Hand-held Pendant Stations/ Handwheels





EUCHNER More than safety.





Headquarters in Leinfelden-Echterdingen

Logistics center in Leinfelden-Echterdingen



Production location in Unterböhringen

Internationally successful – the EUCHNER company

EUCHNER GmbH + Co. KG is a world-leading company in the area of industrial safety technology. EUCHNER has been developing and producing high-quality switching systems for mechanical and systems engineering for more than 60 years.

The medium-sized family-operated company based in Leinfelden, Germany, employs around 800 people around the world.

18 subsidiaries and other sales partners in Germany and abroad work for our international success on the market.

Quality and innovation – the EUCHNER products

A look into the past shows EUCHNER to be a company with a great inventive spirit. We take the technological and ecological challenges of the future as an incentive for extraordinary product developments.

EUCHNER safety switches monitor safety doors on machines and installations, help to minimize dangers and risks and thereby reliably protect people and processes. Today, our products range from electromechanical and electronic components to intelligent integrated safety solutions. Safety for people, machines and products is one of our dominant themes.

We define future safety technology with the highest quality standards and reliable technology. Extraordinary solutions ensure the great satisfaction of our customers. The product ranges are subdivided as follows:

- ► Transponder-coded Safety Switches
- ► Transponder-coded Safety Switches with guard locking
- ► Multifunctional Gate Box MGB
- Access management systems (Electronic-Key-System EKS)
- ► Electromechanical Safety Switches
- ► Magnetically coded Safety Switches
- ► Enabling Switches
- Safety Relays
- ► Emergency Stop Devices
- ► Hand-Held Pendant Stations and Handwheels
- Safety Switches with AS-Interface
- Joystick Switches
- Position Switches



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Hand-held Pendant Stations/Handwheels

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About this catalog

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

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

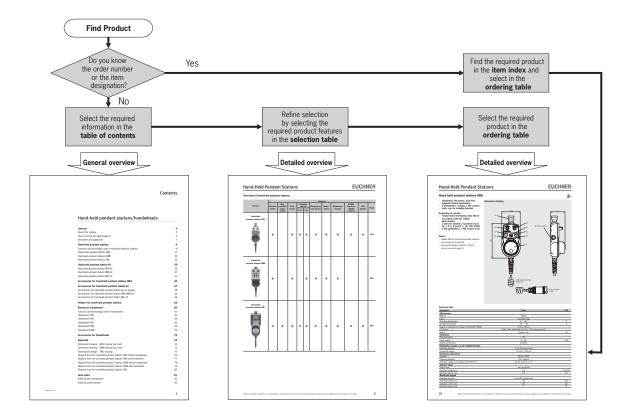
You will find the following series and accessories in this catalog:

| | Hand-held pendant stations/handwheels | | | | | | | | | | |
|----------------------------|---------------------------------------|----------------|----------------|------------------|----------------|---------------------------|----------------|----------------|----------------|---------------------|------------------|
| Hand-held pendant stations | | | | | | Hand | vheels | | | | |
| Cor | nplete devi | ces | Kit | Accesso- ries | Holder | Magnetic detent mechanism | | | | cal detent anism | Accesso- ries |
| НВА | HBM | HBL | | | | HKB | HKC | HKD | HWA | HWB | |
| | | | | | | | | 6 | | | |
| See page 10 | See page 20 | See page 24 | See page 29 | See page 45 | See page 58 | See page 62 | See page 64 | See page 66 | See page 68 | See page 70 | See page 72 |

How can I find the right product?

There are two ways you can find the right product:

- If you know the order number or the item designation, look for the product directly in the item index (see page 81 or page 83).
- ② 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/EC. 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 hand-held 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 rotary 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.

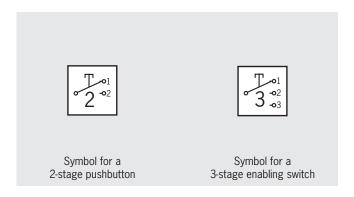
Two-stage or three-stage enabling switch?

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. All pushbuttons and all 3-stage enabling switches feature this two-stage function (OFF-ON).

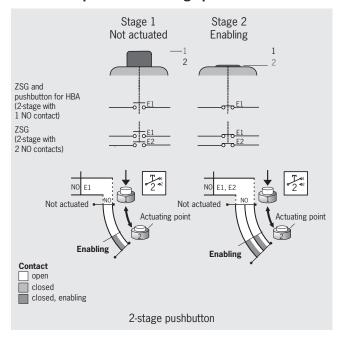
However, experience shows that the operator often clenches the enabling device in an emergency.

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.

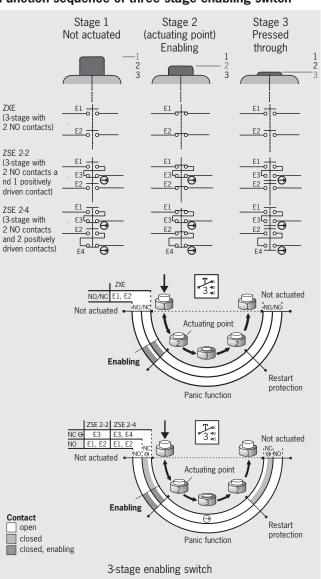
If a 2-stage pushbutton is used, it must also be ensured that, in an emergency, the operator is in a position to activate an emergency stop device in close proximity (VDI 2853). To identify the type of enabling device in the catalog, the following symbols are used:



Function sequence of two-stage pushbutton



Function sequence of 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 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 also the safe positively driven contacts (NC \oplus) in case of the ZSE series.

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 re-starting 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 HBA, HBM and HBL housings have been developed such that they fit optimally in the hand. Well-known manufacturers of machine tools and control systems 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 happy to draw up a quotation based on your requirements.

Hand-held pendant stations from EUCHNER

Hand-held pendant stations from EUCHNER are characterized by their robust, ergonomic and attractive design. They are used to control axis movements of machines in setup mode, for example. The modular design of every unit permits an individual combination of safety components and functions as required by the customer. Depending on the size required and the functions to be integrated, EUCHNER offers three different types of hand-held pendant stations:

► HBA

The HBA is the smallest and handiest of the hand-held pendant stations from EUCHNER. Its compact size allows the HBA to be fastened on the machine without taking up much space. Its low weight permits comfortable working and operation, even over extended periods.

▶ HBM

The HBM is based on the ergonomic shape of the HBA. It additionally offers more space and greater flexibility for integrating more components and functions.

▶ HRI

The HBL is the largest hand-held pendant station from EUCHNER. It is especially robust and offers maximum flexibility for custom combination of components, even components with a larger depth.

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 hand-held 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 switching contact 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 \ominus behind the NC defines that the NC contact is a positively driven contact. This switch therefore has one normally closed contact and one normally open contact; the normally closed contact is a positively driven contact.





Overview of hand-held pendant stations

| | | | | | | Feat | ures | | | | |
|--------------------------------|--------------------|--------------------------------------|-----------------|----------------------|------------------------|-----------------------|----------------|--------------------|--|----------------|------|
| Version | Selector switch | Key- operated rotary switch | Push- button | Enal dev 2-st. | oling vice 3-st. | Emergency stop device | Hand- wheel | Membrane keypad | RS422 interface, 3964R protocol | LCD display | Page |
| Hand-held pendant stations HBA | • | | • | • | • | • | • | • | • | • | 10ff |
| Hand-held pendant stations HBM | • | | • | | • | • | • | • | | | 20ff |
| Hand-held pendant stations HBL | • | • | • | • | • | • | • | • | • | • | 24ff |



Hand-held pendant stations HBA

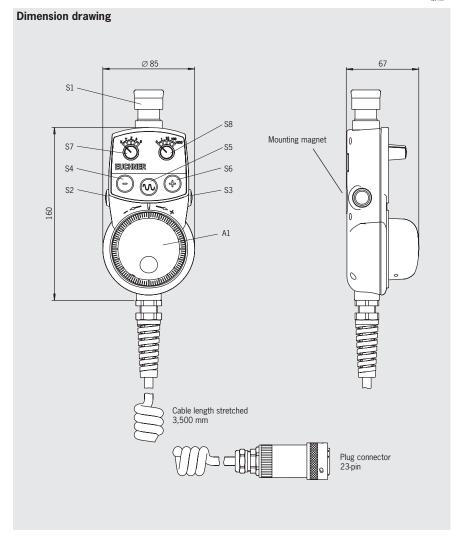
- ► Handwheel 100 pulses, wear-free magnetic detent mechanism
- ▶ 2 pushbuttons, 2-stage, 1 NO contact each, e.g. for enabling function

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 foil pushbuttons, 1 NO contact each

Notes

- ▶ Holder HBA for hand-held pendant stations: see accessories page 58
- ► Associated flange connector, 23-pin: see accessories page 51



| Parameter | Value | Unit |
|---|---|----------|
| HBA housing | Value | Offic |
| Material | Plastic | |
| Color | Grav RAL 7040 | <u> </u> |
| | 0 +50 | °C |
| Operating temperature | | °C |
| Storage temperature | -20 +50 | |
| Degree of protection according to EN 60529 / NEMA | IP 65 / 250-12 | |
| Connection | Coiled cable, stretchable to 3.5 m, 23-pin plug connector | |
| Weight | Approx. 0.8 | 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, one NO contact each | |
| Connection ratings | 30 V DC / 100 mA | |
| Emergency stop device | · | |
| Standard | EN ISO 13850 | |
| Switching elements | 2 NC contacts | |
| Utilization category according to IEC 60947-5-1 | DC-13, U _e 24 V, I _e 3 A | |
| Selector switch | | |
| Output code | see circuit plan | |
| Switching voltage max. | 25 | V AC/DC |
| Breaking capacity max. | 0.2 | VA |
| Membrane keypad | · · · · · · · · · · · · · · · · · · · | |
| Switching elements | 3, one NO contact each | |
| Switching voltage max. | 30 | V DC |
| Switching current max. | 100 | mA |
| Breaking capacity max. | 1 | W |



| ordering table | | Features | | | | | | |
|--------------------------------|----------------------|---|--|--|-----------------------|---------------------------------------|-----------|--|
| Version/item | | 2 selector switches 5 positions each | 3 foil push- buttons, 1 NO | 2 pushbuttons 2-stage | Emergency stop device | Handwheel 100 pulses | Order no. | |
| | | \$7, \$8 | contact each S4, S5, S6 | \$2, \$3 | S1 | A1 | | |
| НВА-079828 | EUCHNER | | | • | | • | 079828 | |
| HBA-079826 | EUCHNER | • | | • | • | • | 079826 | |
| НВА-072936 | EUCHNER (-) (-) (+) | | • | • | • | • | 072936 | |
| НВА-079827 | EUCHNER (C) (C) (T) | • | • | • | • | • | 079827 | |
| Circuit plan | | S8: S7: Axle selection Selector switch right 5 positions S7: S8 | S4: Push button left S5: Push button middle S6: Push button right | S2 (left) + S3 (right): Pushbutton 2-stage e.g. for enabling function | S1: Emergency Stop | A1: Handwheel | | |
| * Travel diagram see page 6 | | S S S S S S S S S S | S6 S5 S4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | ×[]-[] ±[]∪[] | F E E E E E E E E E | | |



Hand-held pendant stations HBA

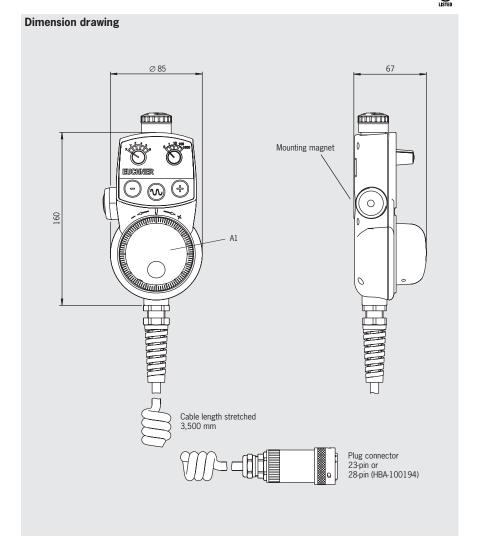
- ► Handwheel 100 pulses, wear-free magnetic detent mechanism
- 1 enabling switch, 3-stage,2 NO contacts each

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 foil pushbuttons, 1 NO contact each

Notes

- ► Holder HBA for hand-held pendant stations: see accessories page 58
- ► Associated flange connector, 23-pin: see accessories page 51
- ► Associated flange connector, 28-pin: see accessories page 51



| Parameter | Value | Unit |
|---|---|---------|
| HBA housing | | |
| 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 | Spiral cable, stretchable to 3.5 m, plug connector 23-pin or 28-pin (HBA - 100 194) | |
| Weight | Approx. 0.8 | kg |
| Handwheel | | |
| Pulses/revolution | 100 | |
| Power supply | 5 ± 5% | V DC |
| Output specifications | RS422A | |
| Enabling switch ZXE, 3-stage | | |
| Switching elements | 2 NO contacts | |
| Utilization category according 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 according to IEC 60947-5-1 | DC-13, U _e 24 V, I _e 3 A | |
| Selector switch | | |
| Output code | see circuit plan | |
| Switching voltage max. | 25 | V AC/DC |
| Breaking capacity max. | 0.2 | VA |
| Membrane keypad | | |
| Switching elements | 3, one NO contact each | |
| Switching voltage max. | 30 | V DC |
| Switching current max. | 100 | mA |
| Breaking capacity max. | 1 | W |



| | | Features | | | | | | |
|--|--|---|--|-----------------------|---------------------------------------|-----------|--|--|
| Version/item | 2 selector switches, 5 and 6 positions | 3 foil push- buttons, 1 NO contact each | 1 enabling switch ZXE, 3-stage | Emergency stop device | Handwheel 100 pulses | Order no. | | |
| EUCHNER HBA-100186 | | | • | | • | 100186 | | |
| HBA-100212 | | | • | • | • | 100212 | | |
| HBA-100213 | | • | • | • | • | 100213 | | |
| HBA-100194 C C C C C C C C C C C C C C C C C C | • | • | • | • | • | 100194 | | |
| Circuit plan | Increment selection Axle selction Selector switch right Selector switch left | Pushbutton left | Enabling switch * ZXE 3-stage | Emergency Stop | A1: Handwheel | | | |
| | 5 positions 6 positions S8 DCSA 1 0000 0 2 0001 1 2 0001 Y 3 0011 10 3 0011 Z 4 0010 100 4 5 0110 1000 5 0110 5 6 0111 6 5 6 0111 6 5 6 6 6 6 6 6 6 6 | Pushbutton right | left | | | | | |
| * Travel diagram | | \$6 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | 3 2 1 W 1 S2 | | B B B B B B B B B B B B B B B B B B B | | | |
| see page 6 ** Plug contact U on HBA-100213 (plug connector, 23-pin) Plug contact a on HBA-100194 (plug connector, 28-pin) | +24 Volt | | \(\a\) Z\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | ×[]¬[] ±[]¤[] | | | | |



Hand-held pendant stations HBA

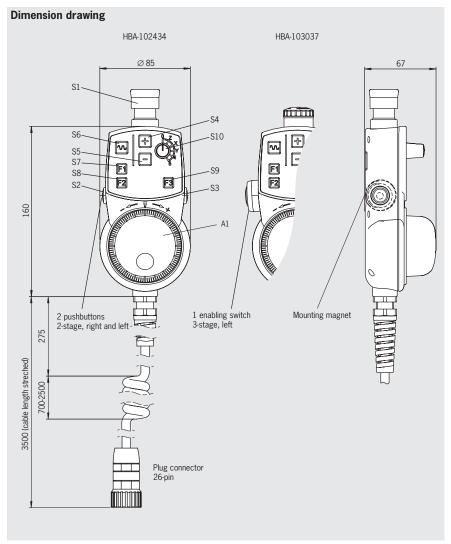
- ► Handwheel 100 pulses, wear-free magnetic detent mechanism
- Tamper-proof emergency stop device according to EN ISO 13850, dual-channel
- ▶ 1 selector switch, 6 positions (0, Z, X, Y, 4, 5)
- ▶ 6 foil pushbuttons, 1 NO contact each

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

- ► Holder HBA for hand-held pendant stations: see accessories page 58
- Associated connection kit comprising 26-pin connection box and short-circuit plug: see accessories page 45
- ► Function compatible with Siemens MINI BHG



| Parameter | Value | Unit |
|---|---|----------|
| HBA housing | | |
| 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, stretchable to 3.5 m, 26-pin plug connector | |
| Weight | Approx. 0.8 | kg |
| Handwheel | | |
| Pulses/revolution | 100 | |
| Power supply | 5 ± 5% | V DC |
| Output specifications | RS422A | |
| Emergency stop device | | |
| Standard | EN ISO 13850 | |
| Switching elements | 2 NC contacts | |
| Utilization category according to IEC 60947-5-1 | DC-13, U _e 24 V, I _e 3 A | |
| Selector switch | | |
| Output code | see circuit plan | |
| Switching voltage max. | 25 | V AC/ DC |
| Breaking capacity max. | 0.2 | VA |
| Membrane keypad | | |
| Switching elements | 6, one NO contact each | V AC/DC |
| 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, one NO contact each | mA |
| Connection ratings | 30 V DC / 100 mA | W |
| Enabling switch ZXE, 3-stage | | |
| Switching elements | 1, 2 NO contacts | |
| Utilization category according to IEC 60947-5-1 | DC-13, U _e 24 V, I _e 0.1 A | |



| Features | | | | | | | |
|-----------------------------|---|--|---|--------------------------------------|-----------------------|--|-----------|
| Version/item | 1 selector switch 6 positions | switch 5 foll pushbuttons, pus | | 2 enabling switch tage ZXE, 3-stage | | Handwheel 100 pulses | Order no. |
| | S10 | S4, S5, S6, S7, S8, S9 | S2, S3 | S2 | S1 | A1 | |
| HBA-102434 F1 F2 EUCHNER F3 | | • | • | | • | • | 102434 |
| HBA-103037 | • | • | | • | • | • | 103037 |
| Circuit plan | S10: Selector switch right 6 positions S10 CBA 1 011 0 2 010 Z 3 110 X 4 111 Y 5 101 4 6 100 5 | S4: Push button "+" S5: Push button "-" S6: Push button "-" S7: Push button "1:" 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 | |
| | Po SIO | \$9 \$8 \$7 \$6 \$5 \$4 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 | \$3 \$2 | 3 2 1 | | A A A A A A A A A A A A A A A A A A A | |
| * Travel diagram see page 6 | Schirm 100 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 | 7] 8] 4] E] 2] I] 9] | 9 2 | 7 9 2 | 4] E] 2[1] | 20 元 元 元 元 元 元 元 元 元 元 元 元 元 元 元 元 元 元 元 | |



Hand-held pendant stations HBA

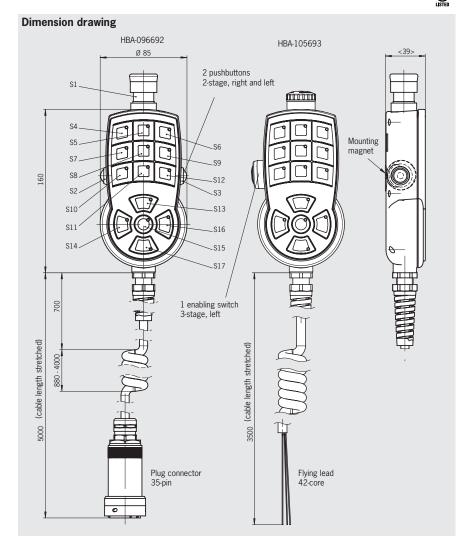
- Membrane keypad can be labeled as required using slide-in strips
- Tamper-proof emergency stop device according to EN ISO 13850, dual-channel
- LEDs white, color customer-specific using colored keypad membrane

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, stretchable to 5 m, 35-pin plug connector
- Coiled cable, stretchable to 3.5 m, 42-core, flying lead

Notes

- ► Holder HBA for hand-held pendant stations: see accessories page 58
- ► Associated flange connector, 35-pin: see connection components page 51
- ► For template for slide-in strips, see www.euchner.de (Support)



| Technical data | *** | |
|---|--|------|
| Parameter | Value | Unit |
| HBA housing | | |
| 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, stretchable to 5 m, 35-pin plug connector Coiled cable, stretchable to 3.5 m, 42-core, flying lead | kg |
| Weight | Approx. 0.8 | kg |
| Emergency stop device | | |
| Standard | EN ISO 13850 | V DC |
| Switching elements | 2 NC contacts | |
| Utilization category according to IEC 60947-5-1 | DC-13, U _e 24 V, I _e 3 A | |
| Membrane keypad | | |
| Switching elements | 14, one 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, one 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 according to IEC 60947-5-1 | DC-13, U _e 24 V, I _e 0.1 A | |



| | Features | | | | | | | |
|--------------------------------|--|--|--|-----------------------------|-----------|--|--|--|
| Version/item | Membrane keypad | Pushbutton, 2-stage | switch ZXE, 3-stage | Emergency stop device | Order no. | | | |
| HBA-096692 | \$4 - \$17 | \$2, \$3 | \$2 | • | 096692 | | | |
| HBA-105693 | • | | • | • | 105693 | | | |
| Circuit plan | S4 - S17: Membrane keypad H317 \H316 \H315 \H314 \H313 \H312 \H311 \H310 \H39 \H38 \H37 \H386 \H37 \H386 \H386 \H387 \H386 \H386 \H387 \H386 \H386 \H387 \H386 \H386 \H387 \H386 \ | S2: Enabling switch* 2-stage left S3: Enabling switch* 2-stage right Ass Ass Ass Ass Ass Ass Ass A | S2: Enabling switch* ZXE 3-stage left 2 1 2 1 3 2 2 3 2 3 2 3 2 3 2 3 2 3 2 3 | S1: Emergency Stop | | | | |
| * Travel diagram see page 6 | | | | | | | | |



Hand-held pendant stations HBAS

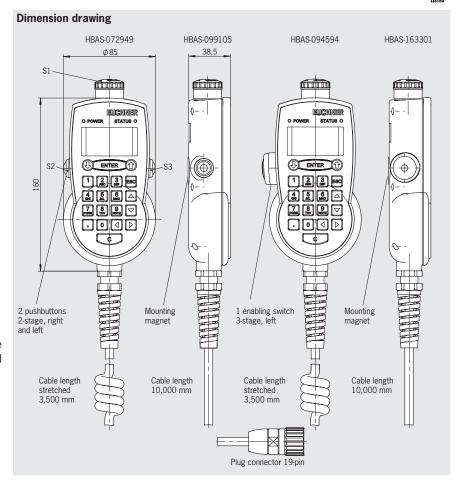
- ► Programmable pulse generator
- ▶ Tamper-proof emergency stop device according to EN ISO 13850, dual-channel
- Membrane keypad with 20 keys and 2 LEDs
- ▶ LCD display with LED background lighting, switchable 4-line/8-column or 8-line/16-column
- ► RS422 interface, 3964R protocol

Depending on version:

- ▶ 2 pushbuttons, 2-stage, 1 NO contact each, e.g. for enabling function
- ▶ 1 enabling switch, 3-stage, 2 NO contacts
- ► Coiled cable stretchable to 3.5 m
- ▶ Straight connection cable, length 10 m

Notes

- ► Holder HBA for hand-held pendant stations: see accessories page 58
- Associated male flange connector, 19-pin: see accessories page 45
- ActiveX module available for integrating the user's applications (for MS Windows®-based user programs with ActiveX support)



| Parameter | Value | Unit |
|---|--|------|
| HBA housing | | |
| 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 | Spiral cable, stretchable to 3.5 m, or straight connection cable, length 10 m. | , |
| | Plug connector, 19-pin | |
| 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 according to IEC 60947-5-1 | DC-13, U _e 24 V, I _e 3 A | Α |
| 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 ± 20% | V DC |
| Operating current, max. | 100 | mA |
| Pushbutton, 2-stage, e.g. for enabling function | | |
| Switching elements | 2, one 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 according to IEC 60947-5-1 | DC-13, U _e 24 V, I _e 0.1 A | - |



| | | Features | | | | | |
|--------------------------------|---|---|---|--|------------------|--|--|
| Version/item | pushbuttons, 2-stage \$2, \$3 | 1 enabling switch ZXE, 3-stage S2 Emergency stop device | | Programmable pulse generator, membrane keypad, display, RS422 interface, 3964R protocol | Order no | | |
| HBAS-072949 HBAS-099105 | • | | • | • | 072949 099105 | | |
| HBAS-094594 HBAS-163301 | | • | • | • | 094594 163301 | | |
| Circuit plan | S2 (left) + S3 (right): Pushbutton 2 stage e.g. for enabling function | S2: Enabling switch ZXE 3 stage left | S1: Emergency Stop | ped dáy sand c | | | |
| | | 3 02 52 | | Program- memory Microcontroller Display- memory FLASH RAM | | | |
| | S3 T S2 T | 2 2 EI EE | - / ₁ -/ ₁ -/ ₂ -/ ₂ -/ ₃ S1 | Interface Communication Pulse Generator Interface RS422 RS422 Power Supply PUS B RS422 POWER Supply POWER Sup | | | |
| | BNGY GWMH | | WHYE BNGN GNWH GYPK | 7 7 7 8 8 8 8 8 8 7 7 1 1 1 1 1 1 1 1 1 | | | |
| * Travel diagram see page 6 | 11 18 19: | 17 17 18 19 19 19 19 19 | 110 11 11 11 11 11 11 11 11 11 11 11 11 | | | | |

| ActiveX module Software for integration into user software that supports ActiveX | 093011 |
|--|--------|
| ActiveX module manual Detailed documentation on use of the software | 093013 |



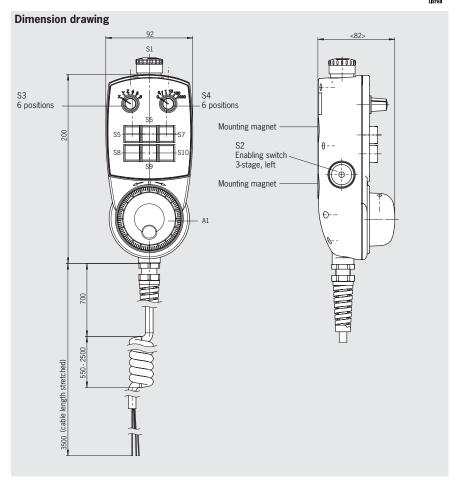
Hand-held pendant station HBM-111711

- ► Handwheel 100 pulses, wear-free magnetic detent mechanism
- Tamper-proof emergency stop device according to EN ISO 13850, dual-channel
- 1 enabling switch, 3-stage,2 NO contacts
- 2 selector switches, 6 positions each (X, Y, Z, 4, 5, 6 and 0, 0.1, 1, 10, 100, 1000)
- 6 illuminated pushbuttons, can be individually labeled
- ► Coiled cable, stretchable to 3.5 m, 35-core, flying lead



Notes

► Holder HBM for hand-held pendant stations: see accessories page 58



| necimical data | W.L | 11.5 |
|---|--|--------------|
| Parameter | Value | Unit |
| HBM housing | | , |
| Material | Plastic | |
| Color | Anthracite | |
| 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, stretchable to 3.5 m, 35-core, flying lead | |
| Weight | Approx. 1.1 | kg |
| Handwheel | | |
| Pulses/revolution | 100 | |
| Power supply | 5 ± 5% | V DC |
| Output specifications | RS422A | |
| Emergency stop device | | |
| Standard | EN ISO 13850 | |
| Switching elements | 2 NC contacts | |
| Utilization category according to IEC 60947-5-1 | DC-13, U _e 24 V, I _e 3 A | A |
| Enabling switch ZXE, 3-stage | | |
| Switching elements | 1, 2 NO contacts | |
| Utilization category according to IEC 60947-5-1 | DC-13, U _e 24 V, I _e 0.1 A | |
| Selector switch | | |
| Output code | see circuit plan | |
| Switching voltage max. | 25 | V AC/DC |
| Breaking capacity max. | 0.2 | VA |
| Buttons | | |
| Switching elements | 3, one NO contact each | |
| Switching voltage max. | 30 | V DC |
| Switching current max. | 100 | mA |
| LED | I = 21 mA / U = 24 V DC | |
| | , | |



 Item
 Order no.

 Hand-held pendant station HBM-111711 with:
 ► Handwheel 100 pulses

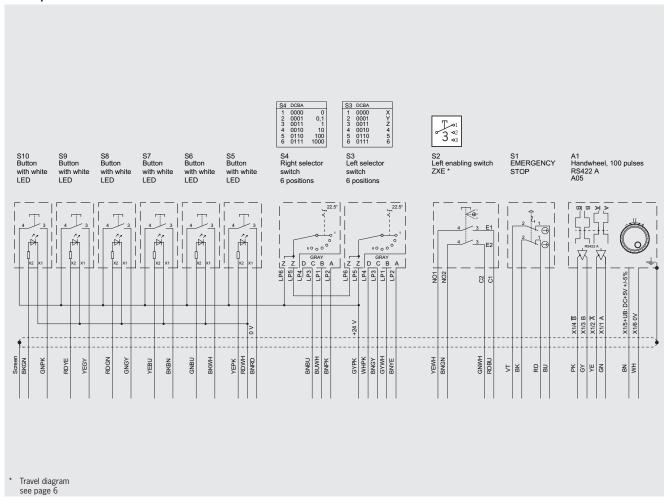
 ► Tamper-proof emergency stop device according to EN ISO 13850, dual-channel
 111711

 ► Enabling switch ZXE, 3-stage, 2 NO contacts,
 111711

2 selector switches, 6 positions each

▶ 6 illuminated pushbuttons, 1 NO contact each

Circuit plan



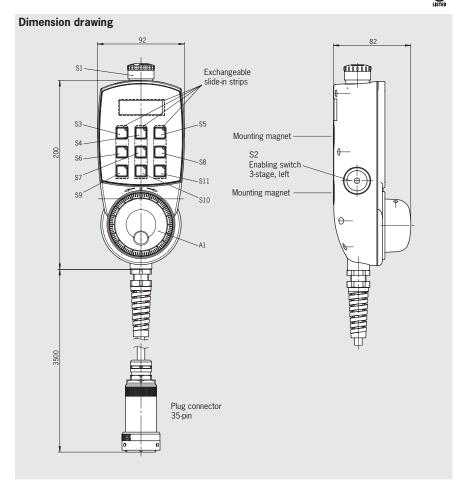
Hand-held pendant station HBM-112392

- ► Handwheel 100 pulses, wear-free magnetic detent mechanism
- Tamper-proof emergency stop device according to EN ISO 13850, dual-channel
- 1 enabling switch, 3-stage,2 NO contacts
- 9 illuminated foil pushbuttons, 1 NO contact each, can be labeled as required using slide-in strips
- Straight connection cable, length 3.5 m, plug connector 35-pin



Notes

- ► Holder HBM for hand-held pendant stations: see accessories page 58
- ► Associated flange connector, 35-pin: see connection components page 51
- ► For template for slide-in strips, see www.euchner.de (Support)
- ▶ Replacement for hand-held pendant stations HBE-097337 and HBE-097338



| Parameter | Value | Unit |
|---|--|------|
| HBM housing | | |
| Material | Plastic | |
| Color | Anthracite | |
| Operating temperature | 0 +50 | °C |
| Storage temperature | -20 + 50 | °C |
| Degree of protection according to EN 60529 / NEMA | IP 65 / 250-12 | |
| Connection | Straight connection cable, length 3.5 m, plug connector 35-pin | |
| Weight | Approx. 1.1 | kg |
| Handwheel | | |
| Pulses/revolution | 100 | |
| Power supply | 5 ± 5% | V DC |
| Output specifications | RS422A | |
| Emergency stop device | | |
| Standard | EN ISO 13850 | |
| Switching elements | 2 NC contacts | |
| Utilization category according to IEC 60947-5-1 | DC-13, U _e 24 V, I _e 3 A | Α |
| Enabling switch ZXE, 3-stage | | |
| Switching elements | 1, 2 NO contacts | |
| Utilization category according to IEC 60947-5-1 | DC-13, U _e 24 V, I _e 0.1 A | |
| Membrane keypad | | |
| Switching elements | 14, one NO contact each | |
| Switching voltage max. | 30 | V DC |
| Switching current max. | 100 | mA |
| Breaking capacity max. | 1 | W |



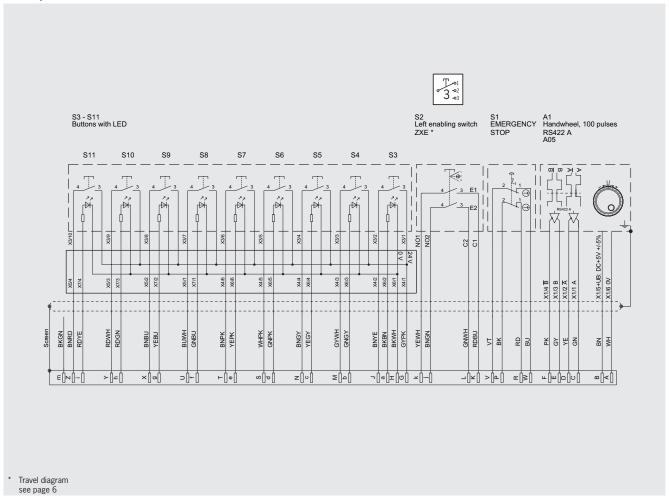
Item Order no.

Hand-held pendant station HBM-112392 with:

- ► Handwheel 100 pulses
- Tamper-proof emergency stop device according to EN ISO 13850, dual-channel
- ► Enabling switch ZXE, 3-stage, 2 NO contacts,
- ▶ 9 illuminated foil pushbuttons, 1 NO contact each
- ► Slide-in strips for logo

112392

Circuit plan



²³



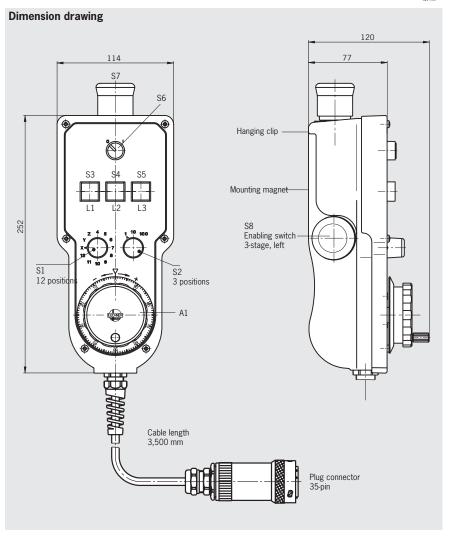
Hand-held pendant station HBL-097339

- ► 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 rotary switch



Notes

- ► Holder HBL for hand-held pendant stations: see accessories page 58
- ► Associated flange connector, 35-pin: see connection components page 51



| Parameter | 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 according to IEC 60947-5-1 | DC-13 U _e 24 V I _e 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 according to IEC 60947-5-1 | AC-15 U_e 24 V_e I_e 4 A | |
| | DC-13 U _e 24 V I _e 3 A | |
| Buttons | | |
| Switching elements | 3, one 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 |
| Key-operated rotary switch | | |
| Switching voltage max. | 30 | V AC/DC |
| Switching current max. | 250 | mA |



097339

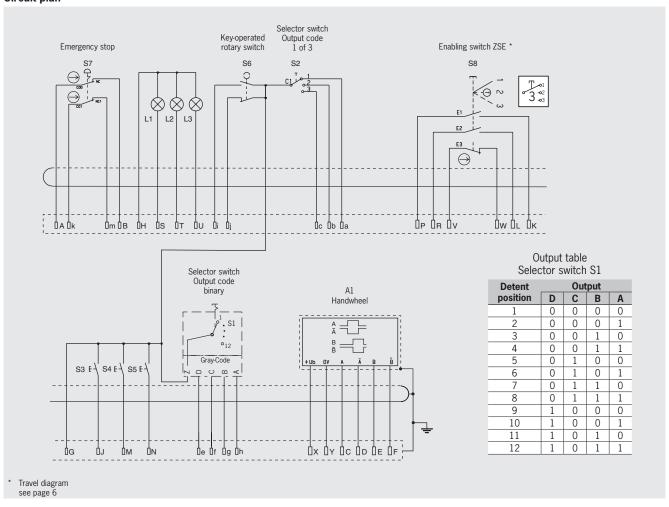
Ordering table

Item Order no.

Hand-held pendant station HBL-097339 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 contact, 1 NC contact

Circuit plan



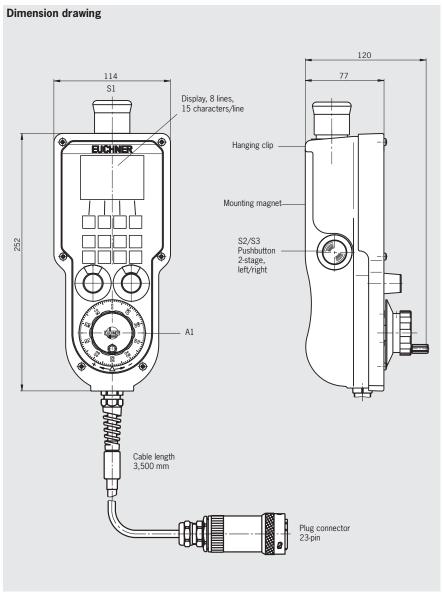
Hand-held pendant station HBLS-072725

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



Notes

- ► Holder HBL for hand-held pendant stations: see accessories page 58
- ► Associated flange connector, 23-pin: see connection components page 51
- ► ActiveX module available for integrating the user's applications (for MS Windows®-based user programs with ActiveX support)



| Parameter | 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 according 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, one NO contact each | |
| Utilization category according 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 | |
| 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 |
| Operating current, max. | 200 | mA |



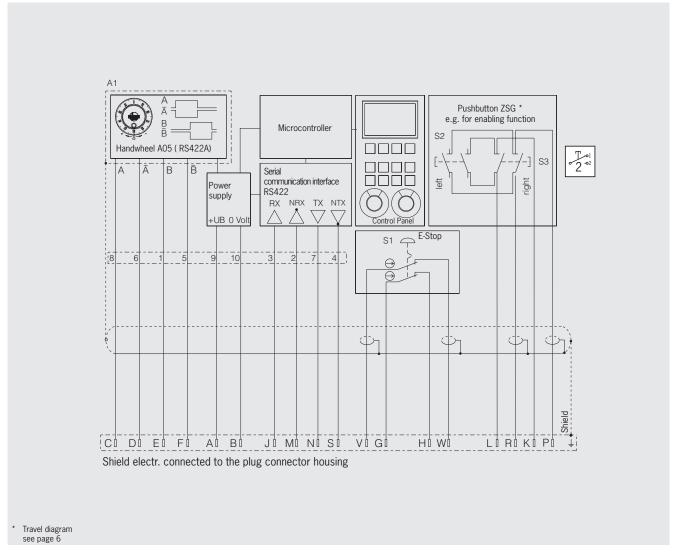
Order no.

Hand-held pendant station HBLS-072725 with:

- ► Handwheel 100 pulses
- 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
- Keypad with 12 illuminated keys
- ▶ 2 selector switches, 12 positions each

072725

Circuit plan



ActiveX module 067176 Software for integration into user software that supports ActiveX ActiveX module manual 067178 Detailed documentation on use of the software





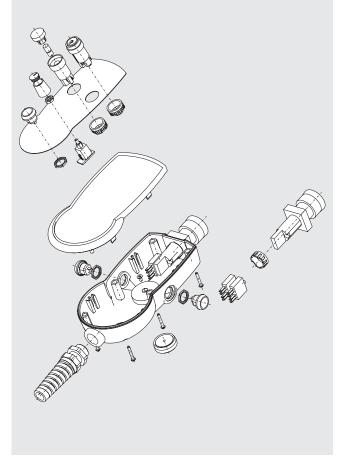
Hand-held pendant station HBA kit

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. To match the housings, aluminum front panels are available in silver or black anodized.

Customer-specific functionality can be achieved by using the components supplied in the kit (pushbutton, selector switch, key-operated rotary switch, handwheel, enabling switch, etc). For connection to the control system, cables with different numbers of wires, plug connectors and the relevant flange sockets are available. The type of protection IP 65 can be achieved using one of the seals included.

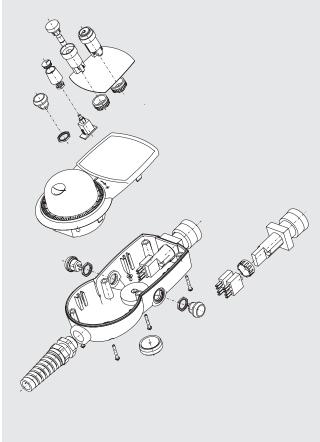
HBA kit without handwheel

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



HBA kit with handwheel

The versions with handwheels, some with 2-stage pushbutton or 3-stage enabling switch, are distinguished by the output stages of the handwheels and are adapted to various control systems.





HBA housing without handwheel

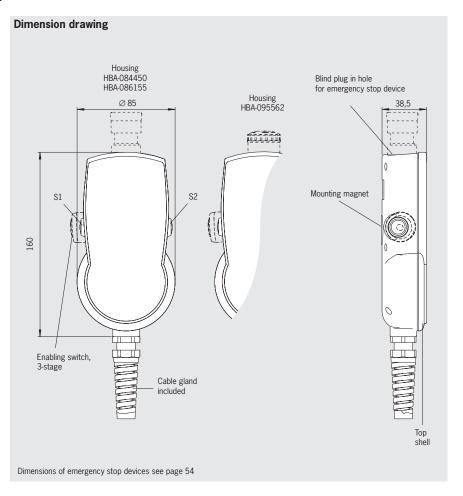
- Cable gland for cable diameter 5-10 mm
- Rubber-coated mounting magnet on the rear of housing
- 6 fixing domes for printed circuit board installation in top shell

Depending on version:

- Hole for emergency stop device (sealed with blind plug)
- ▶ 2 pushbuttons, 2-stage, 1 NO contact each, e.g. for enabling function
- ▶ 1 enabling switch, 3-stage,2 NO contacts

Notes

- ▶ Suitable front panels see page 36
- ➤ Suitable emergency stop device (turn or pull to reset) see page 54
- ▶ **Attention:** Housing HBA-095562 is suitable only for emergency stop device 106435 with short design.
- ▶ Depending on version with 2 2-stage pushbuttons or 1 3-stage enabling switch.



| Parameter | Value | Unit |
|---|--|------|
| HBA housing | | |
| 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, one NO contact each | |
| Connection ratings | DC 30 V / 100 mA | |
| Enabling switch ZXE, 3-stage | | |
| Switching elements | 2 NO contacts | |
| Utilization category according to IEC 60947-5-1 | DC-13, U _e 24 V, I _e 0.1 A | |



| | | Features | | | | | |
|---|--|--|--|-----------|--|--|--|
| Version/item | Hole for emergency stop device | 2 pushbuttons * 2-stage, pre-assembled with 1 NO contact each, e.g. for enabling function \$1, \$2 | 1 enabling switch ZXE ** 3-stage, 2 NO contacts pre-assembled S1 | Order no. | | | |
| Housing HBA-084445 (without hole, without enabling switch) | | | | 084445 | | | |
| Housing HBA-084450 | for emergency stop short and long designs | | | 084450 | | | |
| Housing HBA-086155 | for emergency stop short and long designs | • | | 086155 | | | |
| Housing HBA-095562 | for emergency stop short design | | • | 095562 | | | |
| | | 2 02 | 3 01 02 03 | | | | |

^{*} Travel diagram see page 6

^{**} Travel diagram see page 55



HBA housing with handwheel

- ► Handwheel 100 or 25 pulses, wear-free magnetic detent mechanism
- ► Hole for emergency stop device (sealed with blind plug)
- Cable gland for cable diameter 5-10 mm
- Rubber-coated mounting magnet on the rear of housing
- ► 6 fixing domes for printed circuit board installation in top shell

Depending on version:

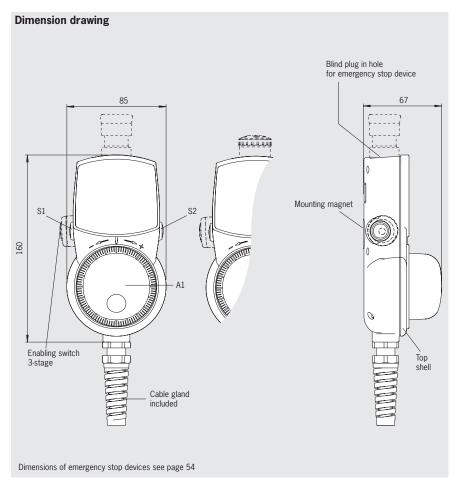
- ▶ 2 pushbuttons, 2-stage, 1 NO contact each, e.g. for enabling function
- ► 1 enabling switch, 3-stage, 2 NO contacts
- ► Various handwheel output stages

Notes

- ▶ Suitable front panels see page 36
- ➤ Suitable emergency stop device (turn or pull to reset) see page 54

► Attention:

- ▶ Housings HBA-095561, HBA-095573, HBA-095572 and HBA-095574 suitable only for emergency stop device 106435 short design.
- ▶ Depending on version with 2 two-stage pushbuttons or 1 three-stage enabling switch.



| Parameter | | Value | Unit |
|---|---------------|--|------|
| HBA housing | | | |
| 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 enal | ling function | | |
| Switching elements | | 2, one NO contact each | |
| Connection ratings | | 30 V DC / 100 mA | |
| Enabling switch ZXE, 3-stage | | | |
| Switching elements | | 1, 2 NO contacts | |
| Utilization category according to IEC | 50947-5-1 | DC-13, U _e 24 V, I _e 0.1 A | |
| Handwheel RS422A (U _B = 5 V DC) | | | |
| Pulses/revolution | | 100 | |
| Power supply | | 5 ± 5% | V DC |
| Output specifications | | RS422A | |
| Handwheel push-pull 5 V (U _B = 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 = 10. | 30 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 = 1 | 030 V DC) | | |
| Pulses/revolution | | 100 | |
| Power supply | | 10 30 | V DC |
| Output circuit | | 24 V push-pull | |
| Output voltage / output current | HIGH, min. | U _B - 3 V at 20 mA | |
| | LOW, max. | 3 V at 20 mA | |



| Ordering tabl | | | | Features | | | | |
|-----------------------|---|--|----------------|-----------------------|--|---|---|-----------|
| | Handwhee | | el | I | | 2 pushbuttons * | 1 enabling | |
| Version/item | RS422 | t stage Push-pull | Power supply | Pulses per revolution | Hole for emergency stop | 2-stage, 1 NO contact each pre-assembled | switch ** ZXE, 3-stage, 2 NO contacts pre-assembled | Order no. |
| | | U _A | U _B | | | S1, S2 | S1 | |
| Housing HBA-083449 | A05 | | 5 V DC | 100 | for emergency stop short and long designs | • | | 083449 |
| Housing HBA-095561 | A05 | | 5 V DC | 100 | for emergency stop short design | | • | 095561 |
| Housing HBA-083499 | | 5 V G12 | 10 30 V DC | 25 | for emergency stop short and long designs | • | | 083499 |
| Housing HBA-095573 | | 5 V G12 | 10 30 V DC | 25 | for emergency stop short design | | • | 095573 |
| Housing HBA-083495 | | U _B - 3 V G24 | 10 30 V DC | 100 | for emergency stop short and long designs | • | | 083495 |
| Housing HBA-095572 | | U _B - 3 V G24 | 10 30 V DC | 100 | for emergency stop short design | | • | 095572 |
| Housing HBA-086762 | | 5 V G05 | 5 V DC | 100 | for emergency stop short and long designs | • | | 086762 |
| Housing HBA-095574 | | 5 V G05 | 5 V DC | 100 | for emergency stop short design | | • | 095574 |
| | A1 Handwheel RS422A Shield O OV O UB O A A A A A A A A A A A A A A A A A A | A1 Handwheel push pull Shield O OVO UBO B 1 1 1 8 8 0 B 1 1 1 8 8 0 D 1 1 8 8 0 D 1 1 8 8 0 D 1 1 8 8 0 D 1 1 8 8 0 D 1 1 8 8 0 D 1 1 8 8 0 D 1 1 8 8 0 D 1 1 8 8 0 D 1 1 8 8 0 D 1 8 0 D 1 8 8 0 D 1 8 8 0 D 1 8 8 0 D 1 8 8 0 D 1 8 8 0 D 1 8 8 0 D 1 8 8 0 D 1 8 8 0 D 1 8 8 0 D 1 8 8 0 D 1 8 8 0 D 1 8 8 0 D 1 8 0 D 1 8 8 0 D 1 8 8 0 D 1 8 8 0 D 1 8 8 0 D 1 8 8 0 D 1 8 8 0 D 1 8 8 0 D 1 8 8 0 D 1 8 8 0 D 1 8 8 0 D 1 8 8 0 D 1 8 8 0 D 1 8 0 D 1 8 8 0 D 1 8 | | | | 2 % | 3 ·3 | |

^{*} Travel diagram see page 6

^{**} Travel diagram see page 55



Top shell HBA

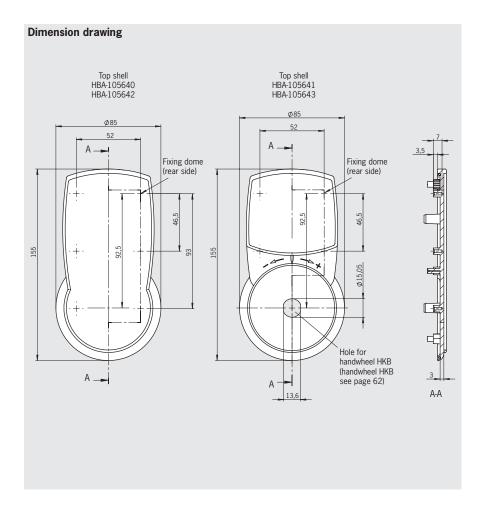
- ► Material plastic
- Color gray or black

Depending on version:

► Hole for handwheel HKB

Notes

▶ Suitable front panels see page 36



| Item | Order no. |
|---|-----------|
| Top shell HBA-105640, gray, without hole for handwheel HKB | 105640 |
| Top shell HBA-105641, gray, with hole for handwheel HKB | 105641 |
| Top shell HBA-105642, black, without hole for handwheel HKB | 105642 |
| Top shell HBA-105643, black, with hole for handwheel HKB | 105643 |



Bottom shell HBA

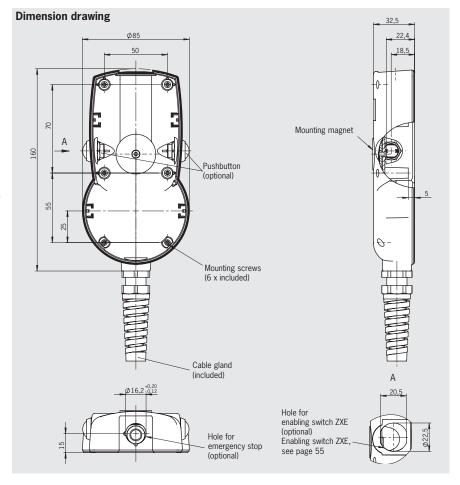
- ► Material plastic
- ► Color gray or black

Depending on version:

- ► Hole for emergency stop device
- ► Hole for enabling switch ZXE (3-stage, 2 NO contacts)
- 2 pushbuttons, 2-stage, 1 NO contact each, e.g. for enabling function

Notes

- ➤ Suitable emergency stop device (turn or pull to reset) see page 54
- ➤ Suitable enabling switch ZXE (3-stage, 2 NO contacts) see page 55
- ▶ Technical data of pushbutton see page 48



| | Features | | | | | | |
|--|--|--|---|-----------|--|--|--|
| Version/item | Hole for emergency stop device | 2 pushbuttons, * 2-stage, 1 NO contact each pre-assembled, e.g. for enabling function \$1, \$2 | Hole for enabling switch ZXE ** 3-stage, 2 NO contacts S1 | Order no. | | | |
| Bottom shell HBA-105503, color gray (without holes, without pushbutton) | | 61, 62 | <u> </u> | 105503 | | | |
| Bottom shell HBA-105504, color gray | for emergency stop short and long designs | | | 105504 | | | |
| Bottom shell HBA-114213, color gray | for emergency stop short and long designs | • | | 114213 | | | |
| Bottom shell HBA-105506, color gray | for emergency stop short design | | • | 105506 | | | |
| Bottom shell HBA-105507, color black (without holes, without pushbutton) | | | | 105507 | | | |
| Bottom shell HBA-105508, color black | for emergency stop short and long designs | | | 105508 | | | |
| Bottom shell HBA-114215, color black | for emergency stop short and long designs | • | | 114215 | | | |
| Bottom shell HBA-105510, color black | for emergency stop short design | | • | 105510 | | | |
| | | 7 o1 2 o2 | 3 °2 °3 | | | | |

^{*} Travel diagram see page 6

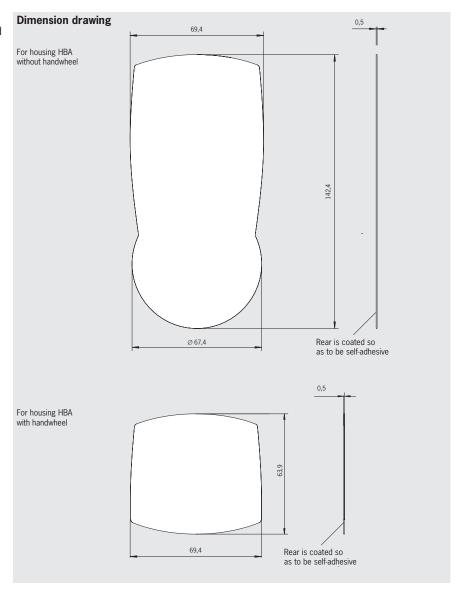
^{**} Travel diagram see page 55



Front panels for housing and top shell HBA with and without handwheel

Notes

➤ Suitable for housing HBA (see page 30 and page 32) and top shell HBA (see page 34)



Technical data

| Parameter | Value | Unit |
|----------------------|---|------|
| Front-panel material | Electrically anodized aluminum, black or silver, rear side with self-adhesive coating | |

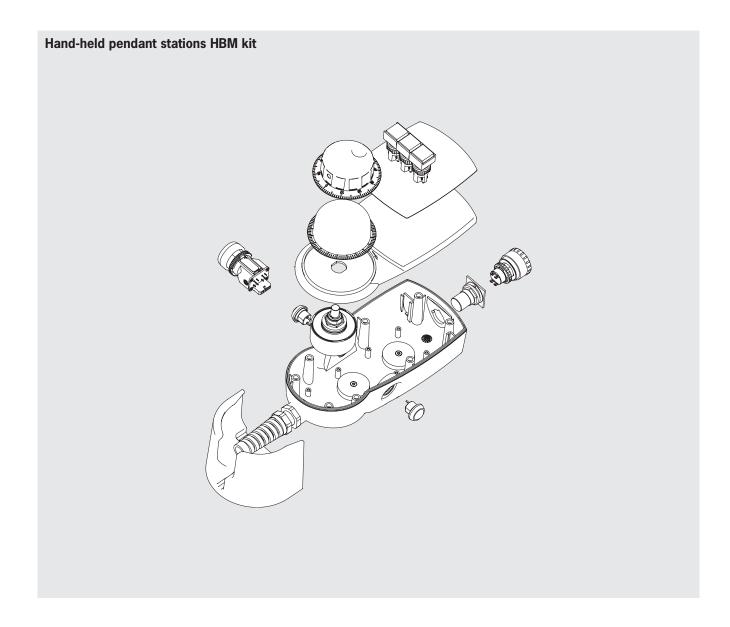
| Item | Order no. |
|--|-----------|
| Front panel for housing HBA without handwheel, silver anodized | 084395 |
| Front panel for housing HBA without handwheel, black anodized | 084396 |
| Front panel for housing HBA with handwheel, silver anodized | 083635 |
| Front panel for housing HBA with handwheel, black anodized | 083636 |



Hand-held pendant stations HBM kit

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. To match the housings, aluminum front panels are available in silver or black anodized.

Customer-specific functionality can be achieved by using the components supplied in the kit (pushbutton, selector switch, key-operated switch, handwheel, enabling switch, KE joystick, etc). For connection to the control system, cables with different numbers of wires, plug connectors and the relevant flange sockets are available. The type of protection IP 65 can be achieved using one of the seals included.





Top shell HBM

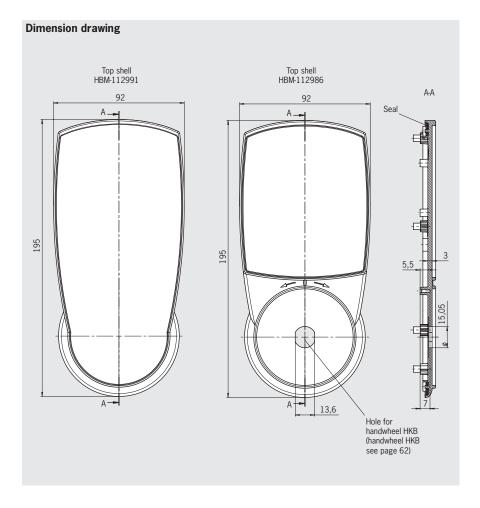
- ► Material plastic
- ► Color anthracite

Depending on version:

► Hole for handwheel HKB

Notes

▶ Suitable front panels see page 40



| Item | Order no. |
|---|-----------|
| Top shell HBM-112991 without hole for handwheel HKB | 112991 |
| Top shell HBM-112986 with hole for handwheel HKB | 112986 |



Bottom shell HBM

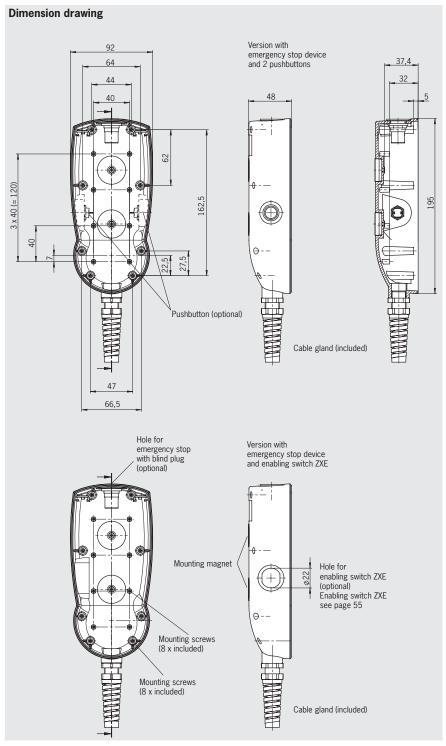
- ► Material plastic
- ▶ Color anthracite

Depending on version:

- ► Hole for emergency stop device (sealed with blind plug)
- ► Hole for enabling switch ZXE (3-stage, 2 NO contacts)
- ▶ 2 pushbuttons, 2-stage, 1 NO contact each, e.g. for enabling function

Notes

- ► Suitable emergency stop device (turn or pull to reset) see page 54
- ► Suitable enabling switch ZXE (3-stage, 2 NO contacts) see page 55
- ▶ Technical data of pushbutton see page 48



| | | Features | | | |
|--|--------------------------------|---|---------------------------------|-----------|--|
| Version/item | Hole for emergency stop device | 2 pushbuttons, * 2-stage, 1 NO contact each pre-assembled, e.g. for enabling function | Hole for enabling switch ZXE ** | Order no. | |
| | | \$1, \$2 | S1 | | |
| Bottom shell HBM-112949 (without holes, without pushbutton) | | | | 112949 | |
| Bottom shell HBM-112954 | • | | | 112954 | |
| Bottom shell HBM-112958 | • | • | | 112958 | |
| Bottom shell HBM-112955 | • | | • | 112955 | |
| | | 7 ol 2 o2 | 7 ol 3 o2 3 o2 | | |

^{*} Travel diagram see page 6

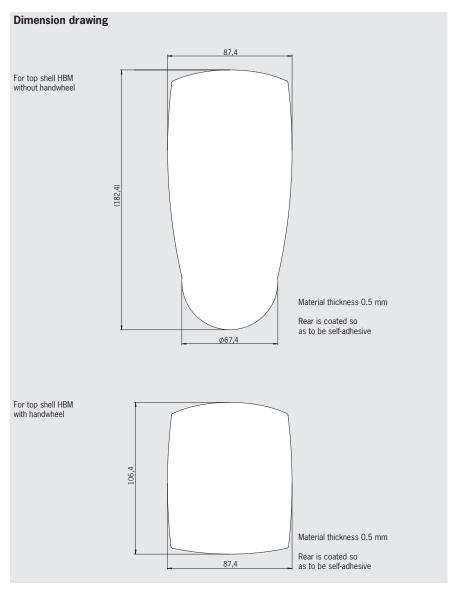
^{**} Travel diagram see page 55



Front panels for top shell HBM with and without handwheel

Notes

▶ Suitable for top shell HBM (see page 38)



Technical data

| Parameter | Value | Unit |
|----------------------|---|------|
| Front-panel material | Electrically anodized aluminum, black or silver, rear side with self-adhesive coating | |

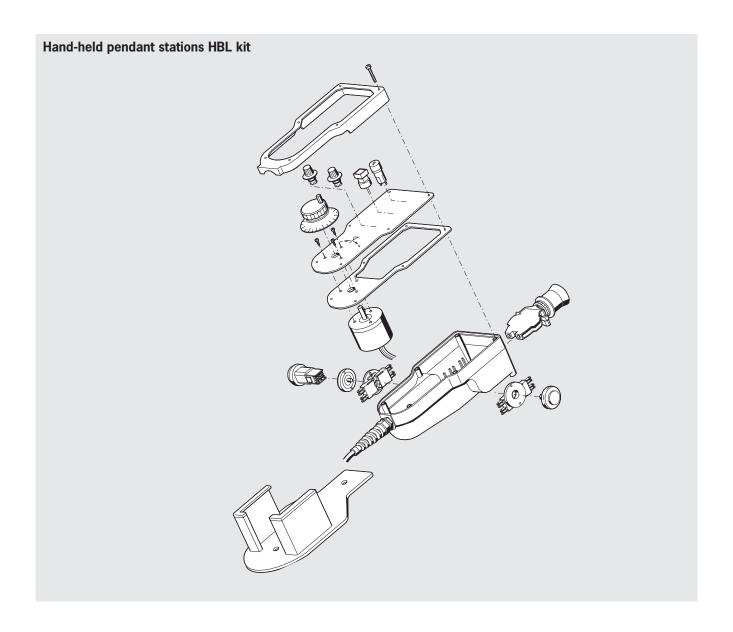
| Item | Order no. |
|--|-----------|
| Front panel for top shell HBM without handwheel, silver anodized | 113060 |
| Front panel for top shell HBM without handwheel, black anodized | 113438 |
| Front panel for top shell HBM with handwheel, silver anodized | 113061 |
| Front panel for top shell HBM with handwheel, black anodized | 113440 |



Hand-held pendant stations HBL kit

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. The HBL housings are shaped differently, depending on the safety components to be integrated. Depending on the version, front panels are available for use with or without handwheel.

Customer-specific functionality can be achieved by using the components supplied in the kit (pushbutton, selector switch, enabling switch, handwheel, key-operated rotary switch, KE joystick, etc). The type of protection IP 65 can be achieved using an included seal. For connection to the control system, cables with different numbers of wires, plug connectors and the relevant flange sockets are available.





Housing HBL

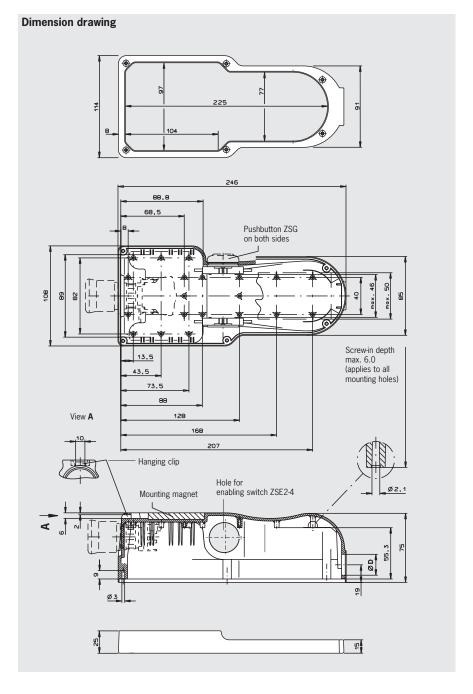
- Rubber-coated mounting magnet on the rear of housing
- ► Hanging clip
- ▶ 6 screws for front panel fastening
- ► Cover frame for front panel
- Fixing domes for printed circuit board installation

Depending on version:

- ► Fastening nut for cable gland Pg 11 or Pg 13.5
- ► Hole for emergency stop device
- 2 pushbuttons ZSG, 2-stage,
 2 NO contacts each, e.g. for enabling function
- ► Hole on left for enabling switch ZSE

Notes

- ► Emergency stop devices see page 56
- ► Enabling switch ZSE see page 57
- ► Cable glands see page 53
- ► Assembly drawings see page 75
- ▶ Pg 11 for cable diameter 5 ... 10 mm
- ▶ Pg 13.5 for cable diameter 6 ... 12 mm



| 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 according 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 | |

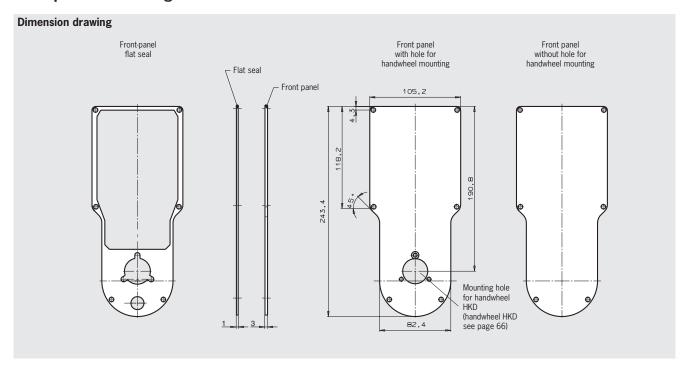


| | Features | | | | | | |
|-----------------------|---------------|---------------------------------------|---|---|---|--|-----------|
| Version/item | for cab | g nut le gland gland age 53) | Hole for emergency stop * (emergency stop | Hole for enabling switch ZSE2-2 C1692, 3-stage | Hole for enabling switch ZSE2-4 C1943, 3-stage | 2 pushbuttons ZSG, 2-stage, 2 NO contacts each pre-assembled, | Order no. |
| | Pg 11 Pg 13.5 | | see page 56) | 2 NO + 1 NC → (enabling switch page 57) | 2 NO + 2 NC → (enabling switch page 57) | e.g. for enabling function | |
| Housing HBL-073098 | • | | | | | | 073098 |
| Housing HBL-072630 | | • | | | | | 072630 |
| Housing HBL-073113 | • | | • | | | • | 073113 |
| Housing HBL-072631 | | • | • | | | • | 072631 |
| Housing HBL-073109 | • | | | • | | | 073109 |
| Housing HBL-072632 | | • | | • | | | 072632 |
| Housing HBL-072983 | • | | • | | • | | 072983 |
| Housing HBL-083484 | | • | • | | • | | 083484 |

 $^{^{\}star}$ Blind plug \varnothing 22 for emergency stop device hole included



Front panel for housing HBL



Technical data

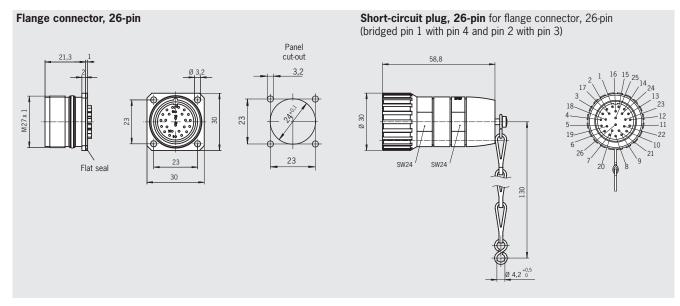
| Parameter | Value | Unit |
|----------------------|---|------|
| Front-panel material | Electrically anodized aluminum, black, NBR, self-adhesive on one side | |

| Item | Order no. |
|---|-----------|
| HBL front panel, with seal | 073138 |
| HBL front panel, with hole for handwheel HKD and seal | 073139 |
| Front seal for HBL front panel | 072641 |



Connection kit

for designs HBA-102434 and HBA-103037, consisting of 26-pin flange connector and short-circuit plug



Technical data

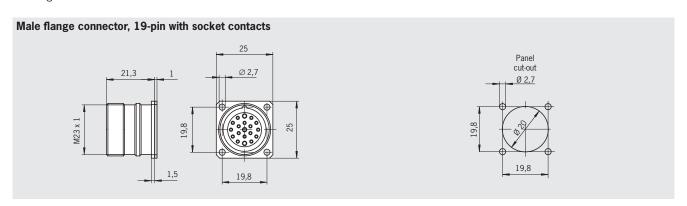
| iconnical data | | |
|---|---------------------|--|
| Parameter | Value | |
| Flange connector | | |
| Housing material | Metal | |
| Degree of protection according to EN 60529 (inserted) | IP 67 | |
| Contact material | Copper alloy | |
| Connection | Soldered connection | |
| Short-circuit plug | | |
| Housing material | Metal | |
| Number of pins | 26 | |
| Degree of protection according to EN 60529 (inserted) | IP 67 | |
| Contact material | Copper alloy | |
| Connection | Crimp connection | |

Ordering table

| Item | Order no. |
|---|-----------|
| Flange connector and short-circuit plug | 103042 |

Male flange connector

for designs HBAS-072949 and HBAS-094594



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 | Soldered connection | |

| Item | Order no. |
|--|-----------|
| Male flange connector, 19-pin with socket contacts | 092374 |



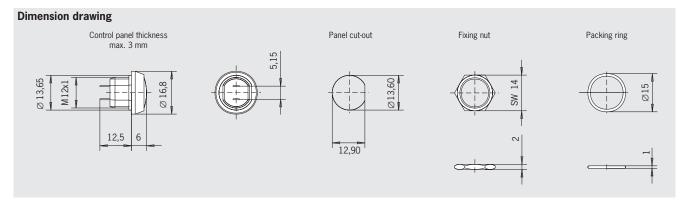


Overview of accessories for hand-held pendant station kits

| | Accessories | | | | | | | |
|--------------------------------|------------------------------|------------|-----------------|----------------------------|--------------------------------|----------------|-------------------|-------|
| Accessories for kit | EMERGENCY- STOP device | Pushbutton | Selector switch | Key-operated rotary switch | Enabling switch, 3-stage | Plug connector | Connection cables | Page |
| | | • | | | | | | 48 |
| Suitable | | | • | | | | | 49/50 |
| for | | | | • | | | | 50 |
| all designs | | | | | | • | | 51 |
| | | | | | | | • | 52/53 |
| Hand-held | • | | | | | | | 54 |
| pendant stations HBA/HBM | | | | | • | | | 55 |
| Hand-held pendant stations HBL | • | | | | | | | 56 |
| | | | | | • | | | 57 |



Pushbutton



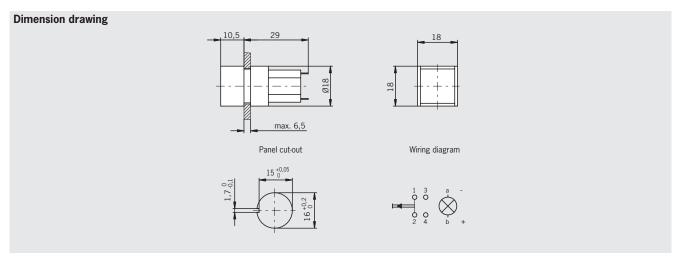
Technical data

| Parameter | Value | Unit |
|--|---------------------------------------|---------------------------------------|
| Ambient temperature | -25 +70 | °C |
| Front degree of protection (integrated in front panel) | IP 67 | |
| Switching principle | Button, snap-action switching element | · · · · · · · · · · · · · · · · · · · |
| Switching elements | 1 NO contact | · · · · · · · · · · · · · · · · · · · |
| Switching voltage | 30 | V DC |
| Switching current max. | 100 | mA |
| Connection | Soldered connection | |

Ordering table

| Item | Order no. |
|---------------------------|-----------|
| Pushbutton, black button | 083640 |
| Pushbutton, red button | 086753 |
| Pushbutton, green button | 086754 |
| Pushbutton, blue button | 086757 |
| Pushbutton, white button | 086755 |
| Pushbutton, yellow button | 086756 |

Illuminated pushbutton (can be individually labeled)



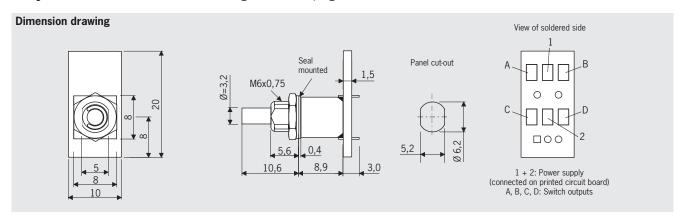
Technical data

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

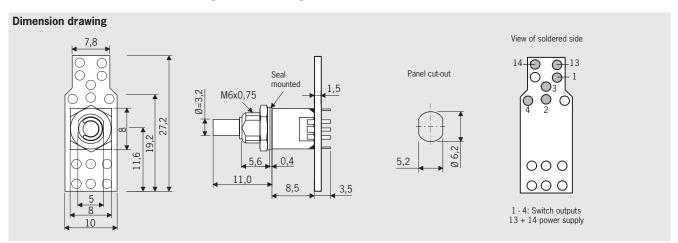
| Item | Order no. |
|---|-----------|
| Pushbutton, illuminated, can be individually labeled (yellow LED) | 074991 |
| Pushbutton, illuminated, can be individually labeled (white LED) | 098045 |



Gray code selector switch (ordering table see page 50)



Selector switch 1 of X (ordering table see page 50)

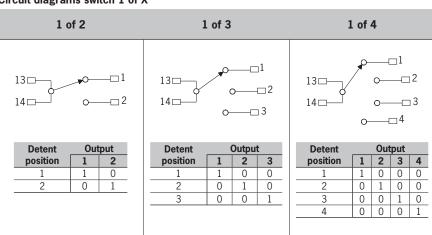


Code table switch with Gray code

| 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 Connections 1 - 3: Power supply

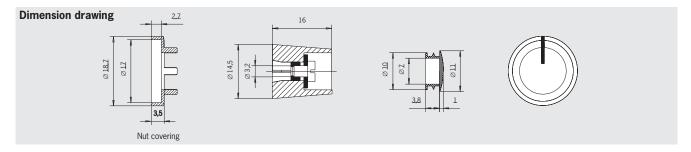
Circuit diagrams switch 1 of X



| recinical data | | |
|--|---|---------|
| Parameter | Value | Unit |
| Front degree of protection (integrated in front panel) | IP 67 | |
| Center point fixing | 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 | Soldered connection on printed circuit board | |
| Max. soldering time | ≤ 5 (at t ≤ 260 °C) | S |



Rotary knob

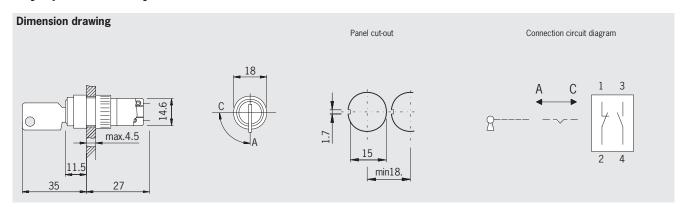


Ordering table

| Item | Detent angle | Order no. |
|--|--------------|-----------|
| Selector switch, 2 detent positions, 1 of 2, break-before-make 1) | 30° | 097026 |
| Selector switch, 3 detent positions, 1 of 3, break-before-make ¹⁾ | 30° | 097027 |
| Selector switch, 4 detent positions, 1 of 4, break-before-make ¹⁾ | 30° | 097028 |
| Selector switch, 5 detent positions, Gray code, short circuited ²⁾ | 22.5° | 097029 |
| Selector switch, 6 detent positions, Gray code, short circuited ²⁾ | 22.5° | 097030 |
| Selector switch, 7 detent positions, Gray code, short circuited ²⁾ | 22.5° | 097031 |
| Selector switch, 8 detent positions, Gray code, short circuited ²⁾ | 22.5° | 097032 |
| Selector switch, 12 detent positions, Gray code, short circuited ²⁾ | 22.5° | 097033 |
| Selector switch, 16 detent positions, Gray code, short circuited ²⁾ | 22.5° | 097034 |
| Rotary knob, matt black with a marking, collet mounting for axis 3.2 mm | | 097141 |

- 1) break-before-make: all outputs are open between the switch positions.
- 2) short circuited: the related outputs are connected between the switch positions.

Key-operated rotary switch



Technical data

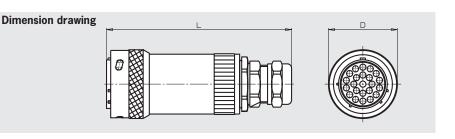
| Parameter | Value | Unit | |
|---|-------------------------------|---------|--|
| Ambient temperature | -25 + 55 | °C | |
| Front degree of protection (integrated in front panel) / NEMA | IP 65 / 250-12 | | |
| Switching principle | Snap-action switching element | | |
| Switching element | 1 NO contact,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

| Item | | Order no. |
|----------------------------|---------------------------------|-----------|
| Key-operated rotary switch | Key removable in both positions | 083639 |
| Replacement key | | 092386 |

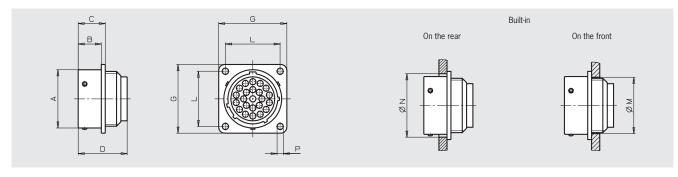


Plug connector

| 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 |
| | | | |



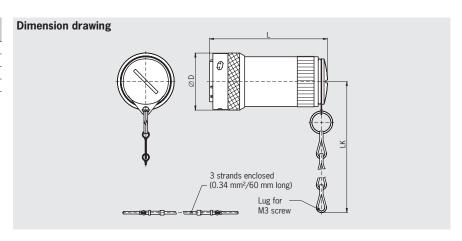
Flange connectors



| Number of pins | Α | \mathbf{B}_{max} | C _{max} | D _{max} | \mathbf{G}_{\max} | L | M | N | 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 plug

| 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

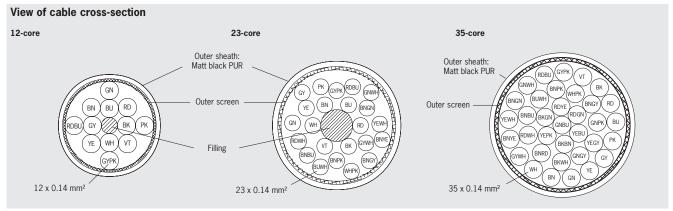
| Parameter | Value | Unit |
|--|-------------------|------|
| Connecting plug/flange socket | | |
| Housing material | Metal | |
| Number of pins | 12 / 23 / 28 / 35 | |
| Degree of protection according to EN 60529 (inserted) / NEMA | IP 65 / 250-12 | |

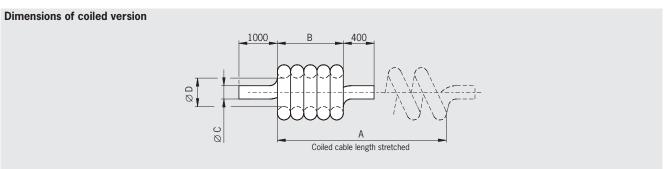
| 5 | | |
|--|-----------------------------|-----------|
| Item | Connection | Order no. |
| Plug connector, 35-pin with pin contacts | Crimp contacts (included) * | 074395 |
| Plug connector, 28-pin with pin contacts | Crimp contacts (included) * | 074394 |
| Plug connector, 23-pin with pin contacts | Crimp contacts (included) * | 074393 |
| Plug connector, 12-pin with pin contacts | Crimp contacts (included) * | 086748 |
| Flange socket, 35-pin with socket contacts | Crimp contacts (included) * | 074386 |
| Flange socket, 28-pin with socket contacts | Crimp contacts (included) * | 074385 |
| Flange socket, 23-pin with socket contacts | Crimp contacts (included) * | 074384 |
| Flange socket, 12-pin with socket contacts | Crimp contacts (included) * | 086749 |
| Short-circuit plug with chain, 35-pin | Crimp contacts (included) * | 083459 |
| Short-circuit plug with chain, 28-pin | Crimp contacts (included) * | 083458 |
| Short-circuit plug with chain, 23-pin | Crimp contacts (included) * | 083457 |
| Short-circuit plug with chain, 12-pin | Crimp contacts (included) * | 087802 |

Suitable crimping tool Souriau S16RCM20 Crimping tool for machined contacts Suitable extraction tool Souriau RX2025GE1 Extraction tool



Cable coiled and straight





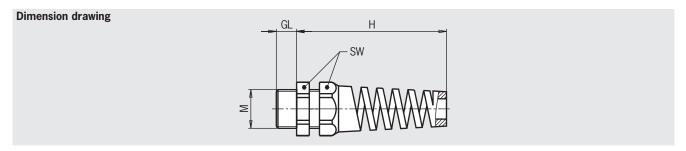
Technical data

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

| Item | Cable length | Α | В | Ø C | Ø D | Order no. |
|-------------------------|--------------|---------------|--------------|-------------|-----------|-----------|
| 100111 | [mm] | [mm] | [mm] | [mm] | [mm] | Ordor no. |
| 12-core, coiled cable | 3,900 | Approx. 2,500 | 550 ± 20 | 6 ± 0.3 | 8 ± 2 | 086721 |
| 12-core, coiled cable | 5,400 | Approx. 4,000 | 880 ± 20 | 6 ± 0.3 | 8 ± 2 | 086722 |
| 12-core, straight cable | 3,500 | _ | _ | _ | _ | 087379 |
| 12-core, straight cable | 5,000 | _ | _ | _ | - | 087380 |
| 12-core, straight cable | 10,000 | _ | - | _ | - | 087381 |
| 23-core, coiled cable | 3,900 | Approx. 2,500 | 550 ± 20 | 7.5 ± 0.3 | 10 ± 2 | 087408 |
| 23-core, coiled cable | 5,400 | Approx. 4,000 | 880 ± 20 | 7.5 ± 0.3 | 10 ± 2 | 087409 |
| 23-core, straight cable | 3,500 | _ | - | _ | - | 087382 |
| 23-core, straight cable | 5,000 | _ | - | _ | - | 087383 |
| 23-core, straight cable | 10,000 | _ | - | _ | - | 087384 |
| 35-core, coiled cable | 3,900 | Approx. 2,500 | 550 ± 20 | 8 ± 0.5 | 10 ± 2 | 097190 |
| 35-core, coiled cable | 5,400 | Approx. 4,000 | 880 ± 20 | 8 ± 0.5 | 10 ± 2 | 097191 |
| 35-core, straight cable | 3,500 | _ | _ | _ | _ | 097189 |
| 35-core, straight cable | 5,000 | _ | _ | _ | - | 097188 |
| 35-core, straight cable | 10,000 | _ | _ | _ | _ | 097187 |



Cable gland with anti-kink spiral



Ordering table

| Thread M | Use | Cable diameter | SW | GL | Н |
|----------|-------------|----------------|----|------|----|
| M16x1.5 | Kit HBA/HBM | 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 |

| Item | Order no. |
|---|-----------|
| Cable gland M16x1.5 with anti-kink spiral, color black | 083641 |
| Cable gland Pg 11 with anti-kink spiral and fixing nut, color black | 073982 |
| Cable gland Pg 13.5 with anti-kink spiral and fixing nut, color black | 073983 |

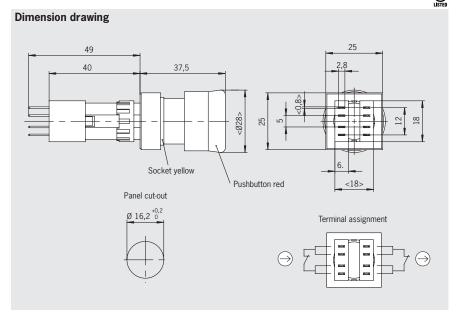


EMERGENCY STOP devices according to EN ISO 13850

- ► With pull-to-reset button
- ► EMERGENCY STOP device for housing HBA/HBM 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 with housing HBA/HBM with 3-stage enabling switch ZXE



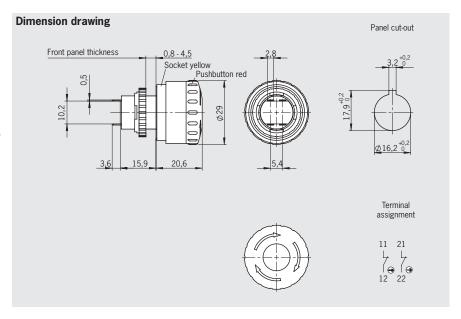
Technical data

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

- ► With turn-to-reset button
- EMERGENCY STOP device for housing HBA/HBM
- ▶ Bottom of housing yellow

Notes

➤ The EMERGENCY STOP device engages when actuated by pressing, unlocks when turned or pulled, and is tamper proof



Technical data

| Parameter | Value | Unit |
|---------------------------|------------------------------|------|
| Actuating element | | |
| Color of actuating button | Red | |
| Color of bottom part | Yellow | |
| Switching elements | 2 positively driven contacts | |
| Degree of protection | IP 65 | |
| Connection ratings | 24 V DC / 3 A | |

| Item | Order no. |
|---|-----------|
| EMERGENCY STOP device (pull-to-reset button) with 2 switching elements, 1 positively driven contact each, long design | 096298 |
| EMERGENCY STOP device (pull-to-reset button and turn-to-reset button), 2 positively driven contacts, short design | 106435 |
| Blind plug for EMERGENCY STOP device mounting hole | 083653 |

Accessory Kit for Hand-held Pendant Stations HBA/HBM



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

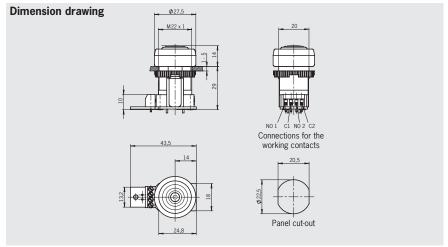


Notes

► Enabling switch ZXE-091336 for use in housing HBA/HBM (see page 31/33/35/39)

Switching elements

2202 2 NO



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

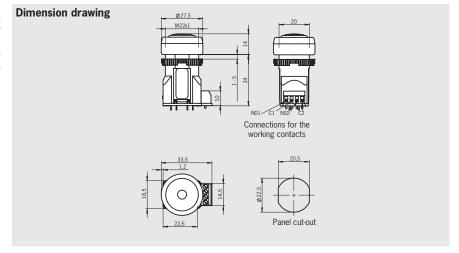


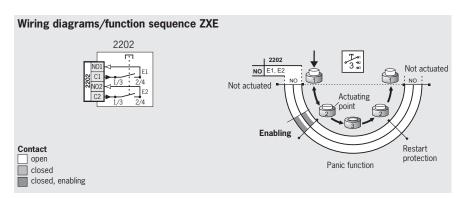
Notes

- ► Enabling switch ZXE-104833 for use in housing HBA/HBM (see page 31/33/35/39)
- A click sounds during the change from stage 1 to stage 2 and during the return from stage 2 to stage 1.

Switching elements

2202 2 NO





Technical data

| Parameter | Value | Unit |
|---|--|------|
| Housing material | Polyamide, black | |
| Protective cap material | CR (neoprene), black | |
| Degree of protection according to IEC 529 | IP65 on front | |
| Ambient temperature | - 5 + 60 | °C |
| Switching principle | Slow-action contact element | |
| Utilization category according to IEC 947-5-1 | DC-13 U _e 24 V I _e 0.1 A | |
| Weight | Approx. 0.03 | kg |

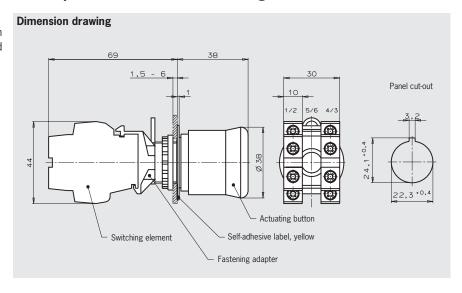
| Item | Particularity | Switching contacts | Switch type | Order no. |
|------------|--------------------------|--------------------|--------------|-----------|
| ZXE-091336 | - | 2 NO contacts | Dual-channel | 091336 |
| ZXE-104833 | Click noise on operation | 2 NO contacts | Dual-channel | 104833 |



EMERGENCY STOP device, 22 mm with pull-to-reset button according to EN ISO 13850

Notes

- ► The EMERGENCY STOP device engages when actuated by pressing, unlocks when pulled, and is overload-proof
- ▶ Usage only for the following housings:
- ► HBL-072631
- ► HBL-072983
- ► HBL-073113
- ► HBL-083484



Technical data

| Parameter | Value | Unit |
|---|---|------|
| Color of actuating button | Red | · |
| Color self-adhesive label | Yellow | , |
| Switching element | 2 NC contacts | |
| Utilization category according to IEC 947-5-1 | DC-13 U _e 24 V I _e 2.75 A | |

| Item | Order no. |
|---|-----------|
| EMERGENCY STOP device, complete with switching elements (2 x NC contacts), pull-to-reset button | 073985 |
| Blind plug for EMERGENCY STOP device mounting hole | 059622 |

Accessory Kit for Hand-held Pendant Stations HBL



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

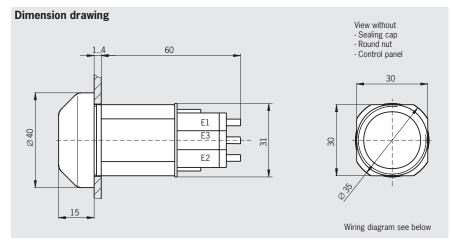


Notes

► Enabling switch ZSE2-2 C1692 for use in housings HBL-073109 and HBL-072632 (see page 42)

Switching elements

210 2 NO + 1 NC ⊖



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

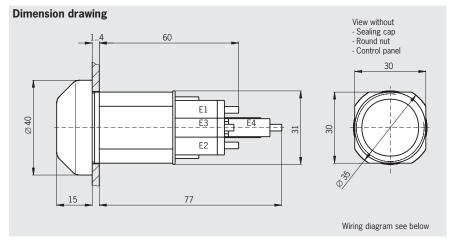


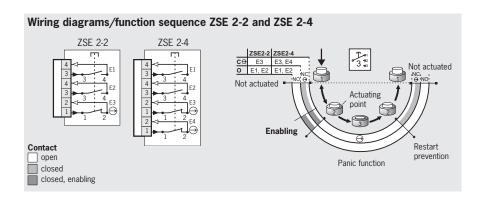
Notes

► Enabling switch ZSE2-4 C1943 for use in housings HBL-072983 and HBL-083484 (see page 42)

Switching elements

▶ **220** 2 NO + 2 NC ⊖





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 according 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 | |
| Weight | Approx. 0.1 | kg |

| Item | Switching contacts | Switch type | Order no. |
|---------------|---------------------------------------|---------------------------|-----------|
| ZSE2-2 C 1692 | 2 NO contacts + 1 pos. driven contact | Single-channel | 070752 |
| ZSE2-4 C 1943 | 2 NO contacts + 2 pos. driven contact | Dual-channel Dual-channel | 083477 |



Holder HBA

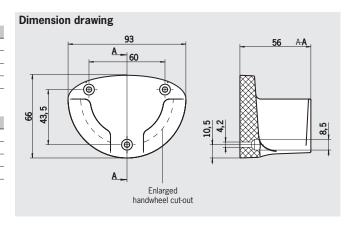
Technical data

| 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 gray | 072828 |
| Holder HBA black | 100221 |
| Holder HBA gray, enlarged handwheel cut-out * | 072935 |
| Holder HBA black, enlarged handwheel cut-out * | 109979 |

^{*} Operation of the handwheel in the holder possible



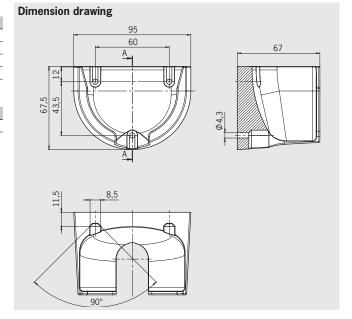
Holder HBM

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 HBM | 112335 |

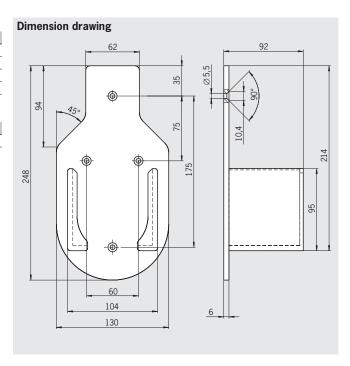


Holder HBL

Technical data

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

| Item | Order no. |
|------------|-----------|
| Holder HBL | 084397 |







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. The rotation of the handwheel generates square-wave outputs. The CNC axis controller evaluates the pulses and so signals the axis to move. With over 20 years of handwheel experience, EUCHNER provides a wide selection of handwheels built with the finest quality and highest possible reliability.

Daily use of handwheels places high demands on the mechanical functioning. With twin bearings and a wear-free detent mechanism, the EUCHNER handwheels are the optimum choice for trouble-free operation. The detent moment maintains position even in the event of machine vibration. The detent moment and 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 with CNC-controlled machines, EUCHNER also offers handwheels used for medical and telecommunication applications. EUCHNER also offers handwheels for these applications.





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 mechanism is generated by a magnetic field. A combination of 100 magnetic north/south positions is generated by the opposing magnetic fields with one 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 bearing assembly of the handwheel can withstand high axial and radial forces. Different circuit outputs are available for all current control systems.

There are three different designs available:

- Design HKB
 - Ideal for flat machine panels and small, light hand-held pendant stations.



- Design HKC
 - Suitable for installation in operator panels
 - Its design makes it particularly suitable for flat operator panels



- Design HKD
 - Suitable for installation in operator panels and EUCHNER handheld pendant stations from series HBL
 - Suitable for installation in universal turning and milling machines for axis movement, for example



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 detent mechanism. The roller is pushed between the teeth of the rotor by a spring and dial. 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 operator panels.
 - Suitable for installation in EUCHNER hand-held pendant stations
 - With center point fixing



- Design HWB
 - Suitable for installation in operator panels
 - With 3-point fixing





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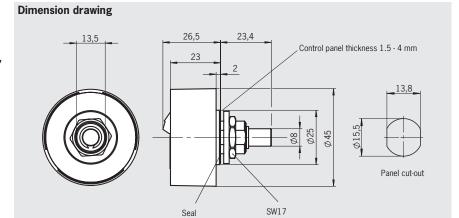
Handwheel HKB

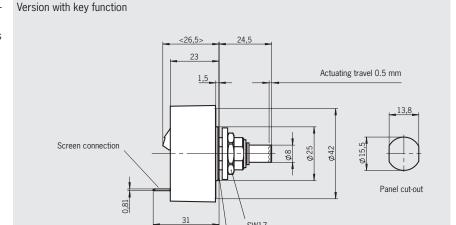
- ▶ 100 detent positions per revolution
- ► Wear-free magnetic detent mechanism
- ▶ 100 or 25 pulses per revolution
- Key function in axial direction optional
- Ideal for flat operator panels and small, light hand-held pendant stations like HBA/HBM



Notes

- ▶ Output A05 suitable for Siemens control systems with RS422 input
- ▶ Output G05 suitable for Fanuc control systems
- ▶ Dial: see accessories page 72
- ▶ Front panel: see accessories page 72





Seal

| Series | Number of pulses per revolution | Connection | Detent positions | Outputs | Order No./item |
|--------------------------|------------------------------------|----------------------------|--|---|-------------------------------|
| | 25 | S Screw terminal | 100 | G12 Push-pull 5 V U _B = 10 30 V DC | 105137 HKB025S7G12 |
| | | | | A05 RS422A U _B = 5 V DC | 105134 HKB100S7A05 |
| НКВ | 100 | s | | A12 RS422A U _B = 10 30 V DC | 105135 HKB100S7A12 |
| 100 | Screw terminal | 100 | G05 5 V push-pull U _B = 5 V DC | 105136 HKB100S7G05 | |
| | | | | G24 Push-pull 1030 V U _B = 10 30 V DC | 105138 HKB100S7G24 |
| HKB with key function | 100 | S Screw terminal | 100 | A05 RS422A U _B = 5 V DC | 109429 HKB100S7A05K |



| Parameter | | | Value | | Unit |
|---|------------------------------------|--|--|---|----------|
| Pulses per revolution | | | 2 x 25 or 2 x 100 | | - Oinc |
| Detent positions | | | 100 | | |
| Housing material | | | Aluminum | | |
| Weight | | | 0.095 | | kg |
| Detent mechanism | | | Magnetic | | 1.8 |
| Shaft loading, axial, max. | | | 25 | | N |
| Shaft loading, radial, max. | | | 40 | | N |
| Mechanical life, min. | | | 5 x 10 ⁶ | | Rev. |
| Operating temperature | | | 0 +50 | | °C |
| Storage temperature | | | -20 +50 | | °C |
| Atmospheric humidity, max. | | 80% | (condensation not permissibl | e) | |
| Front degree of protection | acc. to EN 60529/IEC 529 | 50% | IP 65 | C) | |
| Tont degree of protection | acc. to NEMA 250 | | 250-12 | | |
| Resistance to vibration | 400. 10 1121111 200 | | 200 12 | | |
| /ibrations (3 axes) | | | DIN/IEC 68-2-6 | | |
| Shock (3 axes) | | | DIN/IEC 68-2-27 | | |
| MC protection requirement | ts in accordance with CE | E | N 61000-6-2, EN 61000-6-4 | | |
| Key function | | _ | | | |
| Mechanical life, min. | | | 1 x 10 ⁶ actuations | | |
| actuating travel | | | 0.3 0.7 mm | | |
| Specification output OUT | | | Output stage | | |
| pecification output OOT | | A05/G05 | Output Stage | A12/G12/G24 | |
| Inorating valtage !! | | | | | |
| Operating voltage U _B | UICU (1) min | DC 5 V ± 5 % 4.0 V/0 mA | | DC 10 30 V | |
| Output voltage | HIGH (1), min. | | | | _ |
| | | 3.4 V/5 mA | | | \dashv |
| | 1 014 (0) | 3.0 V/20 mA | | U _B - 3 V/20 mA | _ |
| | LOW (0), max. | 1.3 V/15 mA | | 3 V/20 mA | \dashv |
| Output circuit RS422A | | | | | |
| Output stage | | A05 | | A12 | |
| Output signals | | | A, /A, B, /B | | |
| perating voltage U _B | | 5 ± 5 % | | 10 30 | V DC |
| Operating current, no load, i | max. | | 80 | | mA |
| Output circuit | | | 22A, use RS422 differential r | | |
| Output signals cw (clockwise | e rotation) | 25 pulses | | 100 pulses | |
| | | 360° | A = | | |
| | | - 111 | /A | | |
| | | /A | l R | | |
| | | | B == | | |
| | | B /B | B | 200 µs 400 µs | |
| erminal assignment | | B /B Screw terminal, 7-pin, co | /B //B nductor cross-section 0.08 ² . htening torque, max. 0.5 Nm | . 1.5 ² (AWG 22 16) | |
| erminal assignment | | B /B Screw terminal, 7-pin, co Tig without key function | /B Inductor cross-section 0.08 ² . htening torque, max. 0.5 Nm | 1.5 ² (AWG 22 16) with key function | |
| erminal assignment | | B /B Screw terminal, 7-pin, co Tig without key function | /B Inductor cross-section 0.08 ² . htening torque, max. 0.5 Nm | 1.5 ² (AWG 22 16) with key function | |
| Terminal assignment | | B /B Screw terminal, 7-pin, co | /B Inductor cross-section 0.08 ² . Intening torque, max. 0.5 Nm U U U U U S U U S U S U S U S U S U S | 800 μs 1.5² (AWG 22 16) with key function ΘΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟ | |
| Output circuit, push-pull | | Screw terminal, 7-pin, co Tig without key function U O O O O U U O O O U U O O O U U O O O O | nductor cross-section 0.08 ² . htening torque, max. 0.5 Nm | 800 μs 1.5² (AWG 22 16) with key function OV A B Out | |
| Putput circuit, push-pull utput stage | | Screw terminal, 7-pin, co Tig without key function | /B Inductor cross-section 0.08 ² . htening torque, max. 0.5 Nm O | 800 μs 1.5² (AWG 22 16) with key function ΘΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟΟ | |
| utput circuit, push-pull utput stage utput signals | | B Screw terminal, 7-pin, co Tig without key function J J S S S S S S S S S S S S S S S S S | /B Inductor cross-section 0.08 ² . htening torque, max. 0.5 Nm U G12 A, B | 800 μs 1.5² (AWG 22 16) with key function ΘΟΑΒΟυτ | |
| Dutput circuit, push-pull output stage output signals operating voltage U _B | | Screw terminal, 7-pin, co Tig without key function U O O O O U U O O O U U O O O U U O O O O | /B Inductor cross-section 0.08 ² . htening torque, max. 0.5 Nm Output | 800 μs 1.5² (AWG 22 16) with key function OV A B Out | |
| Dutput circuit, push-pull Output stage Output signals Operating voltage U _B Operating current, no load, i | | Screw terminal, 7-pin, co Tig without key function O U U 0, OV A /A B /B U 0, ST A B /B G05 5 ± 5 % | Muctor cross-section 0.08 ² . htening torque, max. 0.5 Nm G12 A, B 10. | 800 μs 1.5² (AWG 22 16) with key function ΘΟΑΒΟυτ | |
| Dutput circuit, push-pull Output stage Output signals Operating voltage U _B Operating current, no load, i | max. HIGH (1), min. | Screw terminal, 7-pin, co Tig without key function UBON A /A B /B G05 5 ± 5 % 4.0 V / 0 mA | Moductor cross-section 0.08². htening torque, max. 0.5 Nm G12 A, B 10. 80 4.9 V / 0 mA | 800 μs 1.5² (AWG 22 16) with key function ΘΟΑΒΟυτ | |
| Dutput circuit, push-pull Output stage Output signals Operating voltage U _B Operating current, no load, i | | B Screw terminal, 7-pin, co Tig without key function Us OV A A B 4.0 V / 0 mA 3.4 V / 5 mA | G12 A, B 10 . 80 4.9 V / 0 mA 3.9 V / 5 mA | 800 μs 1.5² (AWG 22 16) with key function OV A B Out □□□□□□□ G24 30 | |
| Dutput circuit, push-pull output stage output signals operating voltage U _B | HIGH (1), min. | B Screw terminal, 7-pin, co Tig without key function | G12 A, B G12 A, B 10. 80 4.9 V / 0 mA 3.9 V / 5 mA 3.6 V / 20 mA | 800 μs 1.5² (AWG 22 16) with key function OV A B Out □ □ □ □ □ UB - 3 V / 20 mA | |
| Dutput circuit, push-pull output stage output signals operating voltage U _B | | B Screw terminal, 7-pin, co Tig without key function Us OV A A B 4.0 V / 0 mA 3.4 V / 5 mA | G12 A, B 10 . 80 4.9 V / 0 mA 3.9 V / 5 mA | 800 μs 1.5² (AWG 22 16) with key function OV A B Out □□□□□□□ G24 30 | |
| Putput circuit, push-pull utput stage utput signals perating voltage U _B perating current, no load, i utput voltage | HIGH (1), min. LOW (0), max. nax. | Screw terminal, 7-pin, co Tig without key function GO5 5 ± 5 % 4.0 V / 0 mA 3.4 V / 5 mA 3.0 V / 20 mA 1.3 V / 15 mA | G12 A, B G12 A, B 10. 80 4.9 V / 0 mA 3.9 V / 5 mA 3.6 V / 20 mA | 800 μs 1.5² (AWG 22 16) with key function OV A B Out CQ24 30 | |
| Dutput circuit, push-pull Dutput stage Dutput signals Deparating voltage U _B Deparating current, no load, in Dutput voltage | HIGH (1), min. LOW (0), max. nax. | Screw terminal, 7-pin, co Tig without key function | G12 A, B 10 . 80 4.9 V / 0 mA 3.9 V / 5 mA 3.6 V / 20 mA 1.3 V / 15 mA 20 | 800 μs 1.5² (AWG 22 16) with key function OV A B Out □ □ □ □ □ UB - 3 V / 20 mA | mA |
| Dutput circuit, push-pull Dutput stage Dutput signals Deparating voltage U _B Deparating current, no load, in Dutput voltage | HIGH (1), min. LOW (0), max. nax. | Screw terminal, 7-pin, co Tig without key function G05 5 ± 5 % 4.0 V / 0 mA 3.4 V / 5 mA 3.0 V / 20 mA 1.3 V / 15 mA 25 pulses A | G12 A, B 10 . 80 4.9 V / 0 mA 3.9 V / 5 mA 3.6 V / 20 mA 1.3 V / 15 mA 20 A | 800 μs 1.5² (AWG 22 16) with key function OV A B Out CQ24 30 | mA |
| Putput circuit, push-pull utput stage utput signals perating voltage U _B perating current, no load, i utput voltage | HIGH (1), min. LOW (0), max. nax. | Screw terminal, 7-pin, co Tig without key function GO5 5 ± 5 % 4.0 V / 0 mA 3.4 V / 5 mA 3.0 V / 20 mA 1.3 V / 15 mA 25 pulses A B 90° | G12 A, B 10 . 80 4.9 V / 0 mA 3.9 V / 5 mA 3.6 V / 20 mA 1.3 V / 15 mA 20 | 800 μs 1.5² (AWG 22 16) with key function OV A B Out H H H H H H G24 30 U _B - 3 V / 20 mA 3 V / 20 mA 100 pulses | mA |
| Dutput circuit, push-pull Dutput stage Dutput signals Deprating voltage U _B Deprating current, no load, i Dutput voltage Dutput voltage Dutput current per output, in Dutput signals cw (clockwise | HIGH (1), min. LOW (0), max. nax. | Screw terminal, 7-pin, co Tig without key function GOS 5 ± 5 % 4.0 V / 0 mA 3.4 V / 5 mA 3.0 V / 20 mA 1.3 V / 15 mA 25 pulses A B 90° 360° | G12 A, B 10 . 80 4.9 V / 0 mA 3.9 V / 5 mA 3.6 V / 20 mA 1.3 V / 15 mA 20 A B B B | 800 μs 1.5² (AWG 22 16) with key function OV A B Out H H H H H H G24 30 U _B - 3 V / 20 mA 3 V / 20 mA 100 pulses | mA |
| Dutput circuit, push-pull Dutput stage Dutput signals Deprating voltage U _B Deprating current, no load, i Dutput voltage Dutput voltage Dutput current per output, in Dutput signals cw (clockwise | HIGH (1), min. LOW (0), max. nax. | Screw terminal, 7-pin, co Tig without key function GO5 5 ± 5 % 4.0 V / 0 mA 3.4 V / 5 mA 3.0 V / 20 mA 1.3 V / 15 mA 25 pulses A B 90° 360° Screw terminal, 7-pin, co Tig | G12 A, B 10 . 80 4.9 V / 0 mA 3.9 V / 5 mA 3.6 V / 20 mA 1.3 V / 15 mA 20 A | 800 μs 1.5² (AWG 22 16) with key function OV A B Out H H H H H H H G24 30 | mA |
| Dutput circuit, push-pull Dutput stage Dutput signals Derating voltage U _B Deprating current, no load, i Dutput voltage Dutput voltage Dutput current per output, in Dutput signals cw (clockwise | HIGH (1), min. LOW (0), max. nax. | Screw terminal, 7-pin, co Tig without key function GO5 5 ± 5 % 4.0 V / 0 mA 3.4 V / 5 mA 3.0 V / 20 mA 1.3 V / 15 mA 25 pulses A B Screw terminal, 7-pin, co | G12 A, B 10 . 80 4.9 V / 0 mA 3.9 V / 5 mA 3.6 V / 20 mA 1.3 V / 15 mA 20 A B anductor cross-section 0.08² . htening torque, max. 0.5 Nm | 800 μs 1.5² (AWG 22 16) with key function OV A B Out H H H H H H H G24 30 | mA |
| Dutput circuit, push-pull Dutput stage Dutput signals Derating voltage U _B Deprating current, no load, in Dutput voltage Dutput signals current per output, in Dutput signals cw (clockwise | HIGH (1), min. LOW (0), max. nax. | Screw terminal, 7-pin, co Tig without key function G05 5 ± 5 % 4.0 V / 0 mA 3.4 V / 5 mA 3.0 V / 20 mA 1.3 V / 15 mA 25 pulses A B 90° Screw terminal, 7-pin, co Tig without key function | G12 A, B 10 . 80 4.9 V / 0 mA 3.9 V / 5 mA 3.6 V / 20 mA 1.3 V / 15 mA 20 A B anductor cross-section 0.08² . htening torque, max. 0.5 Nm | 800 μs 1.5² (AWG 22 16) with key function OV A B Out H H H H H H H H G24 30 | mA |
| Dutput circuit, push-pull Dutput stage Dutput signals Deparating voltage U _B Deparating current, no load, is Dutput voltage Dutput voltage Dutput current per output, in | HIGH (1), min. LOW (0), max. nax. | Screw terminal, 7-pin, co Tig without key function GO5 5 ± 5 % 4.0 V / 0 mA 3.4 V / 5 mA 3.0 V / 20 mA 1.3 V / 15 mA 25 pulses A B 90° 360° Screw terminal, 7-pin, co Tig | G12 A, B 10. 80 4.9 V / 0 mA 3.9 V / 5 mA 3.6 V / 20 mA 1.3 V / 15 mA 20 A B Inductor cross-section 0.08². A Inductor cross-section 0.08². B Inductor cross-section 0.08². A Inductor cross-section 0.08². B | 800 μs 1.5² (AWG 22 16) with key function OV A B Out H H H H H H H H G24 30 | V DO mA |



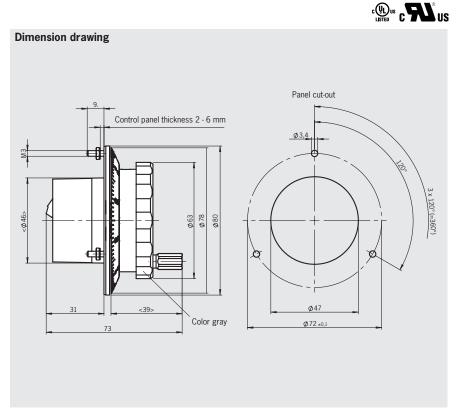
Handwheel HKC

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



Notes

- ▶ Output A05 suitable for Siemens control systems with RS422 input
- ▶ Output G05 suitable for Fanuc control systems



| Series | Number of pulses per revolution | Connection | Detent positions | Outputs | Order No./item |
|--------|---------------------------------|----------------------------|------------------|---|--------------------------------|
| | 25 | S Screw terminal | 100 | G12 Push-pull 5 V U _B = 10 30 V DC | 072940 HKC025S100G12 |
| НКС | | | | A05 RS422A U _B = 5 V DC | 087733 HKC100S100A05 |
| HIC | 100 | 100 S Screw terminal | 100 | G05 Push-pull 5 V U _B = 5 V DC | 082573 HKC100S100G05 |
| | | | | G24 Push-pull 1030 V U _B = 10 30 V DC | 087739 HKC100S100G24 |



| Parameter | | Value | | Unit |
|---|------------------|-----------------------------|---|------|
| Pulses per revolution | | 2 x 25 or 2 x 100 | | |
| Detent positions | | 100 | | |
| Housing material | | Plastic/metal | | |
| Weight | | 0.25 | | kg |
| Detent mechanism | | Magnetic | | |
| Shaft loading, axial, max. | | 25 | | N |
| Shaft loading, radial, max. | | 40 | | N |
| Mechanical life, min. | | 5 x 10 ⁶ | | Rev. |
| Operating temperature | | 0 +50 | | °C |
| Storage temperature | | -20 +50 | | - °C |
| Atmospheric humidity, max. | 900 | | ala) | |
| | 60% | (condensation not permissil | ле) | |
| | | IP 65 250-12 | | |
| acc. to NEMA 250 | | 250-12 | | |
| Resistance to vibration | | DIN 450 CO O C | | |
| Vibrations (3 axes) | | DIN/IEC 68-2-6 | | |
| Shock (3 axes) | | DIN/IEC 68-2-27 | | |
| EMC protection requirements in accordance with CE | E | N 61000-6-2, EN 61000-6-4 | | |
| Output circuit RS422A | | | | |
| Output stage | | 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 DS/ | 22A, use RS422 differential | racaivar madula | IIIA |
| | | ZZA, use RS4ZZ umerenuar | | |
| Output signals cw (clockwise rotation) | 25 pulses | | 100 pulses | |
| | 360° | → 1 A | | |
| | 90° | ^ | | |
| | | ⊪ ⊢ = | ī — | |
| | A | /A | | |
| | = : : === | | - | |
| | /A ; ; ; | | | |
| | · Lili | В | | |
| | D : | = | | |
| | В | /B | | |
| | | | | |
| | /B | | 200 μs 400 μs | |
| | i L <u>i.</u> | | . 800 μs | |
| Terminal assignment | | Screw terminal S | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| Output circuit, push-pull | | | | |
| Output stage | G05 | G12 | G24 | |
| Output signals | | A, B | | |
| Operating voltage U _B | 5 ± 5 % | 10 | 30 | V DC |
| Operating voltage of Operating current, no load, max. | 3 ± 3 70 | 80 | 50 | mA |
| Operating current, no load, max. | 4.01/./0 4 | | | IIIA |
| 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 | _ | _ |
| | 3.0 V / 20 mA | 3.6 V / 20 mA | U _B - 3 V / 20 mA | |
| LOW (0), max. | 1.3 V / 15 mA | 1.3 V / 15 mA | 3 V / 20 mA | |
| Output current per output, max. | | 20 | | mA |
| Output signals cw (clockwise rotation) | 25 pulses | | 100 pulses | |
| output digitale off (discittings fortune) | | _ | | |
| | A | I A | | |
| | | | - | |
| | | | | |
| | D I | | 1 1 1 | 1 |
| | В | В | | |
| | | | 200 us 400 us | |
| | 90° | В_ | 200 µs 400 µs | |
| | | B | 200 µs 400 µs 800 µs | |
| Terminal assignment | 90° | Screw terminal S | | |
| Ferminal assignment | 90° | Screw terminal S | | |
| Terminal assignment | 90° | Screw terminal S | | |
| Terminal assignment | 90° | _ | | |



Handwheel HKD

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



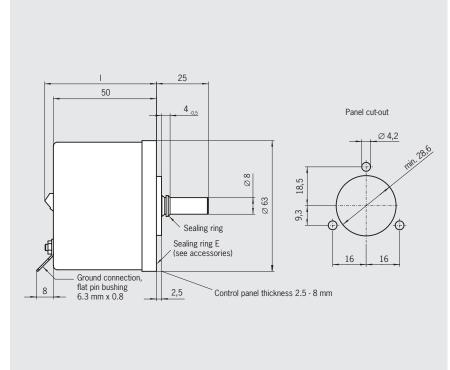
Notes

- ▶ Output A05 suitable for Siemens control systems with RS422 input
- ▶ Output G05 suitable for Fanuc control systems
- ▶ Dial: see accessories page 72
- ▶ Front panel: see accessories page 72

Mounting depth I

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

Dimension drawing



| Series | Number of pulses per revolution | Connection | Detent positions | Outputs | Order No./item | | |
|--------|------------------------------------|--|------------------|---|---------------------------------|--|--------------------------------|
| | 25 | S Screw terminal | 100 | G12 Push-pull 5 V U _B = 10 30 V DC | 091525 HKD025\$100G12 | | |
| | | | | A05 RS422A U _B = 5 V DC | 054866 HKD100S100A05 | | |
| | | S Screw terminal V Ribbon cable 6-pin with plug | • | _ | 100 | G05 Push-pull 5 V U _B = 5 V DC | 083354 HKD100S100G05 |
| HKD | 100 | | | G24 Push-pull 1030 V U _B = 10 30 V DC | 054868 HKD100S100G24 | | |
| | | | | A05 RS422A U _B = 5 V DC | 057036 HKD100V100A05 | | |
| | | | 100 | G05 Push-pull 5 V U _B = 5 V DC | 091527 HKD100V100G05 | | |
| | 6-pin with plug | | | G24 Push-pull 1030 V U _B = 10 30 V DC | 057037 HKD100V100G24 | | |



| Parameter | | Value | | Unit |
|---|--|----------------------------|------------------------------|------|
| Pulses per revolution | 2 | x 25 or 2 x 100 | | |
| Detent positions | 100 | | | |
| Housing material | | Aluminum | | |
| Weight | | 0.5 | | kg |
| Detent mechanism | | Magnetic | | |
| Shaft loading, axial, max. | | 25 | | N |
| Shaft loading, radial, max. | | 40 20 x 10 ⁶ | | N |
| Mechanical life, min. | | | Rev. | |
| Operating temperature | | 0 +70 | | °C |
| Storage temperature | | -25 +85 | | °C |
| Atmospheric humidity, max. | 80% (cond | ensation not permissible |) | |
| Front degree of protection acc. to EN 60529/IEC 529 | | IP 65 | | |
| acc. to NEMA 250 | | 250-12 | | |
| Resistance to vibration | | DIN 450 CO O C | | |
| Vibrations (3 axes) | | DIN/IEC 68-2-6 | | |
| Shock (3 axes) | | DIN/IEC 68-2-27 | | |
| EMC protection requirements in accordance with CE | EN 610 | 00-6-2, EN 61000-6-4 | | |
| Output circuit RS422A | | A05 | | |
| Output stage | | | | |
| Output signals | | A, /A, B, /B 5 ± 5 % | | V DC |
| Operating voltage U _B Operating current, no load, max. | | 5 ± 5 % 80 | | mA |
| Output circuit | According to DCA22A | use RS422 differential re | coiver module | IIIA |
| Output signals cw (clockwise rotation) | 25 pulses | 15e N3422 uillelelluai le | 100 pulses | |
| Output signals cw (clockwise rotation) | 23 puises 360° | | 360° | |
| | 90° | | 75° 210° | |
| | | | | |
| | A | А | | |
| | | = | | |
| | /A | /A | | |
| | · L | | | |
| | В | В | | |
| | | _ | | |
| | /B | /B | | |
| | /B | /0 | | |
| | | | / | |
| | Detent position areas | De | tent position area | |
| Terminal assignment | Ribbon cable V | | crew terminal S | |
| Torriman doorgramone | /B/A OV | | | |
| | | <u> </u> | 00000 | |
| | | U _B | OV A /A B /B | |
| | B A U _B | | | |
| Output circuit, push-pull | | | | |
| Output stage | G05 | G12 | G24 | + |
| Output signals | 400 | A, B | uL-T | |
| Operating voltage U _B | 5 ± 5 % | 10 | 30 | V DC |
| Operating voltage of Operating current, no load, max. | 3 ± 3 /0 | 80 | 30 | mA |
| Output voltage HIGH (1), min. | 4.0 V / 0 mA | 4.9 V / 0 mA | _ | 1117 |
| output voltage <u>man (1), min.</u> | 3.4 V / 5 mA | 3.9 V / 5 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. | 1.5 7 / 15 11/1 | 20 | 3 7 / 20 11111 | mA |
| Output signals cw (clockwise rotation) | 25 pulses | 20 | 100 pulses | 1101 |
| output signals on (clockwise rotation) | 360° | | 360° | |
| | 90° | 1 7 | | |
| | ************************************** | <u> </u> | | |
| | A | A | | |
| | | | | |
| | p i i i | В | | |
| | B | D | | |
| | | | | |
| | Detent position areas | Dα | tent position area | |
| Terminal assignment | - | | crew terminal S | + |
| Terminal assignment | Ribbon cable V | 5 | crew fellilligi 2 | |
| | /B /A OV | O | 00000 | |
| | | U _B | OV A B | |
| | B A U _B | | | |
| | J A ∪B | | | |



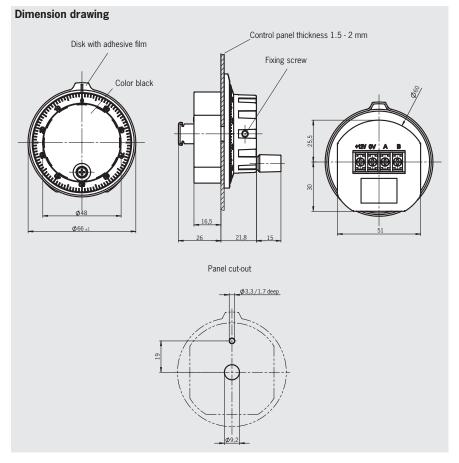
Handwheel HWA

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



Notes

- ▶ Output A05 suitable for Siemens control systems with RS422 input
- ▶ Output G05 suitable for Fanuc control systems
- ▶ Packaging unit 10 pieces



| Series | Number of pulses per revolution | Connection | Detent positions | Outputs | Order No./item |
|----------------------------------|------------------------------------|----------------------------|------------------|--|--|
| | 25 | T Screw terminal | 100 | $\begin{array}{c} \textbf{G12} \\ \text{Push-pull 5 V} \\ \text{U}_{\text{B}} = 12 \text{ V DC} \end{array}$ | 072972 HWA025T100G12/V10 (10 ea.) |
| HWA Packaging unit 10 ea. | 100 | т | 100 | A05 RS422A U _B = 5 V DC | 072970 HWA100T100A05/V10 (10 ea.) |
| | 100 | Screw terminal | 100 | $\begin{array}{c} \textbf{G05} \\ \textbf{Push-pull 5 V} \\ \textbf{U}_{B} = \textbf{5 V DC} \end{array}$ | 072971 HWA100T100G05/V10 (10 ea.) |



| Parameter | Value | 9 | Unit | | |
|--|---|--|---------|--|--|
| Pulses per revolution | 2 x 25 or 2 | x 100 | | | |
| Detent positions | 100 | | | | |
| Housing material | Plastic/n | netal | | | |
| Weight | 0.1 | | kg | | |
| Detent mechanism | Mechar | iical | | | |
| Shaft loading, axial, max. | 25 | | N | | |
| Shaft loading, radial, max. | 40 | | N | | |
| Mechanical life, min. | 1 x 10 |)6 | Rev. | | |
| Operating temperature | 0 + | | °C | | |
| Storage temperature | -20 + | | °C | | |
| Atmospheric humidity, max. | 80% (condensation | | | | |
| Front degree of protection acc. to EN 60529/IEC 529 | IP65 | | | | |
| acc. to NEMA 250 | 250-1 | | | | |
| Output circuit RS422A | 230 1 | | | | |
| Output stage | AO5 | | | | |
| Output stage Output signals | A, /A, B | | | | |
| | | | V DC | | |
| Operating voltage U _B | 5 ± 10 80 | 76 | V DC | | |
| Operating current, no load, max. | | 2 1:11 | mA | | |
| Output specifications | According to RS422A, use RS42 | | | | |
| Output signals cw (clockwise rotation) | 100 pul | | | | |
| | 3 | 60° | | | |
| | 90° | | | | |
| | A - | 1 : [- | | | |
| | A | | | | |
| | , , , , , , , , , , , , , , , , , , , | | | | |
| | /A | İ | | | |
| | | <u></u> | | | |
| | В | | | | |
| | | | | | |
| | /B | 1 | | | |
| | /- <u> </u> | | | | |
| | 5 / | | | | |
| | Detent posit | | | | |
| Terminal assignment | Screw terminal T | | | | |
| | +5V 0V A Ā | БВ | | | |
| | | alalal | | | |
| | | | | | |
| | | | | | |
| | I . | | | | |
| Output circuit push-pull | | | | | |
| Output circuit, push-pull | G05 | G12 | | | |
| Output stage | G05 | G12 | | | |
| Output stage Output signals | A, B | | V DC | | |
| Output stage Output signals Operating voltage U _B | A, B 5 ± 10 % | | V DC | | |
| Output stage Output signals Operating voltage U _B Operating current, no load, max. | A, B 5 ± 10 % 20 | 12 ± 10 % | V DC mA | | |
| Output stage Output signals Operating voltage U _B Operating current, no load, max. Output voltage HIGH (1), min. | A, B 5 ± 10 % 20 4.0 V/2 | 12 ± 10 % | | | |
| Output stage Output signals Operating voltage U _B Operating current, no load, max. Output voltage HIGH (1), min. LOW (0), max. | A, B 5 ± 10 % 20 4.0 V/2 0.5 V/2 | 12 ± 10 % | mA | | |
| | A, B 5 ± 10 % 20 4.0 V / 2 0.5 V / 2 20 | 12 ± 10 % 0 mA 0 mA | | | |
| Output stage Output signals Operating voltage U _B Operating current, no load, max. Output voltage HIGH (1), min. LOW (0), max. | A, B 5 ± 10 % 20 4.0 V / 2 0.5 V / 2 20 100 pulses | 12 ± 10 % 0 mA 0 mA 25 pulses | mA | | |
| | A, B $5 \pm 10 \%$ 20 4.0 V / 2 0.5 V / 2 20 100 pulses 360° | 12 ± 10 % 0 mA 0 mA 25 pulses 360° | mA | | |
| Output stage Output signals Operating voltage U _B Operating current, no load, max. Output voltage HIGH (1), min. LOW (0), max. Output current per output, max. | A, B 5 ± 10 % 20 4.0 V / 2 0.5 V / 2 20 100 pulses | 12 ± 10 % 0 mA 0 mA 25 pulses | mA | | |
| Output stage Output signals Operating voltage U _B Operating current, no load, max. Output voltage HIGH (1), min. LOW (0), max. Output current per output, max. | A, B 5 ± 10 % 20 4.0 V / 2 0.5 V / 2 20 100 pulses 360° | 12 ± 10 % 0 mA 0 mA 25 pulses 360° | mA | | |
| Output stage Output signals Operating voltage U _B Operating current, no load, max. Output voltage HIGH (1), min. LOW (0), max. Output current per output, max. | A, B $5 \pm 10 \%$ 20 4.0 V / 2 0.5 V / 2 20 100 pulses 360° | 12 ± 10 % 0 mA 0 mA 25 pulses 360° | mA | | |
| Output stage Output signals Operating voltage U _B Operating current, no load, max. Output voltage HIGH (1), min. LOW (0), max. Output current per output, max. | A, B 5 ± 10 % 20 4.0 V / 2 0.5 V / 2 20 100 pulses 360° | 12 ± 10 % 0 mA 0 mA 25 pulses 360° | mA | | |
| | A, B 5 ± 10 % 20 4.0 V / 2 0.5 V / 2 20 100 pulses 360° | 12 ± 10 % 0 mA 0 mA 25 pulses 360° | mA | | |
| | A, B 5 ± 10 % 20 4.0 V / 2 0.5 V / 2 20 100 pulses 360° | 12 ± 10 % 0 mA 0 mA 25 pulses 360° | mA | | |
| | A, B 5 ± 10 % 20 4.0 V / 2 0.5 V / 2 20 100 pulses 360° | 12 ± 10 % 0 mA 0 mA 25 pulses 360° | mA | | |
| | A, B 5 ± 10 % 20 4.0 V / 2 0.5 V / 2 20 100 pulses 360° | 12 ± 10 % 0 mA 0 mA 25 pulses 360° | mA | | |
| Output stage Output signals Operating voltage U _B Operating current, no load, max. Output voltage HIGH (1), min. LOW (0), max. Output current per output, max. Output signals CW (clockwise rotation) | A, B 5 ± 10 % 20 4.0 V / 2 0.5 V / 2 20 100 pulses 360° A B Detent position area | 12 ± 10 % 0 mA 0 mA 25 pulses 360° A Detent position areas | mA | | |
| | A, B 5 ± 10 % 20 4.0 V / 2 0.5 V / 2 20 100 pulses 360° A B Detent position area Screw terr | 12 ± 10 % 0 mA 0 mA 25 pulses 360° A Detent position areas | mA | | |
| Output stage Output signals Operating voltage U _B Operating current, no load, max. Output voltage HIGH (1), min. LOW (0), max. Output current per output, max. Output signals CW (clockwise rotation) | A, B 5 ± 10 % 20 4.0 V / 2 0.5 V / 2 20 100 pulses 360° A B Detent position area | 12 ± 10 % 0 mA 0 mA 25 pulses 360° A Detent position areas | mA | | |
| Output stage Output signals Operating voltage U _B Operating current, no load, max. Output voltage HIGH (1), min. LOW (0), max. Output current per output, max. Output signals CW (clockwise rotation) | A, B 5 ± 10 % 20 4.0 V / 2 0.5 V / 2 20 100 pulses 360° A B Detent position area Screw terr | 12 ± 10 % 0 mA 0 mA 25 pulses 360° A Detent position areas | mA | | |
| Output stage Output signals Operating voltage U _B Operating current, no load, max. Output voltage HIGH (1), min. LOW (0), max. Output current per output, max. Output signals CW (clockwise rotation) | A, B 5 ± 10 % 20 4.0 V / 2 0.5 V / 2 20 100 pulses 360° A B Detent position area Screw terr | 12 ± 10 % 0 mA 0 mA 25 pulses 360° A Detent position areas | mA | | |



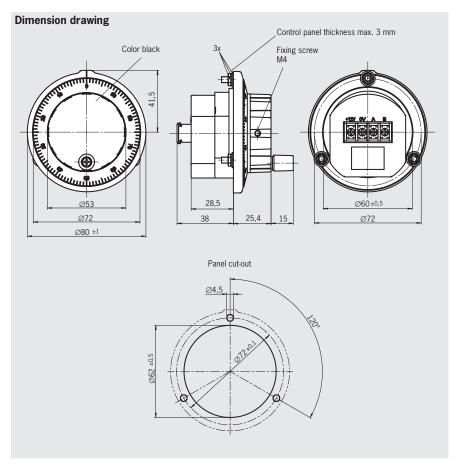
Handwheel HWB

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



Notes

- ▶ Output A05 suitable for Siemens control systems with RS422 input
- ▶ Output G05 suitable for Fanuc control systems



| Series | Number of pulses per revolution | Connection | Detent positions | Outputs | Order No./item |
|---------------------------------|------------------------------------|----------------------------|------------------|--|---|
| | 25 | T Screw terminal | 100 | $\begin{array}{c} \textbf{G12} \\ \text{Push-pull 5 V} \\ \text{U}_{\text{B}} = 12 \text{ V DC} \end{array}$ | 072975 HWB025T100G12/V05 (5 ea.) |
| HWB Packaging unit 5 ea. | 100 | т | 100 | A05 RS422A U _B = 5 V DC | 072973 HWB10T100A05/V05 (5 ea.) |
| | 100 | Screw terminal | 100 | G05 Push-pull 5 V U _B = 5 V DC | 072974 HWB100T100G05/V05 (5 ea.) |



| Parameter | | Value | Unit | | |
|--|----------------------|---|-------|--|--|
| Pulses per revolution | | 5 or 2 x 100 | Offic | | |
| Detent positions | | 100 | | | |
| Housing material | Pla | astic/metal | | | |
| Weight | 1 10 | 0.125 | kg | | |
| Detent mechanism | M | lechanical | 1/8 | | |
| Shaft loading, axial, max. | IV | 25 | N | | |
| Shaft loading, radial, max. | | 40 | N | | |
| Mechanical life, min. | | 1 x 10 ⁶ | Rev. | | |
| Operating temperature | 0 +50 | | | | |
| Storage temperature | | 0 +50 | °C | | |
| Atmospheric humidity, max. | | ation not permissible) | C | | |
| | 60% (condens | IP65 | | | |
| | | | | | |
| acc. to NEMA 250 | | 250-12 | | | |
| Output circuit RS422A | | | | | |
| Output stage | | A05 | | | |
| Output signals | | /A, B, /B | | | |
| Operating voltage U _B | 5 | 5 ± 10 % | V DC | | |
| Operating current, no load, max. | | 80 | mA | | |
| Output specifications | | RS422 differential receiver module | | | |
| Output signals cw (clockwise rotation) | 10 | 00 pulses | | | |
| | <u> </u> | 360° | | | |
| | 90 |)° | | | |
| | ^ | | | | |
| | A | | | | |
| | <u>"</u> = | | | | |
| | /A | | | | |
| | _ | | | | |
| | В | | | | |
| | | | | | |
| | /B | | | | |
| | , | | | | |
| | B | / | | | |
| | | position area | | | |
| Terminal assignment | | w terminal T | | | |
| | +5V 0V | A A B B | | | |
| | | | | | |
| | | | | | |
| | [설달] | <u> </u> | | | |
| Output circuit, push-pull | | | | | |
| Output stage | G05 | G12 | | | |
| Output signals | | A, B | | | |
| Operating voltage U _B | 5 ± 10 % | 12 ± 10 % | V DC | | |
| Operating current, no load, max. | <u> </u> | 20 | mA | | |
| Output voltage HIGH (1), min. | 4.0 | V / 20 mA | 1101 | | |
| LOW (0), max. | | V / 20 mA | | | |
| Output current per output, max. | 0.5 | 20 | mA | | |
| | 100 pulses | 25 pulses | IIIA | | |
| Output signals CW (clockwise rotation) | 360° | 360° | | | |
| | *90°. | *90° | | | |
| | √ 30) | 50 | | | |
| | Α 🔲 | A | | | |
| | ``_ | | | | |
| | | p i i i | | | |
| | В | B | | | |
| | | | | | |
| | Detent position area | Detent position areas | | | |
| Torminal accignment | | w terminal T | | | |
| Terminal assignment | | | | | |
| | +U _B | OV A B | | | |
| | 園 | | | | |
| | | (4) (4) (4) (4) (4) (4) (4) (4) (4) (4) | | | |
| | ILTAI | | | | |



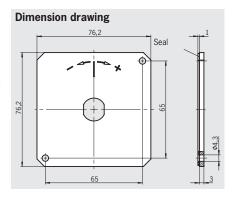
Accessories

Front panel for handwheel HKB

► Front panel with bonded seal

Ordering table

| Item | Order no. |
|---|-----------|
| Front panel for handwheel HKB with dial 100914, anodized silver | 105072 |
| Front panel for handwheel HKB with dial 100914, anodized black | 105073 |



Front panel for handwheel HKD

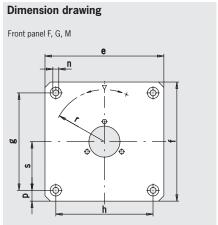
- ► Front panel with bonded seal
- ▶ Seal handwheels without front panel with sealing ring E

Dimensions

| Design | е | f | g | h | k | m | n | р | s | r |
|--------|------|------|----|----|----|----|-----------|---|---|-------|
| F | 110 | 110 | 90 | 90 | - | - | DIN74-Am5 | - | - | R48 |
| G | 108 | 108 | 89 | 89 | - | - | 5.2 | - | - | R48 |
| M | 76.2 | 76.2 | - | - | 65 | 65 | 4.2 | - | - | R35.5 |

Ordering table

| Item | Order no. |
|-------------------------|-----------|
| Sealing ring E | 054861 |
| Front panel F with seal | 028760 |
| Front panel G with seal | 028761 |
| Front panel M with seal | 041758 |

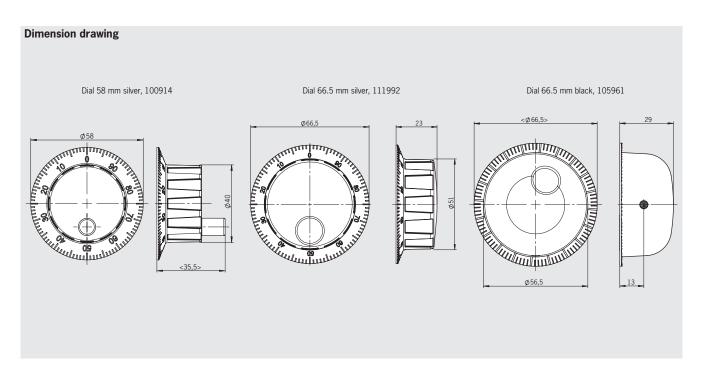


Dials for handwheel HKB

| Item | Order no. |
|--|-----------|
| Dial 58 mm silver, metal with crank ¹⁾ | 100914 |
| Dial 66.5 mm silver, metal with finger recess 112) | 111992 |
| Dial 66.5 mm black, plastic with finger recess ²⁾ | 105961 |

Suitable for installation in operator panels

²⁾ For use of handwheel HKB in the kits for hand-held pendant stations HBA and HBM $\,$





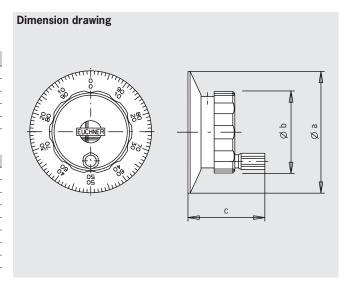
Dials for handwheel HKD

Dimensions

| Design | ∅ a | Ø b | 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

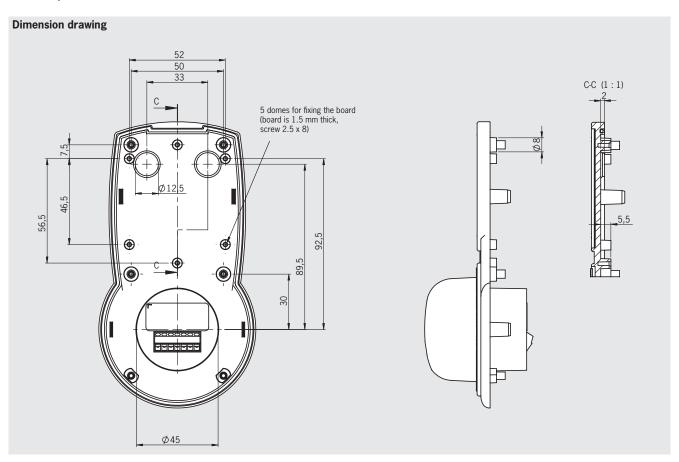
| Item | Order no. |
|--------------------------------|-----------|
| Dial 90 mm black | 057266 |
| Dial 90 mm silver | 057268 |
| Dial 78 mm black | 057280 |
| Dial 78 mm silver | 057272 |
| Dial 75 mm silver | 072597 |
| Dial 65 mm black, for HBL kit | 057318 |
| Dial 65 mm silver, for HBL kit | 057314 |
| Dial 58 mm black | 059276 |



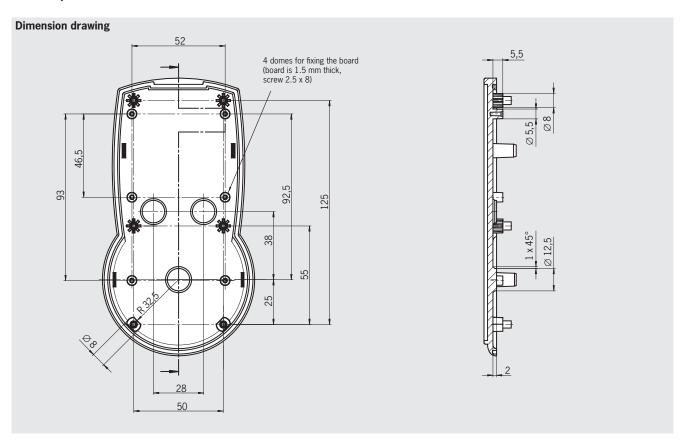


Dimension drawing - HBA housing top shell

► HBA top shell with handwheel



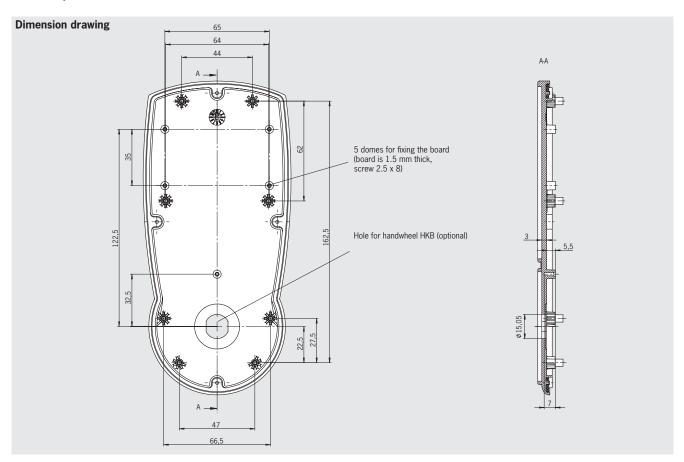
► HBA top shell without handwheel





Dimension drawing - HBM housing top shell

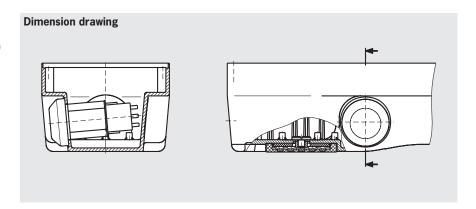
► HBM top shell with and without handwheel



Assembly drawings

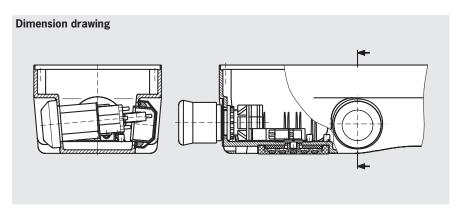
Housings HBL-073109 and HBL-072632

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



Housings HBL-072983 and HBL-083484

- ► Mounting enabling switch ZSE2-4 C1943 (2 NO contacts, 2 positively driven contacts)
- ▶ Mounting EMERGENCY STOP device 073985



Request form for hand-held pendant stations HBA without handwheels

| Customer | | | | | |
|-----------------|-------------------------|---|-----------------------|------------------|------------------------------------|
| Company | | | | Telephone | |
| Address | | | | Fax | |
| | | | | E-mail | |
| | | | | | |
| | | | | | |
| | | | | | |
| Name | | | | Department | |
| First name | | | | Date | |
| | 1 | | | | |
| | | | | | |
| | | | | | |
| Housing | Gray | | | EMERGE | NCY 2 NC contacts |
| | Black | | | STOP | |
| | | | | | |
| Front foil | EUCHNER Sta | | | Selector left | |
| | Customer-spec | cific as per attachment | | | positions Gray code |
| Pushbuttons | Medical | | | | positions 1 of X |
| Pushbuttons | Without 3 membrane b | uttono | | D | Labeling: |
| | single bu | | | Selector | switch Without |
| | Sirigic bu | tton | | right | positions Gray code |
| LED | Without | | (((|) | positions 1 of X |
| | With | | | <i> </i> | Labeling: |
| | | | | // | |
| Key-operated | Without | | | Enabling | device Without |
| switch | With | | | | 2-stage, each 1 NO, right and left |
| | | | | | 3-stage, 2 NO, left |
| Toggle switch | Without | | | | |
| | With: | _ | | | |
| | | | | | |
| Joystick | Without | | | | |
| | With KE | | | | |
| 0-1-1- | 0.1.115 | | \bowtie | | |
| Cable | | , can be streched to 3.5 m can be streched to 5.0 m | | | |
| | Straight: | | | | |
| | Straight. | 111 | \Rightarrow | | |
| Plug connector | Burndy metal | 1 | Ä | | |
| | Coninvers met | | Щ | | |
| | Other: | <u> </u> | | | |
| | Without plug co | onnector | | | |
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| | | Further co | mponents and versions | on request | |
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| Special require | ements | | | | |
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| Quotation | | | | | |
| Quantity | | One-off project | t requirement | Series | s production requirement per year |
| Delivery date r | requested | Week | | | - Francisco - Famourous kon Jour |
| | 4 | 1 1 22.0 | | | |
| Date | | | | Signa | ature |
| | | | | | |



Request form for hand-held pendant stations HBA with handwheels

| Customer | | | | | | |
|-----------------------------|---|-------------------|--|--------------------|-----------|--------------------------------------|
| Company | | | | Telephone | | |
| Address | | | | Fax | | |
| | | | | E-mail | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| NI. | | | | D | | |
| Name First name | | | | Department Date | | |
| 1 ii st name | | | | Date | | |
| | | | | | | |
| | | | | | _ | |
| Housing | Gray | | | EMERGEN | ICY | 2 NC contacts |
| | Black | | | STOP | | |
| E | | | 0 1 10 100 x Y Z 4 5 | Selector s left | witch | Without |
| Front foil | EUCHNER Standard Customer-specific as p | or ottoobment | | 1011 | | positions Gray code positions 1 of X |
| | Customer-specific as p | er attacililent | | | | Labeling: |
| Pushbuttons | Without | (| | | L | |
| | 3 membrane buttons | \ | | Selector s | witch | Without |
| | single button | , | A STATE OF THE PARTY OF THE PAR | right | | positions Gray code |
| | | (/ | | 1 | | positions 1 of X |
| LED | Without | (| | | | Labeling: |
| | With | \ | | | | |
| | □ Magni . | | | Enabling o | device | Without |
| Key-operated switch | Without | | | | | 2-stage, each 1 NO, right and left |
| | With | | | | L | 3-stage, 2 NO, left |
| Toggle switch | Without | | | Handwhee | el [| Without |
| roggio dinitori | With: | | | See catalog | | magnetic |
| | | | | page 33 | | mechanical |
| Joystick | Without | | Ŭ □ | | | A05, 100 pulses, RS422 |
| | With KE | | | | | G05, 100 pulses |
| | | | \bowtie | | | G12, 25 pulses |
| Cable | Coiled 1.5 m, can be | | \sim | | | G24, 100 pulses |
| | Coiled 2.0 m, can be s | treched to 5.0 m | | On which | Г | Ciamana Amai |
| | Straight: m | | \Rightarrow | control sy | stem | Siemens, type: |
| Plug connector | Burndy metal | | H n | will the handwhee | | Fanuc, type: |
| r lug comicotor | Coninvers metal | | | be operat | | Other / brand: |
| | Other: | | | | L | |
| | Without plug connector | | | | | |
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| | | Further com | ponents and versions | on request | | |
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| Special require | ements | | | | | |
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| Quantity Delivery date r | roquestod | One-off project r | equirement | Series | productio | on requirement per year |
| | ечиезіей | Week | | | | |
| Date | | | | Signa | ture | |
| | | | | | | |

Request form for hand-held pendant stations HBM without handwheels

| Customer | | | | | | |
|---------------------|-------------------------|-------------------------|--------------------|-------|-----------------------------|------------------------------------|
| Company | | | 17 | Telen | hone | |
| Address | | | | Fax | mone | |
| Audi 000 | | | <u> </u> | E-ma | ail | |
| | | | | | | |
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| | | | | | | |
| | | | | | | |
| Name | | | [| Эера | artment | |
| First name | | | 1 | Date | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| Front foil | EUCHNER Standard | | | | EMERGENCY | 2 NC contacts |
| | Customer-specific as p | er attachment | | | STOP | |
| | | | | ١ | | |
| Pushbuttons | Without | | | | Selector switch left | Without |
| | 3 membrane buttons | | , | 1 | ieit | positions Gray code |
| | single button | | | | | positions 1 of X |
| | | | | | | Labeling: |
| LED | Without | | | | | |
| | With | | | | Selector switch right | Without |
| W | West | | | | | positions Gray code |
| Key-operated switch | Without | 1 | / | | | positions 1 of X |
| SWITCH | With | X | // | | | Labeling: |
| To make another to | West | (()) | f ()) | | For a la Company of a color | West |
| Toggle switch | Without | /// | . // // | | Enabling device | Without |
| | With: | // | | | | 2-stage, each 1 NO, right and left |
| Lauretta la | West | | | | | 3-stage, 2 NO, left |
| Joystick | Without | | | | | |
| | With KE | | | | | |
| Cable | Coiled 1.5 m, can be | atrochad to 2 E m | | | | |
| Cable | | | | | | |
| | Coiled 2.0 m, can be s | treched to 5.0 m | | | | |
| | Straight: m | | 4 | | | |
| Plug connector | Burndy metal | | \bowtie | | | |
| riug connector | Coninvers metal | | \mathcal{I} | | | |
| | Other: | | | | | |
| | Without plug connector | | Ţ | | | |
| | without plug confidents | | ñ | | | |
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| | | Further compone | nts and versions o | n req | quest | |
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| Special require | ements | | | | | |
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| Quotation | | | | | | |
| Quantity | | One-off project require | rement | | Series product | tion requirement per year |
| Delivery date r | equested | Week | | | | |
| Date | | · | | | Cion at | |
| Date | | | | | Signature | |
| | | | | | | |



Request form for hand-held pendant stations HBM with handwheels

| Customer | | | | | | | | |
|-----------------|-----------|--------------------------|----------------|-------------------------|---------------------|------------|-----------|---|
| Company | | | | | Telephone | | | |
| Address | | | | | Fax | | | |
| | | | | | E-mail | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Name | | | | | Department | | | |
| First name | | | | | Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Front foil | E | UCHNER Standard | | | EMERGE | NCY | | 2 NC contacts |
| | Пс | ustomer-specific as per | attachment | | STOP | ı | | |
| | ш | | | | Selector | switch | | Without |
| Pushbuttons | W | ithout | | 0 1 10 100 X Y Z 4 5 | left | | \exists | positions Gray code |
| | 3 | membrane buttons | | | | | | positions 1 of X |
| | | single button | | | | | | Labeling: |
| | ш | 3 | | | | ı | | G |
| LED | W | ithout | | | Selector | switch | | Without |
| | Пw | ith | | | right | | \neg | positions Gray code |
| | ш | | | | | | \neg | positions 1 of X |
| Key-operated | W | ithout | | | | | | Labeling: |
| switch | - | ith | | | | ı | | |
| | Ш. | | | | Enabling | device | | Without |
| Toggle switch | W | ithout | | | | | \neg | 2-stage, each 1 NO, right and left |
| | \vdash | ith: | | | | | _ | 3-stage, 2 NO, left |
| | Ш | | | | | ı | | 0 000, 2 110, 1011 |
| Joystick | W | ithout | | | Handwhe | eel | | Without |
| | _ | ith KE | | | See catal | | _ | magnetic |
| | Ш | | | m | page 33 | | \dashv | mechanical |
| Cable | Пс | oiled 1.5 m, can be s | treched to 3.5 | m 🛢 | | | _ | A05, 100 pulses, RS422 |
| | | oiled 2.0 m, can be stre | | | | | _ | G05, 100 pulses |
| | | raight: m | | П | | | \exists | G12, 25 pulses |
| | | | | | | | \neg | G24, 100 pulses |
| Plug connector | В | urndy metal | | | | ı | | ,, |
| J | _ | oninvers metal | | | On which | h [| | Siemens, type: |
| | По | ther: | _ | \bowtie | control s | system | | Fanuc, type: |
| | W | ithout plug connector | | | will the handwhe | el . | | Mitsubishi, type: |
| | | | | Д | be opera | | | Other / brand: |
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| | | | Frontle en | | | | | |
| | | | Further | components and versions | s on request | | | |
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| Special require | ements | | | | | | | |
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| Quotation | | | | | | | | |
| Quantity | | | One-off proid | ect requirement | Serie | s producti | on re | equirement per year |
| Delivery date | request | ed | Week | | | | | . , , , , , , , , , , , , , , , , , , , |
| | | | | | | | | |
| Date | | | | | Sign | ature | | |
| | | | | | | | | |



Hand-held pendant stations HBL request form

| Customer | | | | | | |
|----------------|---------------|---|------------------------|-----------------------|-----------|--|
| Company | | | | Telephone | | |
| Address | | | | Fax E-mail | | |
| | | | | E-IIIali | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| Name | | | | Department | t | |
| First name | | | | Date | | |
| Front plate | EUC | HNER Standard | | EMERGE | ENCY | 2 NC contacts |
| | | k anodized er labeling | | STOP | | 1 NC contacts |
| | | omer-specific as per attachment | | | | Without |
| | oust | omer specific as per attachment | EUCHNER | Enabling | z device | 2-tage, ZSG, each 1 NO, right + left |
| Logo | With | out | | / ' | | 3-stage, ZSE 2-2 (2 NO + 1 NC) only left |
| | Cust | omer-specific as per attachment | | / | | 3-stage, ZSE 2-4 (2 NO + 2 NC) only left |
| | | | | / | | Without enabling device |
| Pushbutton | H . | out — | | Selector | r switch | Without |
| | — | ber of NO contacts | | left | | Positions Gray code |
| | - | ber of NC contacts | | | | Positions 1 of X |
| | \vdash | illuminated inated | | | | Labeling: |
| | _ | bol plate labeling | | Selector | r switch | Without |
| | | er attachment | | right | · omicon | Positions Gray code |
| | | t plate labeling | | | | Positions 1 of X |
| | as p | er attachment | | | | Labeling: |
| Key-operated | With | out | | Labeling | | Through scale wheels |
| switch | With | | | selector | | On front plate |
| | | | | | | |
| Lamp/LED | With | ι ουτ omer-specific as per attachment | | Handwh see cata | | without |
| | Cust | omer-specific as per attachment | | page 60 | - 72 | Magnetic Mechanical |
| Potentiometer | With | out | | \ | | A05, 100 pulses, RS422 |
| | Tech | nical specification: | | | | G05, 100 pulses |
| | _ | | | | | G12, 25 pulses |
| Cable | $\overline{}$ | led 1.5 m, can be streched to | 0 35 m੍ | | | G24, 100 pulses |
| | - | ed 2.0 m, can be streched to 5. | 0 m \ | Dial | | EUCHNER Logo |
| | Stra | aight: m | | | | Customer-specific logo as per attachment |
| Plug connector | D Bur | ndy metal 🔍 | | | | Silver 65 mm |
| ing connector | \vdash | nvers metal | R | | | Black 65 mm |
| | Othe | | \bowtie | | | Silver 75 mm |
| | With | out plug connector | | | | Black 75 mm |
| | | | | On whic | | Siemens, type: |
| | | | | control s will the | system | Fanuc, type: |
| | | | | handwh | | Mitsubishi, type: |
| Further compon | ents and | versions on request | | be oper | ated? | Other / brand: |
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| | | | 0 | | | |
| Special requi | rements | | | | | |
| opoolai roqui | | | | | | |
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| Quotation | | | | | | |
| Quantity | | | ff project requirement | Serie | s product | ion requirement per year |
| Delivery date | request | ted Week | | | | |
| Date | | | | Sigr | nature | |
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Index by item designation

| lkowa | Ouden se | Dage |
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| Blind plug for | 059622 | 56 |
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| · | | |

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