



# Man Machine at a glance

## Hand-Held Pendant Stations



Hand-held pendant station  
HBA



Hand-held pendant station  
HBAS



Hand-held pendant station  
HBE



Hand-held pendant station  
HBL



Hand-held pendant station  
HBLS

Kit available



Approvals



Housing material

Plastic

Plastic

Plastic

Plastic

Plastic

Color

Gray RAL 7040

Gray RAL 7040

Blue-gray RAL 7031

Gray RAL 7040

Gray RAL 7040

Weight

Approx. 1.3 kg

Approx. 0.85 kg

Approx. 1.8 kg

Approx. 2.1 kg

Approx. 2.2 kg

Operating temperature

0 to +50 °C

0 to +50 °C

0 to +55 °C

0 to +50 °C

0 to +50 °C

Storage temperature

-20 to +50 °C

-20 to +50 °C

-20 to +55 °C

-20 to +55 °C

-20 to +55 °C

Degree of protection acc. to EN 60529/NEMA

IP 65/250-12

IP 65/250-12

IP 65/250-12

IP 65/250-12

IP 65/250-12

Connection

Spiral cable 3.5 m,  
plug connector

Spiral cable 3.5 m,  
plug connector

Cable 3.5 m straight,  
plug connector

Cable 3.5 m straight,  
plug connector

Cable 3.5 m straight,  
plug connector

Selector switches

Up to 2  
with 6 positions

–

Up to 2  
with 6 positions

3/12  
positions

2 x 12  
positions

Membrane keypad

Up to 6/14

20

–

–

12

Enabling switches

2/3-stage

2/3-stage

2/3-stage

3-stage

2-stage

EMERGENCY STOP device acc. to EN 418



Handwheel 100 pulses



Buttons



Up to 9

3

12

Key-operated switch



Interface

RS422A  
(handwheel)

serial, RS422A  
3964R protocol

RS422A  
(handwheel)

RS422A  
(handwheel)

serial, RS422A  
3964R protocol

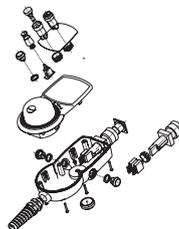
### Kits for hand-held pendant stations

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.

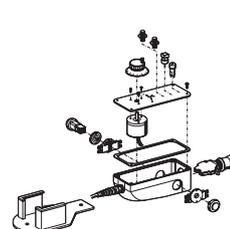
### Custom hand-held pendant stations

Customized hand-held pendant stations based on the standard devices can also be produced in small quantities. EUCHNER offers the option of customized solutions so these ergonomically designed housings can be used for various requirements.

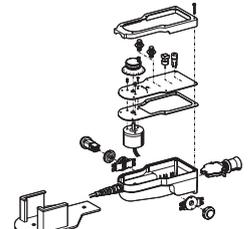
Kit HBA



Kit HBE



Kit HBL



Detailed information  
in catalog

Hand-Held Pendant Stations/Handwheels

● available ○ available on request – not available

All given data refer to the respective minimum or maximum values for the entire series.

# ManMachine at a glance



Joystick  
WK



Joystick  
WE

|              |   |  |  |
|--------------|---|--|--|
| Environment  | Approval  | Ⓞ                                      | Ⓞ                                      |
|              | Housing material  | Reinforced thermoplastic/<br>aluminium | Reinforced thermoplastic/<br>aluminium |
|              | Switching lever material  | Stainless steel                        | Galvanized steel                       |
|              | Weight  | Approx. 0.17 kg                        | Approx. 0.65 kg                        |
|              | Mechanical life, min.   | 1 x 10 <sup>6</sup>                    | 1 x 10 <sup>6</sup>                    |
|              | Ambient temperature with spring return switch                             | -5 to +65 °C                           | -5 to +65 °C                           |
|              | Ambient temperature with stayput switch                                   | -25 to +65 °C                          | -25 to +65 °C                          |
|              | Mounting  | IEC 947-5-1 D30                        | Front panel installation               |
|              | Degree of protection to IEC 529<br>on actuating side with/without bellows | IP 65/IP 54                            | IP 65/IP 54                            |
| Connection   | Switching elements, max.  | 8                                      | 8                                      |
|              | Connection  | Tab connector                          | Screw terminal                         |
|              | Contact elements  | Changeover contact<br>C IEC 947-5-1    | Changeover contact<br>C IEC 947-5-1    |
|              | Switching principle   | Snap-action<br>contact element         | Snap-action<br>contact element         |
|              | Rated insulation voltage U <sub>i</sub>                                   | 250V                                   | 250V                                   |
|              | Rated impulse withstand voltage U <sub>imp</sub>                          | 2.5 kV                                 | 2.5 kV                                 |
|              | Utilization category AC 15  | 230V/4A                                | 230V/10A                               |
|              | Utilization category DC 13  | 24V/2A                                 | 24V/4A                                 |
|              | Switching current, min. at 24V  | 12 mA                                  | 50 mA                                  |
|              | Switching voltage, min.   | 10V                                    | 24V                                    |
|              | Contact material  | Silver alloy                           | Silver alloy                           |
|              | Short circuit protection (control circuit fuse)                           | T6/F10                                 | T16/F25                                |
|              | Number of actuating directions, max.                                      | 8                                      | 8                                      |
|              | All-round actuation R (spring return switch only)                         | ○                                      | ○                                      |
|              | Switching positions per direction   | 1                                      | 1                                      |
| Pushbutton D | ○   | ○                                      |  |

Detailed information in catalog

Joystick Switches

● available    ○ available on request    – not available

All given data refer to the respective minimum or maximum values for the entire series.

Joystick Switches



Joystick  
KB



Joystick  
KF



Joystick  
KE



Joystick  
KC



Joystick  
KP

| GL                                     | GL                                    | GL                                    | GL                                     |   |
|--|---------------------------------------|---------------------------------------|--|---|
| Reinforced thermoplastic/<br>aluminium | Duroplast                             | Duroplast                             | Reinforced thermoplastic/<br>aluminium | Reinforced thermoplastic/<br>aluminium  |
| Stainless steel                        | Stainless steel                       | Stainless steel                       | Galvanized steel                       | Galvanized steel                        |
| Approx. 0.2 kg<br>1 x 10 <sup>6</sup>  | Approx. 0.2 kg<br>1 x 10 <sup>6</sup> | Approx. 0.1 kg<br>1 x 10 <sup>6</sup> | Approx. 0.75 kg<br>1 x 10 <sup>6</sup> | Approx. 0.75 kg<br>1 x 10 <sup>6</sup>  |
| -5 to +65 °C                           | -5 to +65 °C                          | -25 to +65 °C                         | -5 to +65 °C                           | -5 to +65 °C                            |
| -25 to +65 °C                          | -25 to +65 °C                         | -25 to +65 °C                         | -25 to +65 °C                          | -25 to +65 °C                           |
| IEC 947-5-1 D30                        | IEC 947-5-1 D22                       | IEC 947-5-1 D22                       | Front panel installation               | Front panel installation                |
| IP 65                                  | IP 65                                 | IP 65                                 | IP 65/IP 50                            | IP 65/IP 50                             |
| 4                                      | 4                                     | 4                                     | 3 per direction                        | 1 per direction                         |
| Tab connector                          | Screw terminal                        | Tab connector                         | Tab connector/<br>screw terminal       | Screw terminal                          |
| Changeover contact<br>C IEC 947-5-1    | Changeover contact<br>C IEC 947-5-1   | Changeover contact<br>C IEC 947-5-1   | Changeover contact<br>C IEC 947-5-1    | Analog output -10 to +10V               |
| Snap-action<br>contact element         | Snap-action<br>contact element        | Snap-action<br>contact element        | Snap-action<br>contact element         | ○                                       |
| 250V                                   | 250V                                  | 250V                                  | 250V                                   | 50V                                     |
| 2.5 kV                                 | 2.5 kV                                | 2.5 kV                                | 2.5 kV                                 | –                                       |
| 230V/5A                                | 230V/5A                               | 230V/4A                               | 230V/4A                                | –                                       |
| 24V/3A                                 | 24V/3A                                | 24V/2A                                | 24V/2A                                 | –                                       |
| 10 mA                                  | 10 mA                                 | 12 mA                                 | 12 mA                                  | –                                       |
| 12V                                    | 12V                                   | 10V                                   | 10V                                    | –                                       |
| Silver alloy                           | Silver alloy                          | Silver alloy                          | Silver alloy                           | Silver alloy                            |
| T10/F20                                | T10/F20                               | T10/F20                               | T6/F10                                 | –                                       |
| 8                                      | 8                                     | 8                                     | 8                                      | 1 axis, 2 axes or 2 axes simultaneously |
| ○                                      | –                                     | ○                                     | ○                                      | –                                       |
| 1                                      | 1                                     | 1                                     | 1                                      | –                                       |
| –                                      | –                                     | –                                     | ○                                      | ○                                       |

Joystick Switches

# ManMachine at a glance

## Electronic-Key-System EKS



Approval



Features/specific advantages

FSA

FSA

FSA

Housing material

Plastic  
(PA 6 GF30 gray)

Ambient temperature at  $U_b = DC 24V$

0 to +55 °C

0 to +55 °C

0 to +55 °C

0 to +55 °C

Mounting cut-out acc. to DIN 43700

33x68 mm

33x68 mm

33x68 mm

33x68 mm

Operating voltage  $U_b$   
(regulated, residual ripple < 5%)

20 to 28 V DC

–

20 to 28 V DC

20 to 28 V DC

Current consumption, max.

100 mA

100 mA

150 mA

150 mA

Degree of protection acc. to IEC 60529

IP 67 installed

IP 67 installed

IP 67 installed

IP 67 installed

Interface to the PC or to the control system

Serial, RS232/RS422

USB Full Speed

IEEE802.3

RS485

Transfer protocol

3964R  
ActiveX®-Modul as  
protocol driver

3964R  
ActiveX®-Modul as  
protocol driver

TCP/IP  
ActiveX®-Modul as  
protocol driver

Profibus DP acc. to  
EN 50170

Data transfer rate

9.6 kBaud

9.6 kBaud

10/100 MBit/s

9.6 to 500 kBit/s  
1.5 to 12 MBit/s

Connection type for power supply

Miniature plug connector, 3-pin

Via USB

Miniature plug connector, 3-pin

Miniature plug connector, 3-pin

Interface connection type

Sub-D 9-pin

USB type B

RJ45

Sub-D 9-pin

Cable length, max.

RS232 5 m/RS422 1000 m

3 m

100 m

100 to 1200 m

LED indicator

Green: »Ready«  
Yellow:  
»Electronic-Key active«

Green: »Ready«  
Yellow:  
»Electronic-Key active«

Green: »Ready«  
Yellow:  
»Electronic-Key active«  
Red: »Error«

Green: »Ready«  
Yellow:  
»Electronic-Key active«  
Red: »Error«

### System overview

The Electronic-Key-System EKS is used for electronic access management. It makes it possible to also log product parameters and operator entries (e. g. in accordance with FDA standard 21 CFR part 11). The Electronic-Key, in the form of a robust tag, contains a data carrier and an antenna (transponder). The data carrier has a combined read/write and fixed-code memory (see table Electronic-Key memory structure). In operation the Electronic-Key is inserted into the Electronic-Key adapter and is held in place by a spring clip. The data are transferred between the Electronic-Key adapter and the Electronic-Key without using any contacts. The Electronic-Keys are available in different colors. The colors can be used, for example, to indicate the different levels of access rights.

| Electronic-Key memory structure |                                    |    |     |     |     |     |                     |     |  |
|---------------------------------|------------------------------------|----|-----|-----|-----|-----|---------------------|-----|--|
|                                 | E <sup>2</sup> PROM (programmable) |    |     |     |     |     | ROM (serial number) |     |  |
| Byte no. [dec]                  | 0                                  | 1  | ... | 114 | 115 | 116 | ...                 | 123 |  |
| Byte no. [hex]                  | 00                                 | 01 | ... | 72  | 73  | 74  | ...                 | 7B  |  |
|                                 | Quantity: 116 bytes                |    |     |     |     |     | Quantity: 8 bytes   |     |  |

### Version FSA

As an alternative the Electronic-Key adapters with USB, Ethernet and Profibus interface are available in the FSA (For Safety Applications) version. To solve the widespread problem of tampering with safety guards, EKS has been expanded for safety-related applications in conjunction with operating mode selection. This version has additional switched outputs that can be utilized to form a safe shut-down signal. In this case, a safe evaluation device must be connected downstream. The EKS FSA can then be used for safety-relevant applications. The machine is reset to a safe operating mode by removing the Electronic-Key.

### Key management using the Electronic-Key-Manager EKM

With the Electronic-Key-Manager EKM EUCHNER also provides a flexible PC software package for programming and managing Electronic-Keys. The freely programmable memory on the Electronic-Key can be structured exactly as required using EKM. The full version of EKM is based on a client/server architecture with central database.

Detailed information in catalog

Electronic-Key-System

● available    ○ available on request    – not available

<sup>1)</sup> Approval pending

All given data refer to the respective minimum or maximum values for the entire series.

# ManMachine at a glance

## Electronic Handwheels



Handwheel  
HKD



Handwheel  
HKB



Handwheel  
HWA



Handwheel  
HWB

|                                  |  |   |   |   |   |
|----------------------------------|--|---|---|---|---|
| Environment                      | Approval                                     |   |   |   |   |
|                                  | Housing material                             | Aluminium                                       | Aluminium                                 | Plastic/metal                                     | Plastic/metal                                     |
|                                  | Weight                                       | 0.5 kg  | 0.095 kg                                  | 0.1 kg  | 0.125 kg  |
|                                  | Mechanical life, min.                        | 20x10 <sup>6</sup>                              | 5x10 <sup>6</sup>                         | 1x10 <sup>6</sup>                                 | 1x10 <sup>6</sup>                                 |
|                                  | Operating temperature                        | 0 to +70 °C                                     | 0 to +50 °C                               | 0 to +50 °C                                       | 0 to +50 °C                                       |
|                                  | Storage temperature                          | -25 to +85 °C                                   | -20 to +50 °C                             | -20 to +50 °C                                     | -20 to +50 °C                                     |
|                                  | Atmospheric humidity, max.                   | 80 %  | 80 %                                      | 80 %  | 80 %  |
|                                  | Front degree of protection, EN 60529/IEC 529 | IP 65   | IP 65                                     | IP 65   | IP 65   |
| Front degree of protection, NEMA | 250-12                                       | 250-12  | 250-12                                    | 250-12  |   |
| Connection                       | Pulses per revolution                        | 25 or 100, 2 signals each (A/B), 90° offset<br> | 100, 2 signals each (A/B), 90° offset<br> | 25 oder 100, 2 signals each (A/B), 90° offset<br> | 25 oder 100, 2 signals each (A/B), 90° offset<br> |
|                                  | Detent mechanism                             | Magnetic  | Magnetic                                  | Mechanical  | Mechanical  |
|                                  | Detent positions                             | 100   | 100                                       | 100   | 100   |
|                                  | Shaft loading, axial, max.                   | 25 N  | 25 N                                      | 25 N  | 25 N  |
|                                  | Shaft loading, radial, max.                  | 40 N  | 40 N                                      | 40 N  | 40 N  |
|                                  | Resistance to vibration                      |   |   |   |   |
|                                  | Vibration (3 axes)                           | DIN/IEC 68-2-6                                  | DIN/IEC 68-2-6                            | -   | -   |
|                                  | Shock (3 axes)                               | DIN/IEC 68-2-27                                 | DIN/IEC 68-2-27                           | -   | -   |
|                                  | EMC protection requirement acc. to CE        | EN 61000-6-2<br>EN 61000-6-4                    | EN 61000-6-2<br>EN 61000-6-4              | -   | -   |
|                                  | Output circuit                               | RS422 or push-pull                              | RS422 or push-pull                        | RS422 or push-pull                                | RS422 or push-pull                                |
|                                  | Connection                                   | Ribbon cable V,<br>screw terminal S             | Screw terminal S                          | Screw terminal T                                  | Screw terminal T                                  |
|                                  | Detailed information in catalog              | Hand-Held Pendant Stations/Handwheels           |   |   |   |

More than safety.

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