushbutton from stage 3 to stage 1. In this example the enable can only be given if normally open and normally closed contacts are closed at the same time. This situation is only possible on actuation from stage 1 to stage 2. In the other direction, from stage 3 to stage 1, stage 2 is skipped and unintentional restarting prevented.

Once the pushbutton has reached stage 1, the function sequence can be started again.

Due to its design, the switch unit also provides a wear-free, constant actuating point (stage 2).

Ergonomic housing

To make the operation of machines even easier and safer for the user, EUCHNER is the first manufacturer of hand-held pendant stations to have designed the housing taking into account ergonomic aspects. This means the HBL and HBA housings have been developed such that they fit optimally in the hand. Well-known manufacturers of machine tools and controllers all over the world are already using EUCHNER hand-held pendant stations. The wide product range extends from standard housings to custom-built hand-held pendant stations, e.g. with LCD displays, membrane keypads and serial communication ports.



Custom hand-held pendant stations

Customized hand-held pendant stations based on the standard devices can also be produced in small quantities. In order to use these ergonomically designed housings for the various requirements, EUCHNER offers the option of customized solutions. In the Appendix you will find forms which can be used to describe your requirements. We will be pleased to draw up a quotation based on your requirements.

Kits for hand-held pendant stations

To enable you to use ergonomically designed housings even for small quantities, e. g. prototypes or special versions, EUCHNER provides kits for hand-held pendant stations. As a result, you can assemble a handheld pendant station in a user-friendly housing to suit your requirements.

Explanation of symbols and notation

Symbols and specific notation related to the switches or the contact element are used time and again in the catalog.

The following example is intended to explain these aspects:

Notation 1 NC \oplus + 1 NO

Explanation:

Normally closed contacts are termed *NC*, normally open contacts *NO*. The number indicates how many contacts are available. The symbol \bigcirc after the *NC* defines that the NC contact is a positively driven contact. This switch therefore has one NC contact and one NO contact; the NC contact is a positively driven contact.

Overview of hand-held pendant stations

	Features										
Version	Selector switch	Key- operated switch	Push- button	Ena de 2-st.	bling vice 3-st.	EMERGENCY STOP device	Hand- wheel	Membrane keypad	RS422 interface, 3964R protocol	LCD display	Page
Hand-held pendant stations HBA	•		•	•	•	•	•	•	•	•	10 ff
Hand-held pendant stations HBL	•	•	•	•	•	•	٠	•	•	•	20ff



Hand-held pendant stations HBA

Handwheel 100 pulses, wear-free magnetic detent

2 pushbuttons, 2-stage, 1 NO contact each, e.g. for enabling function

Depending on version:

- Tamper-proof EMERGENCY STOP device according to EN ISO 13850, dual-channel
- 2 selector switches, 5 positions each (X, Y, Z, 4, 5 and 0, 1, 10, 100, 1000)
- 3 membrane pushbuttons, 1 NO contact each

Notes

- For holder HBA for hand-held pendant stations, see Accessories page 48
- For related 23-pin flange socket, see Accessories page 41



Technical data

Parameter	Value	Unit
Housing HBA		
Material	Plastic	
Color	Gray RAL 7040	
Operating temperature	0 +50	C°
Storage temperature	-20 +50	C°
Degree of protection according to EN 60529 / NEMA	IP 65 / 250-12	
Connection	Coiled cable, expandable to 3.5 m, 23-pin plug connector	
Weight	Approx. 1.3	kg
Handwheel		
Pulses / revolution	100	
Power supply	5 ± 5%	V DC
Output specifications	RS422A	
Pushbutton, 2-stage, e.g. for enabling function		
Switching elements	2, 1 NO contact each	
Connection ratings	30 V DC / 100 mA	
EMERGENCY STOP device		
Standard	EN ISO 13850	
Switching elements	2 NC contacts	
Utilization category to IEC 60947-5-1	DC-13, U _e 24 V, I _e 3 A	
Selector switch		
Output code	See wiring diagram	
Switching voltage max.	25	V AC/DC
Switching capacity max.	0.2	VA
Membrane keypad		
Switching elements	3, 1 NO contact each	
Switching voltage max.	30	V DC
Switching current max.	100	mA
Breaking capacity max.	1	W

ree Dimension drawing



Ordering table



Hand-held pendant stations HBA

- Handwheel 100 pulses, wear-free magnetic detent
- 1 enabling switches, 3-stage, 2 NO contacts each

Depending on version:

- Tamper-proof EMERGENCY STOP device according to EN ISO 13850, dual-channel
- 1 selector switch with 6 positions (X, Y, Z, 4, 5 6)
- 1 selector switch with 5 positions (0, 1, 10, 100, 1000)
- 3 membrane pushbuttons, 1 NO contact each

Notes

- For holder HBA for hand-held pendant stations, see Accessories page 48
- For related 23-pin flange socket, see Accessories page 41
- For related 28-pin flange socket, see Accessories page 41



Technical data

Parameter	Value	Unit
Housing HBA		
Material	Plastic	
Color	Gray RAL 7040	
Operating temperature	0 +50	°C
Storage temperature	-20 +50	°C
Degree of protection according to EN 60529 / NEMA	IP 65 / 250-12	
Connection	Coiled cable, expandable to 3.5 m, 23-pin or 28-pin (HBA - 100 194) plug connector	
Weight	Approx. 1.3	kg
Handwheel		
Pulses / revolution	100	
Power supply	$5 \pm 5\%$	V DC
Output specifications	RS422A	
Enabling switch ZXE, 3-stage		
Switching elements	2 NO contacts	
Utilization category to IEC 60947-5-1	DC-13, U _e 24 V, I _e 0.1 A	
EMERGENCY STOP device		
Standard	EN ISO 13850	
Switching elements	2 NC contacts	
Utilization category to IEC 60947-5-1	DC-13, U _e 24 V, I _e 3 A	
Selector switch		
Output code	See wiring diagram	
Switching voltage max.	25	V AC/DC
Switching capacity max.	0.2	VA
Membrane keypad		
Switching elements	3, 1 NO contact each	
Switching voltage max.	30	V DC
Switching current max.	100	mA
Breaking capacity max.	1	W



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Ordering table

	Features							
Version/item	2 selector switches 5 and 6 positions	3 membrane pushbuttons 1 NO contact each	1 enabling switch ZXE 3-stage	EMERCENY stop device	Handwheel 100 pulses	Order No.		
HBA - 100 186			٠		•	100 186		
HBA - 100 212	•		•	•	•	100 212		
HBA - 100 213		•	•	•	•	100 213		
HBA - 100 194	٠	•	•	•	۰	100 194		
Wiring diagram	Increment selection Axle selction	Pushbutton left	Enabling switch *	Emergency Stop	A1: Handwheel			
	Selector switch right Selector switch left 5 positions 6 positions 1 0000 1 2 0001 1 3 0011 10 4 0010 10 5 0110 1000 5 0110 1000	Pushbutton middle Pushbutton right	ZXE 3-stage left $\begin{array}{c} & & \\ & & $					
 Travel diagram see page 6 	107 H2 107 H2	S6 S5 S4 71 71 71 			H H H H H H H H H H H H H H			
** Plug contact U at HBA - 100 213 (plug connector 23-pin) Plug contact a at HBA - 100 194 (plug connector 28-pin)		<u>δ</u> [] ⊢[] ∞[]	∝[] ⊂ [] Z [] Σ []	×[]¬[] エ[]ʊ[]	sheld elec			

Hand-held pendant stations HBA

- Handwheel 100 pulses, wear-free magnetic detent
- Tamper-proof EMERGENCY STOP device according to EN ISO 13850, dual-channel
- 1 selector switch, 6 positions (0, Z, X, Y, 4, 5)
- 6 membrane pushbuttons, 1 NO contact each

Depending on version:

- 2 pushbuttons, 2-stage, 1 NO contact each, e.g. for enabling function
- 1 enabling switch, 3-stage, 2 NO contacts

Notes

- For holder HBA for hand-held pendant stations, see Accessories page 48
- For related connection kit comprising 26-pin flange socket and short-circuit plug, see Accessories page 44
- ▶ Function compatible with Siemens MINI BHG



Technical data

Parameter	Value	Unit
Housing HBA		
Material	Plastic	
Color	Gray RAL 7040	
Operating temperature	0 +50	C°
Storage temperature	-20 +50	C°
Degree of protection according to EN 60529 / NEMA	IP 65 / 250-12	
Connection	Coiled cable, expandable to 3.5 m, 26-pin plug connector	
Weight	Approx. 1.3	kg
Handwheel		
Pulses / revolution	100	
Power supply	$5 \pm 5\%$	V DC
Output specifications	RS422A	
EMERGENCY STOP device		
Standard	EN ISO 13850	
Switching elements	2 NC contacts	
Utilization category to IEC 60947-5-1	DC-13, Ue 24 V, Ie 3 A	
Selector switch		
Output code	See wiring diagram	
Switching voltage max.	25	V AC/DC
Switching capacity max.	0.2	VA
Membrane keypad		
Switching elements	6, 1 NO contact each	
Switching voltage max.	30	V DC
Switching current max.	100	mA
Breaking capacity max.	1	W
Pushbutton, 2-stage, e.g. for enabling function		
Switching elements	2, 1 NO contact each	
Connection ratings	30 V DC / 100 mA	
Enabling switch ZXE, 3-stage		
Switching elements	1, 2 NO contacts	
Utilization category to IEC 60947-5-1	DC-13, Ue 24 V, Ie 0.1 A	

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Ordering table

				Features			
Version/item	1 selector switch 6 positions	6 membrane pushbuttons 1 NO contact each	2 pushbuttons 2-stage	1 enabling switch ZXE 3-stage	EMERGENCY STOP device	Handwheel 100 pulses	Order No.
	\$10	S4, S5, S6, S7, S8, S9	S2, S3	S2	\$1	A1	
HBA - 102 434	•	•	•		•	•	102 434
HBA - 103 037	٠	•		•	•	•	103 037
Wiring diagram	S10: Selector switch right 6 positions S10 OBA 1 1 10 0 2 010 0 2 010 2 3 011 X 4 111 Y 5 1 101 4	S4: Push button "+" S5: Push button "-" S6: Push button "L" S7: Push button "F1" S8: Push button "F2" S9: Push button "F3"	S2 (left) + S3 (right): Pushbutton 2-stage e.g. for enabling function	S2: Enabling switch * ZXE 3 stage left	S1: Emergency-stop	Handwheel RS422	
	6 001 5		2 *2	° 3 ₀² 3 ₀³			
* Travel diagram						22 22 23 23 23 23 23 23 23 23 23 23 23 2	
* Travel diagram see page 6	Schim 8 9 9	12 (고 (고 (고 (코 (고	ارم (ام ارم	ام (م (م	4[m] 0]-[11300000000000000000000000000000000000	



Hand-held pendant stations HBA

- Membrane keypad can be labled as required using slide-in strips
- Tamper-proof EMERGENCY STOP device according to EN ISO 13850, dual-channel
- LEDs white, color customer-specific using colored keypad membrane

Depending on version:

- 2 pushbuttons, 2-stage, 1 NO contact each, e.g. for enabling function
- 1 enabling switch, 3-stage, 2 NO contacts
- Coiled cable expandable to 5 m, 35-pin plug connector
- Coiled cable expandable to 3.5 m, 42-core free cable end

Hinweise

- For holder HBA for hand-held pendant stations, see Accessories page 48
- ▹ For related 35-pin flange socket, see Accessories page 41
- For template for slide-in strips see www.euchner.de (Operating Instructions)



Technical data

Parameter	Value	Unit
Housing HBA		
Material	Plastic	
Color	Gray RAL 7040	
Operating temperature	0 +50	°C
Storage temperature	-20 +50	°C
Degree of protection according to EN 60529 / NEMA	IP 65 / 250-12	
Connection	Coiled cable, expandable to 5 m, 35-pin plug connector	
	Coiled cable, expandable to 3.5 m, 42-core free cable end	
Weight	Approx. 1.3	kg
EMERGENCY STOP device		
Standard	EN ISO 13850	
Switching elements	2 NC contacts	
Utilization category to IEC 60947-5-1	DC-13, Ue 24 V, Ie 3 A	
Membrane keypad		
Switching elements	14, 1 NO contact each	
Switching voltage max.	30	V DC
Switching current max.	100	mA
Breaking capacity max.	1	W
Pushbutton, 2-stage, e.g. for enabling function		
Switching elements	2, 1 NO contact each	
Switching voltage max.	30	V DC
Switching current max.	100	mA
Enabling switch ZXE, 3-stage		
Switching elements	1, 2 NO contacts	
Utilization category to IEC 60947-5-1	DC-13, U _e 24 V, I _e 0.1 A	



	Merkmale									
Version/item	Membrane keypad S4 - S17	Pushbutton 2-stage S2, S3Enabling switch ZXE, 3-stage 	EMER- GENCY STOP device S1							
НВА - 096 692	•	•	• 096 692							
НВА - 105 693	•	•	• 105 693							
Wiring diagram	S4 - S17: Membrane keypad	S2 (left) + S3 (right): Pushbutton 2-stage e.g. for enabling function * S2: Enabling switch* ZXE 3-stage left Interpret	S1: Emergency Stop							
	Hair		⊕Ţ ^{sı}							
 Travel diagram see page 6 	日本 10 年間 10 月 10									

Ordering table



Hand-held pendant stations HBAS

- Programmable pulse generator
- Tamper-proof EMERGENCY STOP device according to EN ISO 13850, dual-channel
- Membrane keypad with 20 keys and 2 LEDs
- LCD display with LED background lighting, switchable 4-line/8-column or 8-line/16-column
- RS422 interface, 3964R protocol

Depending on version:

- 2 pushbuttons, 2-stage, 1 NO contact each, e.g. for enabling function
- 1 enabling switch, 3-stage, 2 NO contacts

Notes

- For holder HBA for hand-held pendant stations, see Accessories page 48
- For related 19-pin flange plug, see Accessories page 44
- ActiveX module available for integrating the user's application (for MS Windows®-based user programs with ActiveX support)



Technical data

Parameters	Value	Unit
Housing HBA		
Material	Plastic	
Color	Gray RAL 7040	
Operating temperature	0 +50	C°
Storage temperature	-20 +50	C°
Degree of protection according to EN 60529 / NEMA	IP 65 / 250-12	
Connection	Coiled cable, expandable to 3.5 m, 19-pin plug connector	
Weight	Approx. 0.85	kg
Pulse generator		
Pulses	Programmable	
Output specifications	RS422A	
EMERGENCY STOP device		
Standard	EN ISO 13850	
Switching elements	2 NC contacts	
Utilization category to IEC 60947-5-1	DC-13, Ue 24 V, Ie 3 A	A
Communications interface		
Туре	Serial, RS422A (4-wire)	
Data format	8 data bits + 1 parity bit (even), 1 stop bit	
Transfer speed	9600 or 19200 baud, automatic detection	
Transfer protocol	3964R	
Electrical connection		
Power supply	$24 \pm 20\%$	V DC
Operating current, max.	100	mA
Pushbutton, 2-stage, e.g. for enabling function		
Switching elements	2, 1 NO contact each	
Switching voltage max.	30	V DC
Switching current max.	100	mA
Enabling switch ZXE, 3-stage		
Switching elements	1, 2 NO contacts	
Utilization category to IEC 60947-5-1	DC-13, U _e 24 V, I _e 0.1 A	



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Ordering table

	Features						
Version/item	2 pushbuttons 2-stage S2, S3	1 enabling switch ZXE, 3-stage S2	EMERGENCY STOP device S1	Programmable pulse generator, membrane keypad, display, RS422 interface, 3964R protocol	Order No.		
HBAS - 072 949	•		•	•	072 949		
HBAS - 094 594		•	•	•	094 594		
 Wiring diagram * Travel diagram see page 6 	S2 (left) + S3 (right): Pushbutton 2 stage e.g. for enabling function	S2: Enabling switch ZXE* 3 stage left S2 $r \downarrow 0$ $r \downarrow 3$ s_{2} $r \downarrow 0$ $r \downarrow 3$ s_{3} s_{2} $r \downarrow 0$ $r \downarrow 0$ r	S1: Emergency Stop	Programmemory PLASH Interface Communication Network			

ActiveX module	093 011
Software for integration into user software that supports ActiveX	055 011
Manual ActiveX module	093 013
Detailed documentation on use of the software	055 015

Hand-held pendant station HBL - 097 339

- ► Handwheel 100 pulses
- Tamper-proof EMERGENCY STOP device according to EN ISO 13850, dual-channel
- Enabling switch 3-stage
- 3 illuminated pushbuttons, can be individually labeled
- 2 selector switches
- ► Key-operated switch





Notes

- For holder HBL for hand-held pendant stations, see Accessories page 48
- For related 35-pin flange socket, see connection components page 48

Technical data

Parameters	Value	Unit
Housing HBL		
Material	Plastic	
Color	Blue-gray RAL 7031	
Ambient temperature	0 +55	C°
Degree of protection according to EN 60529	IP 65	
Connection	Cable 3.5 m, 35-pin plug	
Weight	Approx. 2.1	kg
EMERGENCY STOP device		
Standard	EN ISO 13850	
Switching elements	2 NC contacts	
Utilization category to IEC 60947-5-1	DC-13 Ue 24 V Ie 2.75 A	
Handwheel HKD		
Pulses per revolution	100	
Power supply	5 ± 5%	V DC
Output circuit	RS 422 A	
Output signals	See page 67	
Enabling switch ZSE, 3-stage		
Switching elements	2 NO contacts, 1 positively driven contact	
Utilization category to IEC 60947-5-1	AC-15 U _e 24 V I _e 4 A	
	DC-13 U _e 24 V I _e 3 A	
Buttons		
Switching elements	3, 1 NO contact each	
Switching voltage max.	30	V DC
Switching current max.	100	mA
LED	I = 21 mA / U = 24 V DC	
Selector switch		
Switching voltage max.	30	V DC
Switching current max.	100	mA
Breaking capacity max.	2	W
Key-operated switch		
Switching voltage max.	30	V AC/DC
Switching current max.	250	mA



Order No.

097 339

Ordering table

Item

- Hand-held pendant station HBL 097 339 with:
- Handwheel 100 pulses
- ▶ Tamper-proof emergency stop device according to EN ISO 13850, dual-channel
- Enabling switch ZSE 3-stage, 2 NO contacts, 1 positively driven contact
- ▶ 3 illuminated pushbuttons, 1 NO contact each
- 2 selector switches, 12 positions and 3 positions
- ▶ Key-operated rotary switch, 1 NO contacts, 1 NC contact

Wiring diagram



* Travel diagram see page 6



Hand-held pendant station HBLS - 072 725

- Handwheel 100 pulses ►
- Tamper-proof EMERGENCY STOP ▶ device according to EN ISO 13850, dual-channel
- 2 pushbuttons 2-stage, e.g. for ⊳ enabling function
- 12 illuminated buttons ⊳
- ⊳ Buttons can be designed as required using slide-in film
- 2 selector switches ►
- LCD display (text mode) ⊳
- RS422 interface, 3964R protocol ▶



Notes

- ▶ For holder HBL for hand-held pendant stations, see Accessories page 48
- ▶ For related 23-pin flange socket, see connection components page 41
- ActiveX module available for integrating the user's application (for MS Windows®-based user programs with ActiveX support)

Technical data		
Parameters	Value	Unit
Housing HBL		
Material	Plastic	
Color	Blue-gray RAL 7031	
Operating temperature	0 +50	C°
Degree of protection according to EN 60529	IP 65	
Connection	Cable 3.5 m, 23-pin plug	
Weight	2.2	kg
EMERGENCY STOP device		-
Standard	EN ISO 13850	
Switching elements	2 NC contacts	
Utilization category to IEC 60947-5-1	DC-13 U _e 24 V I _e 2.75 A	
Handwheel HKD		
Pulses per revolution	100	
Output circuit	RS 422 A	
Output signals	See page 67	
Pushbutton ZSG, 2-stage, e.g. for enabling function		
Switching elements	2, 2 NO contacts each	
Utilization category to IEC 60947-5-1	AC-15 Ue 24 V Ie 4 A	
	DC-13 Ue 24 V le 3 A	
Interface		
Туре	RS 422	
Data format	8 data bits , even parity, 1 or 2 stop bits	
Transfer speed	9600 or 19200 (setting using DIL switches)	baud
Transfer protocol	3964 R	
Electrical connection		
Power supply	24 +20%	V DC

22





200

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mΑ

Order No.

072 725

Ordering table

Item

- Hand-held pendant station HBLS 072 725 with:
- Handwheel 100 pulses
- \blacktriangleright Tamper-proof emergency stop device according to EN ISO 13850, dual-channel
- ▶ 2 pushbuttons ZSG 2-stage, 2 NO contacts each, e.g. for enabling function
- 12 illuminated buttons
 2 selector switches, 12 positions each

Wiring diagram



ActiveX module

Software for integration into user software that supports ActiveX	067 176
Manual ActiveX module	067 178
Detailed documentation on use of the software	007 178





Kit for hand-held pendant stations HBA

The kit is designed to match individual customer specifications. Thanks to its modular configuration, you can construct prototypes and special versions in line with your requirements.

Aluminum front plates are available in silver or black anodized to match the housings.

Customer-specific functionality can be achieved by using the components supplied in the kit (pushbuttons, selector switches, key-operated rotary switches, etc).

For connection to the control system, cables with different numbers of cores, plug connectors and the relevant flange sockets are available.

Kit HBA without handwheel

The designs without handwheel have a cable gland and mounting magnet. In addition to the basic housing HBA, other identical designs with the option of fitting an EMERGENCY STOP and 2-stage pushbuttons or 3-stage enabling switches are available.

Kit HBA with handwheel

The designs with handwheels, some with 2-stage pushbuttons or 3-stage enabling switches, differ in the output stages on the handwheels and are adapted to various control systems.







Dimension drawing

Housing HBA without handwheel

- Cable gland for cable diameter 5-10 mm
- Rubber-coated mounting magnet on the rear of housing
- 6 fixing points for printed circuit board in top shell

Depending on version:

- Hole for EMERGENCY STOP device (sealed with blanking plug)
- 2 pushbuttons, 2-stage, 1 NO contact each, e.g. for enabling function
- 1 enabling switch, 3-stage, 2 NO contacts

Notes

- Matching front plate, see page 30
- Matching EMERGENCY STOP device (rotary or pull release) see page 36/37
- Attention: housing HBA 095 562 only suitable for EMERGENCY STOP device with rotary release.
- Depending on version with two 2-stage pushbuttons or one 3-stage enabling switch.



For dimensions of EMERGENCY STOP devices see page 36/37

Technical data

Parameter	Value	Unit
Housing HBA		
Material	Plastic	
Color	Gray RAL 7040	
Operating temperature	0 +50	C°
Storage temperature	-20 +50	C°
Degree of protection according to EN 60529 / NEMA	IP 65 / 250-12	
Weight	0.3	kg
Pushbutton, 2-stage, e.g. for enabling function		
Switching elements	2, 1 NO contact each	
Connection ratings	DC 30 V / 100 mA	
Enabling switch ZXE, 3-stage		
Switching elements	2 NO contacts	
Utilization category to IEC 60947-5-1	DC-13, U _e 24 V, I _e 0.1 A	



Ordering table

	Features			
Version/item	Hole for EMERGENCY STOP device	2 pushbuttons*, 2-stage, 1 NO contact each e.g. for enabling function \$1, \$2	1 enabling switch ZXE**, 3-stage, 2 NO contacts S1	Order No.
Housing HBA - 084 445				094 445
(without hole, without enabling switch)				064 445
Housing HBA - 084 450	for EMERGENCY STOP with pull release			084 450
Housing HBA - 086 155	for EMERGENCY STOP with pull release	•		086 155
Housing HBA - 095 562	for EMERGENCY STOP with rotary release		٠	095 562
		[∞] 2 ^{∞2}		

Travel diagram see page 6
 Travel diagram see page 45



Housing HBA with handwheel

- Handwheel 100 pulses, wear-free magnetic detent
- Hole for EMERGENCY STOP device (sealed with blank plug)
- Cable gland for cable diameter 5-10 mm
 Rubber-coated mounting magnet on the rear of housing
- 6 fixing points for printed circuit board in top shell

Depending on version:

- 2 pushbuttons, 2-stage, 1 NO contact each, e.g. for enabling function
- ▶ 1 enabling switch, 3-stage, 2 NO contacts
- Various handwheel output stages

Notes

- Matching front plate, see page 36
- Matching EMERGENCY STOP device (rotary or pull release) see page 36/37
- ▶ Warning:

Housing HBA - 095 561, HBA - 095 573, HBA - 095 572 and HBA - 095 574 only suitable for EMERGENCY STOP device with rotary release.

 Depending on version with two 2-stage pushbuttons or one 3-stage enabling switch.



For dimensions of EMERGENCY STOP devices see page 36/37

Technical data

Devementer		Valua	Unit
		value	Unit
Matarial		Diactio	
Color		Crow DAL 2040	
Operating temperature			°C
Storage temperature		20 +50	
Degree of protection according to l			U
Weight	EN 00329/NEIWA	IF 03 / 250-12	
Neight 2 stars of far an	abling function	0.3	кg
Pushbutton, 2-stage, e.g. for en	abling function	2 1 NO contract cook	
Switching elements	1		
Utilization category to IEC 60947-5	-1	30 V AC / 0.4 A; 30 V DC / 0.1 A	
Enabling switch ZXE, 3-stage		1.0.10	
Switching elements	1	I, 2 NU contacts	
Utilization category to IEC 60947-5	-1	DC-13, Ue 24 V, Ie 0.1 A	
Handwheel RS422A (U _B = 5 V D	(J	100	
Pulses / revolution		100	
Power supply		<u>5 ± 5%</u>	V DC
Output specifications		RS422A	
Handwheel push-pull 5 V (U _B = 5	5 V DC)		
Pulses / revolution		100	
Power supply		5 ± 5%	V DC
Output circuit		5 V push-pull	
Output voltage / output current	HIGH, min.	4.0 V at 0 mA / 3.4 V at 5 mA / 3.0 V at 20 mA	
	LOW, max.	1.3 V at 15 mA	
Handwheel push-pull 5 V (U _B = 1	.030 V DC)		
Pulses / revolution		25	
Power supply		10 30	V DC
Output circuit		5 V push-pull	
Output voltage / output current	HIGH, min.	4.9 V at 0 mA / 3.9 V at 5 mA / 3.6 V at 20 mA	
	LOW, max.	1.3 V at 15 mA	
Handwheel push-pull 24 V (U _B =	1030 V DC)		
Pulses / revolution		100	
Power supply		10 30	V DC
Output circuit		Push-pull 24 V	
Output voltage / output current	HIGH, min.	U _B - 3 V at 20 mA	
	LOW, max.	3 V at 20 mA	



	Features							
Version/		Hand	wheel		Hole for	2 push-	1 enabling	
item	Output	circuit	Power supply	Pulses per	EMERGENCY	2-stage, 1 NO	3-stage 2 NO	Order No.
	RS422	Push-pull UA	UB	revolution	STOP	contact each S1, S2	contacts S1	
Housing HBA - 083 449	•		5 V DC	100	for EMERGENCY STOP with pull release	•		083 449
Housing HBA - 095 561	٠		5 V DC	100	for EMERGENCY STOP with rotary release		٠	095 561
Housing HBA - 083 499		• 5 V	10 30 V DC	25	for EMERGENCY STOP with pull release	٠		083 499
Housing HBA - 095 573		• 5 V	10 30 V DC	25	for EMERGENCY STOP with rotary release		٠	095 573
Housing HBA - 083 495		• UB - 3 V	10 30 V DC	100	for EMERGENCY STOP with pull release	•		083 495
Housing HBA - 095 572		• Ub - 3 V	10 30 V DC	100	for EMERGENCY STOP with rotary release		•	095 572
Housing HBA - 086 762		● 5 V	5 V DC	100	for EMERGENCY STOP with pull release	٠		086 762
Housing HBA - 095 574		● 5 V	5 V DC	100	for EMERGENCY STOP with rotary release		•	095 574
	A1 Handwheel	A1 Handwheel				2 02	3.02	

Ordering table / wiring diagram



Travel diagram see page 6 Travel diagram see page 45



Front plates for housing HBA with and without handwheel



Technical data

	Material	
	Electrically anodized aluminum, black or silver	
Front plate	Self-adhesive coating on rear	
Ordering table		

Item	Order No.
Front plate for housing HBA without handwheel, silver anodized	084 395
Front plate for housing HBA without handwheel, black anodized	084 396
Front plate for housing HBA with handwheel, silver anodized	083 635
Front plate for housing HBA with handwheel, black anodized	083 636



The kit is designed to match individual customer specifications.

The housings differ in the integrated safety element:

- ► Housing without holes and without safety-related components
- Housing with dual-channel enabling device on both sides and hole for EMERGENCY STOP
- Housing with 3-stage enabling switch (1 positively driven contact, 2 NO contacts) without EMERGENCY STOP
- ► Housing with 3-stage enabling switch (2 positively driven contacts, 2 NO contacts) with hole for EMERGENCY STOP

Various versions of front plate are available:

- ▶ Front plate for applications with handwheel
- Front plate for applications without handwheel

With the related seal, degree of protection IP 65 is achieved.

Customer-specific functionality can be created by using the components supplied as accessories (pushbuttons, selector switches, key-operated rotary switches) and/or other components.

For connection to the control system, cables with or without plug connectors and with different numbers of cores and the relevant flange sockets are also available as accessories.





Housing HBL

- Rubber-coated mounting magnet on the rear of housing
- Hanging clip
- ▶ 6 screws for front plate fastening
- Cover frame for front plate
 Fixing points for fitting printed circuit board

Depending on version:

- Fastening nuts for cable gland Pg 11 or Pg 13.5
- Hole for EMERGENCY STOP device
 2 pushbuttons ZSG 2-stage,
- 2 pushbuttons 25G 2-stag
 2 NO contacts each,
 e.g. for enabling function
- Hole on left for enabling switch ZSE

Notes

- For EMERGENCY STOP devices see page 36/ 37 and 46
- ▶ For enabling switches ZSE see page 47
- ▶ For cable glands see page 43
- ▶ For assembly drawing see page 64
- ▶ Pg 11 for cable diameter 5 ... 10 mm
- ▶ Pg 13.5 for cable diameter 6 ... 12 mm



Technical data

Parameter	Value	Unit
Housing HBL		
Material	Plastic	
Color	Blue-gray RAL 7031	
Ambient temperature	0 +55	°C
Degree of protection according to EN 60529 / NEMA	IP 65 / 250-12	
Pushbutton ZSG, 2-stage, e.g. for enabling function		
Switching elements	2, 2 NO contacts each	
Utilization category to IEC 947-5-1	AC-15 U _e 24 V I _e 4 A	
	DC-13 U _e 24 V I _e 3 A	



-	Features							
Version	Fastening nut for cable gland		Hole for EMERGENCY STOP *	Hole for enabling switch ZSE2-2 C1692	Hole for enabling switch ZSE2-4 C1943	2 enabling switches ZSG 2-stage 2 NO contacts each	Order No.	
	Pg 11	Pg 13.5		3-stage 2 NO + 1 NC → (enabling switch page 47)	3-stage 2 NO + 2 NC ⊖ (enabling switch page 47)	e.g. for enabling function		
Housing HBL - 073 098	•						073 098	
Housing HBL - 072 630		•					072 630	
Housing HBL - 073 113	•		٠			٠	073 113	
Housing HBL - 072 631		•	٠			٠	072 631	
Housing HBL - 073 109	•			٠			073 109	
Housing HBL - 072 632		•		٠			072 632	
Housing HBL - 072 983	•		٠		•		072 983	
Housing HBL - 083 484			٠		۲		083 484	

Ordering table / wiring diagram

* Blanking plug \varnothing 22 supplied for hole for EMERGENCY STOP device



072 641

Front plate for housing HBL



Technical data

	Material	
Front plate	Electrically anodized aluminum, black	
Seal	NBR, self-adhesive on one side	
Ordering table		
Item		Order No.
HBL front plate, with seal		073 138
HBL front plate, with hole for handwheel HKD and seal		073 139

Front seal for HBL front plate



	Accessories							
Accessories for kit	EMERGENCY STOP device	Pushbutton	Key-operated switch	Selector switch	Enabling switch 3-stage	Plug connector	Connection cables	Page
								37
Suitable for all designs			•					38
								39
						•		41
								42
Hand-held pendant stations HBA								36
						•		44
								45
Hand-held pendant	•							46
stations HBL								47

Overview of accessories for kits for hand-held pendant stations





EMERGENCY STOP devices according to EN ISO 13850

- With pull release
- EMERGENCY STOP device for housing HBA without enabling switch ZXE 3-stage

Notes

- The EMERGENCY STOP device engages when actuated by pressing, unlocks when pulled, and is overload-proof
- Do not use for housing HBA with 3-stage enabling switch ZXE



Technical data

Parameter	Value	Unit
Actuating element		
Color of actuating button	Red	
Color of bottom shell	Yellow	
Switching elements	2, one positively driven contact each	
Degree of protection	IP 65	
Utilization category to IEC 947-5-1	DC-13 Ue 24 V Ie 3 A	

With rotary release

- EMERGENCY STOP device for housing HBA
- Bottom shell yellow

Notes

The EMERGENCY STOP device engages when actuated by pressing, unlocks when rotated, and is overload-proof

Dimension drawing









Technical data

Parameter	Value	Unit
Actuating element		
Color of actuating button	Red	
Color of bottom shell	Black	
Switching elements	1, 2 positively driven contacts	
Degree of protection	IP 65	
Connection ratings	30 V DC / 3 A	

Ordering table

Item	Order No.
EMERGENCY STOP device (pull release) with 2 switching elements, 1 positively driven contact each	096 298
EMERGENCY STOP device (rotary release), bottom shell yellow, 2 positively driven contacts	106 435
Blanking plug for fastening hole for EMERGENCY STOP device	083 653


Pushbutton



Technical data

Parameter	Value	Unit
Ambient temperature	-25 +70	C°
Front degree of protection (integrated in front plate)	IP 67	
Switching principle	Button, snap-action switching element	
Switching elements	1 NO contact	
Switching voltage	30	V DC
Switching current max.	0.1	A
Connection type	Soldered connection	

Ordering table

Item	Order No.
Pushbutton, black button	083 640
Pushbutton, red button	086 753
Pushbutton, green button	086 754
Pushbutton, blue button	086 757
Pushbutton, white button	086 755
Pushbutton, yellow button	086 756

Illuminated pushbutton (can be individually labeled)

Dimension drawing



o o

Technical data

Parameter	Value	Unit
Ambient temperature	-25 +55	°C
Front degree of protection (integrated in front plate)	IP 65	
Switching principle	Button, snap-action switching element	
Switching elements	1 NC contact, 1 NO contact	
Switching current max.	100	mA
Switching voltage max.	30	V AC/DC
LED	24 V / 14 mA	
Connection type	Soldered connection	

6

Ordering table

Item	Order No.
Illuminated pushbutton, can be individually labeled	074 991



Gray code selector switch



Selector switch 1 of X



Code table, switch with Gray code

Detent	Output					
position	D	С	В	Α		
1	0	0	0	0		
2	0	0	0	1		
3	0	0	1	1		
4	0	0	1	0		
5	0	1	1	0		
6	0	1	1	1		
7	0	1	0	1		
8	0	1	0	0		
9	1	1	0	0		
10	1	1	0	1		
11	1	1	1	1		
12	1	1	1	0		
13	1	0	1	0		
14	1	0	1	1		
15	1	0	0	1		
16	1	0	0	0		
Connections A. D: switch outputs						

Circuit diagrams switch 1 of X



Connections A - D: switch outputs Connections 1 - 3: power supply

Technical data

Parameter	Value	Unit
Front degree of protection (integrated in front plate)	IP 67	
Single-hole bushing mounting	M6 x 0.75	
Detent positions	2, 3, 4, 5, 6, 7, 8, 12 or 16 depending on item	
Detent angle	Gray code 22.5° / 1 of X: 30°	
Output code	1 of 2, 1 of 3, 1 of 4 or Gray code depending on item	
Breaking capacity max.	0.2	VA
Switching voltage max.	25	V AC/DC
Connection type	Soldered connection on printed circuit board	
Maximum soldering time.	≤ 5 (at t ≤ 260 °C)	S



Rotary knob



Ordering table

Item	Detent angle	Order No.
Selector switch, 2 detent positions, 1 of 2, break-before-make ¹⁾	30°	097 026
Selector switch, 3 detent positions, 1 of 3, break-before-make ¹⁾	30°	097 027
Selector switch, 4 detent positions, 1 of 4, break-before-make ¹⁾	30°	097 028
Selector switch, 5 detent positions, Gray code, make-before-break ²⁾	22.5°	097 029
Selector switch, 6 detent positions, Gray code, make-before-break ²⁾	22.5°	097 030
Selector switch, 7 detent positions, Gray code, make-before-break ²⁾	22.5°	097 031
Selector switch, 8 detent positions, Gray code, make-before-break ²⁾	22.5°	097 032
Selector switch, 12 detent positions, Gray code, make-before-break ²⁾	22.5°	097 033
Selector switch, 16 detent positions, Gray code, make-before-break ²⁾	22.5°	097 034
Rotary knob, matt black with a marking, collet fastening for shaft 3.2 mm	-	097 141

1) Break-before-make: all outputs are open between the switch positions.

2) Make-before-break: the related outputs are connected between the switch positions.



Key-operated switch



Technical data

Parameter	Value	Unit
Ambient temperature	-25 +55	C°
Front degree of protection (integrated in front plate) / NEMA	IP 65 / 250-12	
Switching principle	Snap-action switching element	
Switching element	1 NC contact, 1 NO contact	
Switching voltage max.	30	V AC/DC
Switching current max.	250	mA
Connection type	Soldered connection	

Ordering table

Item		Order No.
Key-operated switch	Key can be withdrawn in both positions	083 639



Plug connectors

Number of pins	D	L	Cable-Ø
35	40.2	103	8.0 - 12.0
28	37.2	97	8.0 - 12.0
23	33.9	91	6.0 - 10.0
12	27.5	81	5.5 - 9.5



Flange sockets



Number of pins	Α	B _{max}	C _{max}	D _{max}	G _{max}	L	М	Ν	Р
35	34.9	14.6	17.3	25.7	39.9	31.8	34.1	37.7	3.1
28	31.7	14.6	17.3	25.7	36.8	29.4	30.9	34.5	3.1
23	28.5	11.4	13.3	24.1	33.6	27	27.8	31.3	3.1
12	22.2	11.4	13.3	24.1	28.8	22.9	21.4	25	3.1

Short-circuit plugs

Number of	pins D	L	LK
35	40.2	84	255
28	37.2	78	255
23	33.9	72	252
12	27.5	59.4	251



Technical data

Value	Unit
Metal	
12 / 23 / 28 / 35	
IP 65 / 250-12	
Gold-plated	
	Value Metal 12 / 23 / 28 / 35 IP 65 / 250-12 Gold-plated

Ordering table

0	
Item	Order No.
Plug connector, 35-pin with pin contacts	074 395
Plug connector, 28-pin with pin contacts	074 394
Plug connector, 23-pin with pin contacts	074 393
Plug connector, 12-pin with pin contacts	086 748
Flange socket, 35-pin with socket contacts	074 386
Flange socket, 28-pin with socket contacts	074 385
Flange socket, 23-pin with socket contacts	074 384
Flange socket, 12-pin with socket contacts	086 749
Short-circuit plug with chain, 35-pin	083 459
Short-circuit plug with chain, 28-pin	083 458
Short-circuit plug with chain, 23-pin	083 457
Short-circuit plug with chain, 12-pin	087 802



Cable, coiled and straight



Dimensions of coiled design



Technical data

Parameter		Value	Unit	
Cable resistance		≤ 145	Ω/km	
Test voltage core / core		1.0	kV _{eff}	
Test voltage core / screen		1.0	kV _{eff}	
Insulation resistance	12-core and 23-core	≥ 200	Mo	
	35-core	≥ 20	10152	
Operating temperature		-10 +70	C°	
Bending radius	once	\geq 10 x cable diameter		
	several times	\geq 15 x cable diameter		

Ordering table

Item	Cable length [mm]	A [mm]	B [mm]	Ø C [mm]	Ø D [mm]	Order No.
Cable, 12-core, coiled	3900	Approx. 2500	550 ± 20	6 ± 0.3	8 ± 2	086 721
Cable, 12-core, coiled	5400	Approx. 4000	880 ± 20	6 ± 0.3	8 ± 2	086 722
Cable, 12-core, straight	3500	-	-	-	-	087 379
Cable, 12-core, straight	5000	-	-	-	-	087 380
Cable, 12-core, straight	10000	-	-	-	-	087 381
Cable, 23-core, coiled	3900	Approx. 2500	550 ± 20	7.5 ± 0.3	10 ± 2	087 408
Cable, 23-core, coiled	5400	Approx. 4000	880 ± 20	7.5 ± 0.3	10 ± 2	087 409
Cable, 23-core, straight	3500	-	-	-	-	087 382
Cable, 23-core, straight	5000	-	-	-	-	087 383
Cable, 23-core, straight	10000	-	-	-	-	087 384
Cable, 35-core, coiled	3900	Approx. 2500	550 ± 20	8 ± 0.5	10 ± 2	097 190
Cable, 35-core, coiled	5400	Approx. 4000	880 ± 20	8 ± 0.5	10 ± 2	097 191
Cable, 35-core, straight	3500	-	-	-	-	097 189
Cable, 35-core, straight	5000	-	-	-	-	097 188
Cable, 35-core, straight	10000	-	-	-	-	097 187



Cable gland with anti-kink spiral

Dimension drawing	E E	GL H SW			
Thread M	lleo	Cable diameter	CIM/	CI	U

Thread M	Use	Cable diameter	SW	GL	Н
M16x1.5	Kit HBA	5 - 10	22	8	71
Pg 11	Kit HBL	5 - 10	22	11	71
Pg 13.5	Kit HBL	6 - 12	24	12.5	81

Ordering table

Item	Order No.
Cable gland M16x1.5 with anti-kink spiral, color black	083 641
Cable gland Pg 11, with anti-kink spiral and fastening nut, color black	073 982
Cable gland Pg 13.5, with anti-kink spiral and fastening nut, color black	073 983

Order No.

103 042

Connection kit

for design HBA - 102 434 and HBA - 103 037, comprising flange socket 26-pin and short-circuit plug

Flange socket 26-pin





Technical data

Parameter	Value	
Flange socket		
Housing material	Metal	
Number of pins	26	
Degree of protection according to EN 60529 (inserted)	IP 67	
Contact material	Copper alloy	
Short-circuit plug		
Housing material	Metal	
Number of pins	26	
Degree of protection according to EN 60529 (inserted)	IP 67	
Contact material	Copper alloy	

Ordering table

Item

Flange socket and short-circuit plug

Flange plug

for design HBAS - 072 949 and HBAS - 094 594



Technical data

Parameter	Value	
Housing material	Metal	
Number of pins	19	
Degree of protection according to EN 60529 (inserted)	IP 65	
Contact material	Copper alloy	
Connection type	Soldered connection	

Ordering table

Item	Order No.
Flange plug, 19-pin with socket contacts	092 374



Enabling switch ZXE-091336, 3-stage, 2 NO contacts

Notes

 Enabling switch ZXE-091336 for use in housing HBA - 095 562 (see page 26)

Switching elements

2202 2 NO contacts



Enabling switch ZXE-104833 with a click, 3-stage, 2 NO contacts

Notes

- Enabling switch ZXE-104833 for use in housing HBA - 095 562 (see page 34)
- A clicking sounds when changing from stage 1 to stage 2 and when the buttom is released back from stage 2 to stage 1.

Switching elements

2202 2 NO contacts





Wiring diagramm/function sequence ZXE



Technical data

Parameter	Value	Unit
Housing material	Polyamide, black	
Material protective cap	CR (neoprene), black	
Degree of protection to IEC 529	IP 65 on front	
Ambient temperature	- 5 + 60	°C
Switching principle	Slow-action contact element	
Utilization category to IEC 947-5-1	DC-13 Ue 24 V Ie 0.1 A	
Weight	ca. 0.03	kg

Ordering table

Item	Feature	Contact elements	Switch type	Order No.
ZXE-091336	-	2 NO contacts	Dual-channel	091 336
ZXE-104833	Clicking noise with actuation	2 NO contacts	Dual-channel	104 833



Order No

EMERGENCY STOP device, 22 mm with pull release according to EN ISO 13850

Notes

Dimension drawing

- The EMERGENCY STOP device engages when actuated by pressing, unlocks when pulled, and is overload-proof
- Use only for following housings:
- HBL 072 631
- HBL 072 983
- HBL 073 113
- HBL 083 484



Technical data

Parameter	Value	Unit
Color of actuating button	Red	
Color self-adhesive label	Yellow	
Switching element	2 NC contacts	
Utilization category to IEC 947-5-1	DC-13 Ue 24 V le 2.75 A	

Ordering table

110	m	
ILC		

Item	Order No.
EMERGENCY STOP device, complete with switching elements (2 x NC contacts), 1 pull release	073 985
Blanking plug for fastening hole for EMERGENCY STOP device	059 622



Enabling switch ZSE2-2, 3-stage, 1 positively driven contact

Notes

 Enabling switch ZSE2-2 C1692 for use in housing HBL - 073 109 and HBL - 072 632 (see page 32)

Switching elements

▶ 210 2 NO contacts + 1 NC contact →



Enabling switch ZSE2-4, 3-stage, 2 positively driven contacts

Notes

 Enabling switch ZSE2-4 C1943 for use in housing HBL - 072 983 and HBL - 083 484 (see page 32)

Switching elements

▶ 220 2 NO contacts + 2 NC contacts ⊖



Wiring diagrams/function sequence ZSE 2-2 and ZSE 2-4



Technical data

Parameter	Value	Unit
Housing material	Plastic	
Fastening hole	Ø 30.5 +0.5	mm
Degree of protection according to IEC 529	IP65 on front	
Ambient temperature	- 5 + 60	°C
Switching principle	Slow-action contact element	
Utilization category to IEC 947-5-1	AC-15 Ue 24 V Ie 4 A	
	DC-13 Ue 24 V Ie 3 A	
Weight	Approx. 0.1	kg

Ordering table			
Item	Contact elements	Switch type	Order No.
ZSE2-2 C 1692	2 NO contacts + 1 positively driven contact	Single-channel	070 752
ZSE2-4 C 1943	2 NO contacts + 2 positively driven contacts	Dual-channel	083 477



Holder for Hand-Held Pendant Stations

EUCHNER

Holder HBA

Technical data

Parameter	Value	Unit
Housing material	Plastic	
Fixing system	Screws	
Ambient temperature	-5 to +60	°C
Weight	Approx. 0.1	kg

Ordering table

Item	Order No.
Holder HBA	072 828
Holder HBA gray	072 828
Holder HBA black	100 221
Holder HBA gray, enlarged handwheel cut-out	072 935
Holder HBA black, enlarged handwheel cut-out	109 979



Holder HBL

Technical data

Parameter	Value	Unit
Housing material	Plastic	
Fixing system	Screws	
Ambient temperature	-5 to +60	°C
Weight	Approx. 0.1	kg

Ordering table

Designation	Order No.
Holder HBL	084 397







Function and technology used in handwheels

The change from a handwheel directly coupled to the spindle or axes to CNC-controlled axes has meant dramatic new developments for the handwheels. Along with the rotary movement and the visual indication of the position, the rotation of the handwheel generates square-wave pulses that are evaluated by the CNC axis controller and initiate the movement of the axis. With over 20 years of handwheel experience, EUCHNER provides a wide selection of handwheels that meet the high requirements on quality, reliability and safe signal generation in the machine tool sector.

The daily use of handwheels places high demands on the mechanical design. With twin bearings and a wear-free detent, the handwheels are the optimum choice for trouble-free operation. The detent moment prevents undesired movement even in the event of machine vibration. The detent moment and the 100 or 25 pulses per revolution allow a desired value to be set quickly, reliably and accurately. In addition to the manual positioning of axes on CNC-controlled machines, handwheels are also used for medical and telecommunication applications. EUCHNER also offers handwheels for these applications.





Electronic Handwheels

EUCHNER

Magnetic detent mechanism

Handwheels with magnetic detent are characterized by their absolutely wear-free and noiseless detent mechanism.

With 100 detent positions (100 or 25 pulses)

The detent position is generated by a magnetic field. A combination of 100 magnetic north/south poles is generated by the opposing magnetic fields creating 100 detent positions per revolution of the handwheel. Thanks to an air gap, the detent mechanism has no wear and is absolutely maintenance-free. With two ball bearings, the handwheel's bearing assembly can withstand high axial and radial forces. Different circuit outputs are available for all common controllers.

Three different designs are available:

Design HKB

- Ideally for flat machine panels and small, light hand-held pendant stations.



Handwheel HKB

- Design HKC
 - Suitable for installation in control panels
 - The design is particularly suitable for flat operating panels



Handwheel HKC

Design HKD

- Suitable for installation in control panels and EUCHNER HBE and HBL series hand-held pendant stations

- Suitable for integration in universal turning and milling machines for axis movement



Mechanical detent mechanism

Handwheels with mechanical detent are characterized by their light weight and shallow mounting depth.

With 100 detent positions (100 or 25 pulses)

A toothed rotor working in conjunction with a roller creates the mechanical detent position. The roller is pushed between the teeth of the rotor by a spring and the dial fixed in position. The detent moment is produced by the movement of the roller over the teeth.

There are two different designs available:

- Design HWA
 - Suitable for installation in control panels.
 - Suitable for installation in EUCHNER hand-held pendant stations
 - With single-hole bushing mounting



Handwheel HWA

- Design HWB
 - Suitable for installation in control panels
 - With 3-point fastening



Handwheel HWB

Electronic Handwheels

Handwheel HKB

- ▶ 100 detend positions per revolution
- Wear-free magnetic detend mechanism
- ▶ 100 or 25 pulses per revolution
- Pushbutton function in axial direction optional
- Ideally for flat machine panels and small, light hand-held pendant stations



Dimension drawing

Version with pushbutton function



Notes

- A05 output suitable for Siemens controllers with RS422 input
- G05 output suitable for Fanuc control systems
- ► For dial, see Accessories page 62
- ▶ For front plate, see Accessories page 62



Ordering table

Design	Number of pulses per revolution	Connection type	Detent positions	Outputs	Order No. / Item
	25	S Screw terminal	100	G12 Push pull 5 V $U_B = 10 \dots 30 \text{ V DC}$	105 137 HKB025S7G12
НКВ 100	S Screw terminal	100	A05 RS422A U _B = 5 V DC	105 134 HKB100S7A05	
			A12 RS422A U _B = 10 30 V DC	105 135 HKB100S7A12	
			G05 Push pull 5 V U _B = 5 V DC	105 136 HKB100S7G05	
				G24 Push pull 1030 V U_B = 10 30 V DC	105 138 HKB100S7G24
HKB with pushbutton function		S		AO5 U _B = 5 V DC	109 429 HKB100S7A05K

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Technical data

Parameter	Value	1	Unit
Pulses per revolution	2 x 25 oder 2	2 x 100	
Detent positions	100		
Housing material	Aluminu	m	
Detent	0.095 Magnet		Kg
Shaft load axial, max	25		N
Shaft load axial radial. max.	40		N
Mechanical life, min.	5 x 10	6	rev.
Operating temperature	0 +5	60	0°
Storage temperature	-20 +	50	0°
Atmospheric humidity, max.	80 % (condensation	n not allowed)	
of protection NEMA	1P 65 250-12	2	
Vibrations (3 axes) Shock (3 axes)	DIN/IEC 68 DIN/IEC 68	3-2-6 +2-27	
EMC protection requirements in accordance with CE	EN 61000-6-2, EN	N 61000-6-4	
Pushbutton function	1 106 /	<i>P</i>	
Mechanical service life, min.		lations	
Actuating travel	0.3 0.7 Output st	mm ago	
	A05/G05	A12/G12/G24	
Operating voltage U _B	DC 5 V ± 5 %	DC 10 30 V	
Output voltage HIGH (1), min.	4.0 V/0 mA	_	
	3.4 V/5 mA	-	
	3.0 V/20 mA	U _B - 3 V/20 mA	
LOW (0), max.	1.3 V/15 mA	3 V/20 mA	
Output circuit RS422A	005	410	
Output circuit	AUD A /A B	AIZ /B	
Output signals	5 + 5 %	10 30	V DC
Operating current, no load, max.	80	10 30	mA
Output circuit	According to RS422A, RS422 use	e differential receiver module	
Output signals cw (clockwise rotation)	25 pulses	100 pulses	
	360°		
	90°	A	
	A	/A	
	/A	B	
	B		
		200 µs 400 µs	
		800 µs	
Pin assignment	Screw terminal 7-pole, wire cross sec	tion 0.08 ² 1.5 ² (AWG 22 16),	
	tightening torquen	nax. 0.5 Nm	
	without pushbutton function	with pushbutton function	
	$\bigcirc \bigcirc $	$\bigcirc \bigcirc $	
	⊥ U _B OV A /A B /B	U _B OV A B Out	
Output circuit, push pull			
Output circuit	G05 G12	G24	
Output signals	A, B		
Operating voltage U _B	5 ± 5 %	10 30	V DC
Operating current, no load, max.	80	•	mA
Output voltage HIGH (1), min.	4.0 V / 0 mA 4.9 V / 0	mA –	-
	3.4 V / 5 mA 3.9 V / 5	mA = -	-
1 OW (0) max	<u> </u>	$O_{\rm IIIA} = O_{\rm B} - 3 V / 20 IIIA$	-
Output current per output max	1.5 V/ 15 MA 1.5 V/ 15	5 V 20 IIA	mA
Output signals cw (clockwise rotation)	25 pulses	100 pulses	110 \
	A	A	
	B	B B	
	90°	200 µs 400 µs	
	360°	800 µs	
Pin assignment	Screw terminal 7-note wire cross sect	tion $0.08^2 = 1.5^2$ (AWG 22 16)	<u> </u>
	tightening torque r	nax. 0.5 Nm	
	without pushbutton function	with pushbutton function	

Handwheel HKC

- ▶ 100 detent positions per revolution
- Wear-free magnetic detent mechanism 100 or 25 pulses per revolution ▶
- ▶
- ▶ Flat design



Dimension drawing



Notes

- A05 output suitable for Siemens controllers with RS422 input
- G05 output suitable for Fanuc control systems

Ordering table

Design	Number of pulses per revolution	Connection type	Detent positions	Outputs	Order No. / Item
	25	S Screw terminal	100	G12 Push pull 5 V U _B = 10 30 V DC	072 940 HKC025S100G12
нкс 100		S Screw terminal		A05 RS422A U _B = 5 V DC	087 733 HKC100S100A05
	100		S Screw terminal	100	G05 Push pull 5 V U _B = 5 V DC
			G24 Push pull 1030 V U _B = 10 30 V DC	087 739 HKC100S100G24	



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Technical data

Parameter		Value		Unit
Pulses per revolution		2 x 25 or 2 x 100		
Detent positions		100		
Housing material		Thermoplastic		<u> </u>
Weight		0.25		kg
Detent		Magnetic		N
Shaft loading, axial, max.		25		N N
Snatt loading, radial, max.		40		IN
		20 X 10°		rev
Storage temperature		20 +50		0 0
Atmospheric humidity may	80.9	-20 +30	ad)	
Front degree of protection EN 60529 / IEC 529	807	IP 65	50)	
NFMA 250		250-12		
Resistance to vibration		23012		
Vibrations (3 axes)		DIN/IFC 68-2-6		
Shock (3 axes)		DIN/IFC 68-2-27		
EMC protection requirements in accordance with CF	FI	N 61000-6-2, FN 61000-6-4	1	
Output circuit RS422A				
Output circuit		A05		
Output signals		A. /A. B. /B		
Operating voltage UB		5 ± 5 %		V DC
Operating current, no load, max.		80		mA
Output specifications	According to RS42	2A, RS422 use differentia	l receiver module	
Output signals cw (clockwise rotation)	25 pulses	1	100 pulses	
	2001			
			A	
	****	_		
	A	//	A	
	/A		R []	
		_		
	B	/		
		_ /!	5	
		-	200 µs 400 µs	
	/D		800 µs	
-				
Pin assignment		Screw terminal S		
		⊥ U _B OV A /A B /B		
		0000000		
Autput circuit push-pull				
Output circuit	605	612	G24	
	405	A R	424	
Operating voltage Llb	5 + 5 %	11	0 30	V DC
Operating current no load max	5 2 5 %	80		mA
Output voltage HIGH (1), min.	4.0 V / 0 mA	4.9 V / 0 mA		110.0
	3.4 V / 5 mA	3.9 V / 5 mA		1
	3.0 V / 20 mA	3.6 V / 20 mA	U _B - 3 V / 20 mA	1
LOW (0), max.	1.3 V / 15 mA	1.3 V / 15 mA	3 V / 20 mA	1
Output current per output, max.		20		mA
Output signals cw (clockwise rotation)	25 pulses		100 pulses	
	Α	L		
		1	`	
		r		
	В	1	5	
	90°		200 µs 400 µs	
	360°		800 µs	
	N			
Pin assignment		Screw terminal S		
		te ub ur n d a a a a a a a		

Handwheel HKD

- 100 detent positions per revolution
- Wear-free magnetic detent mechanism
- 100 or 25 pulses per revolution
 Installation in control panels and
- EUCHNER HBL series hand-held pendant stations





Notes

- A05 output suitable for Siemens controllers with RS422 input
- G05 output suitable for Fanuc control systems
- ► For dial, see Accessories page 62
- ▶ For front plate, see Accessories page 62

Mounting depth I

Ordering table

Connection type	l [mm]
Screw terminal S	55
Ribbon cable, 6-core V	53

Number of pulses Order No. / Design **Connection type Detent positions** Outputs per revolution Item G12 S 091 525 100 Push pull 5 V HKD025S100G12 Screw terminal $U_B = 10 \dots 30 \text{ V DC}$ 25 V G12 091 526 Push pull 5 V $U_B = 10 \dots 30 \text{ V DC}$ 100 Ribbon cable HKD025V100G12 6-core with connector A05 054 866 RS422A HKD100S100A05 U_B= 5 V DC G05 S 083 354 100 Push pull 5 V Screw terminal HKD100S100G05 $U_B = 5 V DC$ HKD G24 054 868 Push pull 10...30 V HKD100S100G24 $U_B = 10 \dots 30 \text{ V DC}$ 100 A05 057 036 RS422A HKD100V100A05 $U_B = 5 V DC$ v G05 091 527 Push pull 5 V Ribbon cable 100 HKD100V100G05 6-core with connector $U_B = 5 V DC$ G24 057 037 Push pull 10...30 V HKD100V100G24 U_B= 10 ... 30 V DC

Dimension drawing

EUCHNER

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Technical data

Parameter		Value	Unit
Pulses per revolution	2 x 2	25 or 2 x 100	
Detent positions		100	
Housing material	ŀ	Aluminum	
Weight		0.5	kg
Detent		Magnetic	
Shaft loading, axial, max.		25	N
Shaft loading, radial, max.		40	N
Mechanical life, min.		20 x 10°	rev.
Operating temperature	(0+/0	<u> </u>
Storage temperature	2- 20 0/ (acad	25 +85	
Authospheric number, max.	80 % (cond		
		250.12	
Resistance to vibration		230-12	
Vibrations (3 axes)		L/JEC 68-2-6	
Shock (3 axes)		/FC 68-2-27	
EMC protection requirements in accordance with CF	EN 61000	-6-2 FN 61000-6-4	
Output circuit RS422A	Entorooo		
Output circuit		A05	
Output signals	A	. /A. B. /B	
Operating voltage U _B		5 ± 5 %	V DC
Operating current, no load, max.		80	mA
Output circuit	According to RS422A, RS4	22 use differential receiver module	
Output signals cw (clockwise rotation)	25 pulses	100 pulses	
	•		
	360°	360°	
	90		
	Α	Α	
	B	B	
		/B	
	Detent position areas	Detent position area	
Dia anaimma at	Dible and a black		
Pin assignment	Ribbon cable V	Screw terminal S	
	/B /A OV		
		$\bigcirc \bigcirc $	
		U _B OV A /A B /B	
	вдŮ		
Output circuit push-pull			
Output circuit	605	G12 G24	
	405	A B	
Operating voltage Up	5 + 5 %	10 30	V DC
Operating current no load max	51570	80	mA
Output voltage HIGH (1) min	40V/0mA 40	9 V / 0 mA -	
	34V/5mA 39	9 V / 5 mA -	
·	3.0 V / 20 mA 3.6	5 V / 20 mA U _R - 3 V / 20 mA	
LOW (0), max.	1.3 V / 15 mA 1.3	3 V / 15 mA 3 V / 20 mA	
Output current per output, max.		20	mA
Output signals cw (clockwise rotation)	25 pulses	100 pulses	
	360°	360°	
		75° 210°	
	A	A	
	B : : : :	B	
	Detent position areas	Detent position area	
Pin assignment	Ribbon cable V	Screw terminal S	
	OV	666666	
		U _B OV A B	
	- Y - B		



Handwheel HWA

- ▶ 100 detent positions per revolution
- Mechanical detent mechanism
- ▶ 100 or 25 pulses per revolution
- Single-hole bushing mounting

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Notes

- A05 output suitable for Siemens controllers with RS422 input
- G05 output suitable for Fanuc control systems





Ordering table

Design	Number of pulses per revolution	Type of connection	Detent positions	Outputs	Order No. / Item
HWA Packaging unit 10 pcs.	25	T Screw terminal	100	G12 Push pull 5 V U _B = 10 30 V DC	072 972 HWA025T100G12/V10 (10 pcs.)
	100	т	100	A05 RS422A U _B = 5 V DC	072 970 HWA100T100A05/V10 (10 pcs.)
	100	Screw terminal	100	G05 Push pull 5 V U _B = 5 V DC	072 971 HWA100T100G05/V10 (10 pcs.)



Technical data

Parameter	Valu	9	Unit
Pulses per revolution	2 x 25 or 2	x 100	
Detent positions	100		
Housing material	Plastic/r	netal	
Weight	0.1		kg
Detent	Mechar	ical	
Shaft loading, axial, max.	25		N
Shaft loading, radial, max.	40		N
Mechanical life, min.	1 x 1(96	rev
Operating temperature	0 +	50	°C.
Storage temperature	-20 -	-50	
Atmospheric humidity max	80 % (condensation	n not allowed)	
Front degree of protection EN 60529 / IEC 529	IP65		
NFMA 250	250-1	2	
	2301	<u></u>	_
	٨٥٥		
Output circuit		/D	
Output signals	A, /A, D	9/	VDC
	5 ± 10	%	V DC
Operating current, no load, max.	80 Accession to DC400A, DC400 via	differential and a income date	
	According to RS422A, RS422 us	e differential receiver module	_
Output signals cw (clockwise rotation)	100 pu	ses	
	360'		
	90°		
	A		
	/A		
	В		
	Ľ		
	/R		
	/B		
	Detent posit	ion area	
Pin assignment	Screw terr	ninal T	
	+5V 0V A	Ā B Ā	
		a a a	
		<u>YFF</u>	
Output circuit, push-pull			
Output circuit	G05	G12	
Output signals	A, B		
Operating voltage UB	5 ± 10 %	12 ± 10 %	V DC
Operating current, no load, max.	80		mA
Output voltage HIGH (1), min.	4.0 V / 2	0 mA	
I OW (0), max.	0.5 V / 2) mA	
Output current per output, max	20	-	mA
Output signals CW (clockwise rotation)	100 pulses	25 nulses	
output signals on (clockwise rotation)	100 puises	25 puises	
	360°	360°	
	90°	<u>90°</u>	
		A ; ; ; ; ;	
	B	B 1 1 1	
	Detent position area	Detent position areas	
Pin assignment	Screw terr	ninal T	
		_	
	+U _B 0V A	АВ	
		리는리	



Handwheel HWB

- ▶ 100 detent positions per revolution
- Mechanical detent mechanism
- ▶ 100 or 25 pulses per revolution
- 3-point fixing

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Notes

- A05 output suitable for Siemens controllers with RS422 input
- G05 output suitable for Fanuc control systems



Ordering table

Design	Number of pulses per revolution	Connection Type	Detent positions	Outputs	Order No. / Item
	25 T	т	100	G12 Push pull 5 V	072 975 HWB025T100G12/V05
		Screw connection		U _B = 10 30 V DC	(5 pcs.)
HWB Packaging unit 5 pcs.	100	T Screw connection	100	A05 RS422A U _B = 5 V DC	072 973 HWB10T100A05/V05 (5 pcs.)
	100			G05 Push pull 5 V U _B = 5 V DC	072 974 HWB100T100G05/V05 (5 pcs.)



Technical data

Parameter	Value		Unit
Pulses per revolution	2 x 25 or 2 x	100	
Detent positions	100		
Housing material	Plastic/met	al	
Weight	0.125		kg
Detent	Mechanica	3	
Shaft loading, axial, max	25	•	N
Shaft loading, radial, max	40		N
Mechanical life, min	1 x 10 ⁶		rev
Operating temperature	0 +50		°C.
Storage temperature	-20 +50)	°C
Atmospheric humidity max	80 % (condensation	not allowed)	
Front degree of protection EN 60529 / IEC 529	IP65		
NEMA 250	250.12		
	230-12		
	405		
Output circuit		0	_
Output signals	A, /A, D, /I		
Operating current no load may	<u>5 ± 10 %</u>		
Output openifications	According to DS422A_DS422 use d	ifferential receiver module	
Output specifications	According to R5422A, R5422 use u		
Output signals cw (clockwise rotation)	100 pulse:	S	
	360°		
	/A		
	В		
	/B		
	Detent position		
		larea	
Din angianment	Corour tormin		+
Fill assignment	Screw termin		
	+5V 0V A Ā	BB	
Output circuit, push-pull			
Output circuit	G05	G12	
Output signals	A, B		
Operating voltage U _B	5 ± 10 %	12 ± 10 %	V DC
Operating current, no load, max.	80		mA
Output voltage HIGH (1), min.	4.0 V / 20 r	nA	
LOW (0), max.	0.5 V / 20 n	nA	
Output current per output, max.	20		mA
Output signals CW (clockwise rotation)	100 pulses	25 pulses	
		200	
	360	36U	
	4 → 90	90	
	B	B	
	Detent resition area	Detert resition evens	
	Detent position area	Detent position areas	
Din assignment	Course to make		
riii assigiiiiieiil	Screw termin	al I	
		в	



Accessories

Front plate for handwheel HKB

- Front plate with bonded seal
- Seal handwheels without front plate using sealing ring E

Ordering table

Item	Order No.
Front plate for handwheel HKB silver anodized	105 072
Front plate for handwheel HKB black anodized	105 073



Front plate for handwheel HKD

- Front plate with bonded seal
- Seal handwheels without front plate using sealing ring E

Dimensions

90	-					B 1 0
		-	DIN/4-AM5	-	-	R48
89	-	-	5.2	-	-	R48
-	65	65	4.2	-	-	R35.5
	- 89	<u>89</u> - 65	<u>89</u>	<u>89</u> <u>5.2</u> - <u>65</u> 65 4.2	<u>89 - 5.2 -</u> - 65 65 4.2 -	<u>89 5.2</u> - 65 65 4.2

Ordering table

Item	Order No.
Sealing ring E	054 861
Front plate F with seal	028 760
Front plate G with seal	028 761
Front plate M with seal	041 758

Dimension drawing



Dial for handwheel HKB

Ordering table

Item	Order No.
Dial 58 mm silver	100 914



Dials for handwheel HKD

Dimensions

Design	Øa	Øb	С
Dial 90 mm	90	63	41
Dial 78 mm	78	63	39
Dial 75 mm	75	63	39
Dial 65 mm	65	44	42
Dial 58 mm	58	44	40

Ordering table

Item	Order No.
Dial 90 mm black	057 266
Dial 90 mm silver	057 268
Dial 78 mm black	057 280
Dial 78 mm silver	057 272
Dial 75 mm black	072 633
Dial 75 mm silver	072 597
Dial 65 mm black, for kit HBL	057 318
Dial 65 mm silver, for kit HBL	057 314
Dial 58 mm black	059 276

Dimension drawing





Dimension drawing hand-held pendant stations HBA

Top shell HBA with handwheel





Top shell HBA without handwheel

Dimension drawing



Assembly drawings

Housing HBL - 073 109 and HBL - 072 632

- Mounting enabling switch ZSE2-2 C1692 (2 NO contacts, 1 positively driven contact)
- ▶ No hole for EMERGENCY STOP device

Dimension drawing



Housing HBL - 072 983 and HBL - 083 484

 Mounting enabling switch ZSE2-4 C1943 (2 NO contacts, 2 positively driven contacts)
 Mounting EMERGENCY STOP device 073 985







Appendix

Date

EUCHNER

Request form for hand-held pendant stations HBA without handwheels

Customer					
Company				Telephone	
Address				Fax	
				E-mail	
			-		
Name				Department	
First name				Date	
Housing	Gray			EMERGE	NCY 2 NC contacts
-	Black			STOP	3 NC contacts
Front foil	EUCHNER Standard			Selector	switch Without
	Customer-specific as p	er attachment		left	positions Gray code
					positions HEX code
Pushbuttons	Without			Л	positions 1 of X
	3 membrane buttons		A P	y	Labeling:
	single button				
				Selector	switch Without
LED	Without			right	positions Gray code
	With			///	positions HEX code
				/	positions 1 of X
Key-operated	Without				Labeling:
switch	With		لايت مي م		
				Enabling	device Without
Toggle switch	Without				2-stage, each 1 NO, right and left
	With:				3-stage, 2 NO, left
Potentiometer	Without				
	Technical specification		\mathcal{A}		
			\square		
Joystick	Without		\square		
	With KE		\bigtriangledown		
			\square		
Cable	Coiled 1.5 m, can b	e streched to 3.5 m	γ		
	Coiled 2.0 m, can be s	treched to 5.0 m	ñ		
	Straight: m				
	_				
Plug connector	Burndy metal				
	Coninvers metal				
	Other:				
	Without plug connecto		¢		
		Further com	ponents and versions	on request	
				-	
Special require	ements				
-peeter require					
Quotation					
Quantity		One-off project re	equirement	Series	s production requirement per year
Delivery date I	requested	Week			

Signature

Appendix

EUCHNER

Request form for hand-held pendant stations HBA with handwheels

Customer						
Company				Telephone		
Address				Fax		
				E-mail		
Name				Department		
First name				Date		
					_	
Housing	G	ray	Line Line Line Line Line Line Line Line	EMERGEN	CY	2 NC contacts
	BI	ack		STOP		3 NC contacts
			1 10 100 Y Z 4 0, 1000 X 5		-	
Front foil	E	UCHNER Standard		Selector su	witch	Without
	Cı	ustomer-specific as per attachment		left		positions Gray code
						positions HEX code
Pushbuttons	w	ïthout				positions 1 of X
	3	membrane buttons				Labeling:
	<u> </u>	single button				
				Selector su	witch	Without
LED	w	lithout		right		positions Gray code
	W	ith				positions HEX code
			Contraction of the second seco			positions 1 of X
Key-operated	w	lithout				Labeling:
switch	W	ith				
				Enabling d	evice	Without
Toggle switch	w	lithout				2-stage, each 1 NO, right and left
	W	ith:				3-stage, 2 NO, left
			E C			
Potentiometer	w	lithout	Л	Handwheel	I	Without
	Te	chnical specification:	\square	See catalog	ue	magnetic
			\square	Page 01		mechanical
Joystick	w	ïthout				A05, 100 pulses, RS422
	W	ith KE				G05, 100 pulses
	_		\square			G12, 25 pulses
Cable	C	oiled 1.5 m, can be streched to 3.5 m	LT -			G24, 100 pulses
	Co	biled 2.0 m, can be streched to 5.0 m	Π		r	
	St	raight: m		On which		Siemens, type:
				control sys	stem	Fanuc, type:
Plug connector	B	urndy metal	handwhe		ı	Mitsubishi, type:
	Co	oninvers metal		be operate	ed?	Other / brand:
	0	ther:				
	W	ithout plug connector				
		Further co	mponents and versions	on request		

 Special requirements

 Quotation

 Quantity
 One-off project requirement

 Delivery date requested
 Week

 Date
 Signature



Hand-held pendant stations HBL request form

Customer				-	1	
Company				Telephone		
Address				Fax		
				E-mail		
Name				Department		
First name				Date		
Front plate		UNER Standard				2 NC contracto
i ioni plate	blac	k anodized		STOP		1 NC contacts
	silve	r labeling		\ \	-	Without
	Cust	omer-specific as per attach	nent EUCHNER	E I. P	Г	
Logo	With	out			device	2-tage, 2SG, each 1 NO, right + left 3-stage, 7SE 2-2 (2 NO + 1 NC) only left
Logo	Cust	omer-specific as per attach	ment		-	3-stage, ZSE 2-2 (2 NO + 2 NC) only left
					-	Without enabling device
Pushbutton	With	out		Salaatar	awitah	Without
	Num	ber of NO contacts		left	SWITCH	Positions Gray code
	Num	ber of NC contacts		1	-	Positions HEX code
	Not	illuminated)	F	Positions 1 of X
		mated				Labeling:
	as pe	er attachment		Selector	switch	Without
	Front	plate labeling		left		Positions Gray code
	as pe	er attachment				Positions HEX code
Key-operated	With	out				Positions 1 of X
switch	With					Labeling:
				Labeling	Γ	Through scale wheels
Lamp/LED	Cust	OUT omor specific as por attach	nont	selector s	switches	On front plate
		uner-specific as per attach		Handwhe	el 🗌	without
Potentiometer	With	out		see catalo	ogue	Magnetic
	Tech	nical specification:		page 60 -	- /2	Mechanical
				\backslash		A05, 100 pulses, RS422
Cable	Coi	led 1.5 m, can be strech	ed to 35 m		_	G05, 100 pulses
	Coil	ed 2.0 m, can be streched	to 5.0 m		-	G12, 25 pulses
	Stra	lignt: m	\setminus		L	G24, 100 pulses
Plug connector	Burr	ndv metal 🔨		\ Dial	_	EUCHNER Logo
C	Conii	nvers metal	×		-	Customer-specific logo as per attachment
	Othe	r:	\square		-	Black 65 mm
	Witho	out plug connector	ر ل		-	Silver 75 mm
					-	Black 75 mm
				On which	, r	Siemens type:
	nonte co i	vousions on research		control s	ystem	Fanuc. type:
Further compo	nents and	versions on request		will the		Mitsubishi, type:
				be opera	ited?	Other / brand:
			Le la			—
Special requ	irements					
Quotation			ing off project requirement	Carita	product	
Quantity				Series	s productio	ni requirement per year
	erequest					
Date				Sign	ature	

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Cable, 23-core, straight, 5000 mm	007 302	42	Handwheel HKC1005100A05	007 733	54
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Cable, 35-core, straight, 10000 mm	097 187	42		091 526	50
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Dial 90 mm silver	057 268	62	Handwheel HWB101100A05/V05	0/29/3	60
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