

These operating instructions are valid only in connection with the data sheet of the relevant hand-held pendant station HBA and with the operating instructions of the relevant HBA handwheel!

⚠ Safety precautions ⚠

EUCHNER hand-held pendant stations HBA meet the EMC protection requirements according to EN 61000-6-2 and EN 61000-6-4.

The operator of the overall higher-level system is responsible for conformity with the national and international safety and accident prevention regulations applicable to the specific application.

When designing machines and using hand-held pendant stations, the national and international safety and accident prevention regulations specific to the application must be observed, e.g.:

- ▶ EN 60204, Safety of machinery – Electrical equipment of machines
- ▶ EN 12100, Safety of machinery – General principles for design
- ▶ EN ISO 13849-1, Safety of machinery – Safety-related parts of control systems – Part 1: General principles for design

⚠ Voltages carried in hand-held pendant stations must not exceed 30 V.

⚠ Appropriate safety measures must be taken to prevent a malfunction of the hand-held pendant station from causing danger to human beings or damage to operating equipment.

⚠ **No commands that may lead to potentially hazardous conditions** may be initiated by enabling switches alone. In such a case, a second, deliberate start command is required.

⚠ Every person present in the danger area must carry his/her own enabling switch on his/her person.

⚠ **Danger** due to the mounting magnet when handling the hand-held pendant station.

Maintain a distance of at least 10 cm from pacemakers and implanted cardiac devices (ICDs).

Correct use

Machine installations can be operated in manual mode with hand-held pendant stations.

Hand-held pendant stations are used as part of an overall higher-level control system.

Use, installation and operation are permissible only as per these operating instructions.

Safety components such as emergency stop command devices or enabling switches can be installed in hand-held pendant stations. These command devices cannot fulfill a safety function on their own. They can be used to activate a stop command in a safety chain.

General function

Hand-held pendant stations make it possible to operate a machine installation, for instance, in manual mode.

Function of individual components

The hand-held pendant station may consist of the following components:

- ▶ Handwheel
- ▶ EMERGENCY-STOP device
- ▶ Enabling switches
- ▶ Selector switches
- ▶ Pushbuttons

HBA handwheel

The electronic HBA handwheel is a universal pulse generator for manual axis positioning.

Depending on the type, 100 or 25 square-wave pulses per revolution are available to the user at the output. A second, phase-shifted output allows the downstream control system to detect the direction of movement.

The pulses are evaluated in the control system.

For details, please see the *Electronic HBA handwheel* operating instructions.

EMERGENCY-STOP device

The EMERGENCY STOP device is designed to be overload proof in accordance with IEC 60947-5-1/EN ISO 13850.

Enabling switches, selector switches, pushbuttons

These components are used to transfer additional information to the higher-level machine control.

Mounting

Hand-held pendant stations are not used in one fixed location. The stations can be stored using a mounting magnet on the rear of the device or a holder.



Do not open hand-held pendant stations!



Do not throw or drop hand-held pendant stations!

Electrical connection

⚠ Electrical connection may be performed only by authorized personnel trained in EMC with the machine switched off and in de-energized state.

▶ **The machine must be safeguarded against reactivation.**

▶ **Incorrect connection may damage the components of the hand-held pendant station.**

▶ Observe electrical characteristics and the terminal assignment. The terminal assignment can be found in the data sheet.

- ▶ Always shield connection cables.
- ▶ Ground the shield on the flying lead at a central grounding point, e.g. in the distribution board or in the control cabinet, over a large surface, with low resistance and with low inductance.
- ▶ In the case of cables with plug connectors, ensure that the connection is EMC compliant.
- ▶ Original connection cables must not be shortened.
- ▶ If the connection cable is extended or modified in any other way, the operator must ensure that the valid EMC protection requirements are observed.
- ▶ Do not install connection cables in the immediate vicinity of interference sources.

Approval according to:



Operation with UL-class 2 power supply only.

Connection cables for hand-held pendant stations installed at the place of use must be separated from all moving and permanently installed cables

and un-insulated active elements of other parts of the system which operate at a voltage of over 150 V. A constant clearance of 50.8 mm must be maintained. This does not apply if the moving cables are equipped with suitable insulation materials that possess an identical or higher dielectric strength compared to the other relevant parts of the system.

Maintenance and inspection

Check the device for proper function **at regular intervals** and **after every fault**.

Inspection of the following is necessary to ensure trouble-free long-term operation:

- ▶ perfect switching function of any emergency-stop and enabling switches
- ▶ secure mounting of all components
- ▶ damage, heavy contamination, dirt and wear
- ▶ sealing of cable entry
- ▶ loose cable connections or plug connectors.

Exclusion of liability

The company is unable to accept liability in the following cases:

- ▶ Incorrect use
- ▶ If the safety instructions are not followed
- ▶ Electrical connection not performed by authorized personnel
- ▶ If modifications are made

Technical data, general

Parameter	Value
Housing material	Polycarbonate
Color	Gray RAL 7040/black RAL 9004
Weight	1.3 kg
Operating temperature	0 °C ... +50 °C
Storage temperature	-20 °C ... +50 °C
Atmospheric humidity, max.	80% (condensation not permissible)
Front degree of protection acc. to EN 60529/IEC 529	IP 65
acc. to NEMA 250	250-12
Resistance to vibration	
Vibrations (3 axes)	DIN EN 60068-2-6
Shock (3 axes)	DIN EN 60068-2-6
EMC protection requirements acc. to CE	EN 61000-6-2 EN 61000-6-4

Technical data of components

EMERGENCY STOP	Value
Standard	EN ISO 13850
Switching elements	Max. 2 NC contacts
Utilization category	DC-13
acc. to IEC 60947-5-1	U _e =24 V / I _e = 3 A
B ₁₀₀	0.1 x 10 ⁶
Enabling switch ZXE	Value
Standard	EN 60947-5-8
Switching elements	2 NO contacts
Utilization category	DC-13
acc. to EN 60947-5-2	U _e =24 V / I _e = 0.1 A
B ₁₀₀	0.75 x 10 ⁶
Pushbuttons	Value
Switching element	1 x NO contact
Switching voltage, max.	DC 30 V
Switching current, max.	0.1 A
Breaking capacity, max.	1 VA
Membrane keypad	Value
Switching elements	NO contact
Switching voltage, max.	AC 25 V/DC 42 V
Switching current, max.	0.1 A
Selector switches	Value
Switching code	1 of X, Gray, hex (see connection diagram)
Switching voltage, max.	25 V
Breaking capacity, max.	0.2 VA
Other components	
See EUCHNER catalog for hand-held pendant stations or www.euchner.com	

Technical data of handwheel

See relevant operating instructions for HBA handwheel.

Accessories

See catalog for EUCHNER hand-held pendant stations or www.euchner.com.