EN

Product Overview

ManMachine

EUCHNER

More than safety.

ManMachine at a glance

	RS232 seriell RS422	USB	ETHERNET	PROFIBUS
Approval	cULus	cULus	cULus	cULus
Features/specific advantages		*FSA*	*FSA*	*FSA*
Version	compact	compact	compact	compact
General				
Housing material	plastic (PA 6 GF30 gray)	plastic (PA 6 GF30 gray)	plastic (PA 6 GF30 gray)	plastic (PA 6 GF30 gray)
Ambient temperature at U_B=DC 24 V	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	IP67 installed	IP67 installed	IP67 installed	IP67 installed
Interface, data transfer				
Interface to the PC or to the control system	serial, RS232/RS422	USB Full Speed	Ethernet 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 IEC 61158 IEC 61784-1
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-pole	Via USB	miniature plug connector, 3-pole	miniature plug connector, 3-pole
Interface connection type	Sub-D 9-pole	USB type B	RJ45	Sub-D 9-pole
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 placed inserted into the Electronic-Key adapter. 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

	E²PROM (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 TCP/IP, PROFIBUS, PROFINET interface and EKS *Light* 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.

ManMachine at a glance

PROFINET | Light

c UL us	c UL us	c UL us	c UL us	Approval
FSA	*FSA*	*FSA*	*FSA*	
compact	modular	compact	modular	
				Environment
plastic (PA 6 GF30 gray)	plastic (PVDF GF30 grey)/(PA6.6)	plastic (PA 6 GF30 gray)	plastic (PVDF GF30 gray)/(PA6.6)	Housing material
				Switching lever material
0 to +55 °C	-20 to +100°C/ 0 to +55°C	-20 to +70 °C	-20 to +100 °C/ -20 to +70 °C	Weight
33x68 mm	Hole Ø 22.5/ DIN rail 35 mm	33x68 mm	Hole Ø 22,5/ DIN rail 35 mm	Mechanical life, min.
20 to 28 V DC	20 bis 28 V DC	9 to 28 V DC	9 to 28 V DC	Ambient temperature with spring return switch
150 mA	150 mA	70 mA (without load)	70 mA (without load)	Ambient temperature with stayput switch
IP67 installed	IP65, IP67, IP69K installed	IP67 installed	IP65, IP67, IP69K installed	Mounting
				Degree of protection to IEC 529 on actuating side with/without bellows
				Connection
IEEE802.3	Ethernet IEEE802.3	4-bit parallel/plus Strobe	4-bit parallel/plus Strobe	Switching elements, max.
PROFINET IO acc. to IEC 61158 IEC 61784-1 and -2	PROFINET IO acc. to IEC 61158 IEC 61784-1 and -2	binary coded via high/low level	binary coded via high/low level	Connection
				Contact elements
				Switching principle
10/100 MBit/s	10/100 MBits/s	–	–	Rated insulation voltage U_i
miniature plug connector, 3-pole	miniature plug connector, 4-pole	miniature plug connector, 2-/4-pole	miniature plug connector, 4-pole	Rated impulse withstand voltage U_{imp}
				Utilization category AC 15
RJ45	RJ45	miniature plug connector, 5-pole	miniature plug connector, 4-pole	Utilization category DC 13
				Switching current, min. at 24 V
100 m	15 m / 100 m	50 m	15 m / 50 m	Switching voltage, min.
				Contact material
green: »ready« yellow: »Electronic-Key active« red: »error«	green: »ready« yellow: »Electronic-Key active« red: »error«	green: »ready« yellow: »Electronic-Key active« red: »error«	green: »ready« yellow: »Electronic-Key active« red: »error«	Short circuit protection (control circuit fuse)
				Number of actuating directions, max.
				All-round actuation R (spring return switch only)
				Switching positions per direction
				Pushbutton D

● available ○ available on request

All given data refer to the respective minimum o

Series EKS *Light* – Access the easy way...
EKS *Light* is characterized by simple integration into the control system environment. After the Electronic-Key is placed, the Electronic-Key's data are evaluated within the device as the first step, which permits automatic Electronic-Key recognition without the aid of the control system. Once the internal check of the data integrity is complete, an access level is issued at the data outputs.

The EKS *Light* is a read-only system with integrated evaluation electronics and interface. The access level is output via a 4-bit parallel interface. The parallel interface offers the advantage of transparent depiction of the data and therefore simple connection directly to the inputs of a control system or a switching device.

Compact and modular design
The EKS with PROFINET interface and the EKS *Light* are available in compact and modular design. In the compact version, the Electronic-Key adapter and the electronics form a unit. The Electronic-Key latches into the Electronic-Key adapter and is retained there. In the modular version, by contrast, the Electronic-Key adapter is mounted spatially separate from the electronics. The modular Electronic-Key adapter allows the Electronic- Key to be placed by hooking on the front side. Thanks to the shallow installation depth, installation is possible even in tight spaces. The design was realized with a view to applications in hygienically sensitive areas.

Joysticks

					
Joystick WK	Joystick WE	Joystick KB	Joystick KF	Joystick KE	Joystick KC
reinforced thermoplastic/ aluminium	reinforced thermoplastic/ aluminium	reinforced thermoplastic/ aluminium	reinforced thermoplastic/ aluminium	duroplast	reinforced thermoplastic/ aluminium
stainless steel	galvanized steel	stainless steel	stainless steel	stainless steel	galvanized steel
approx. 0.17 kg	approx. 0.65 kg	approx. 0.2 kg	approx. 0.2 kg	approx. 0.1 kg	approx. 0.75 kg
1×10^6	1×10^6	1×10^6	1×10^6	1×10^6	1×10^6
-5 to +65 °C	-5 to +65 °C	-5 to +65 °C	-5 to +65 °C	-25 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	-25 to +65 °C
IEC 947-5-1 D30	Front panel installation	IEC 947-5-1 D30	IEC 947-5-1 D22	IEC 947-5-1 D22	front panel installation
IP65/IP54	IP65/IP54	IP65	IP65	IP65	IP65/IP50
8	8	4	4	4	3 per direction
tab connector	screw terminal	tab connector/ screw terminal	screw terminal	tab connector/ screw terminal	tab connector/ screw terminal
changeover contact C IEC 947-5-1	changeover contact C IEC 947-5-1	changeover contact C IEC 947-5-1	changeover contact C IEC 947-5-1	changeover contact C IEC 947-5-1	changeover contact C IEC 947-5-1
snap-action contact element	snap-action contact element	snap-action contact element	snap-action contact element	snap-action contact element	snap-action contact element
250 V	250 V	250 V	250 V	250 V	250 V
2.5 kV	2.5 kV	2.5 kV	2.5 kV	2.5 kV	2.5 kV
230V/4A	230V/10A	230V/5A	230V/5A	230V/4A	230V/4A
24V/2A	24V/4A	24V/3A	24V/3A	24V/2A	24V/2A
12 mA	50 mA	10 mA	10 mA	12 mA	12 mA
10 V	24 V	12 V	12 V	10 V	10 V
silver alloy	silver alloy	silver alloy	silver alloy	silver alloy	silver alloy
T6/F10	T16/F25	T10/F20	T10/F20	T10/F20	T6/F10
8	8	8	8	8	8
○	○	○	–	○	○
1	1	1	1	1	1
○	○	–	–	–	○

– not available

Further information is available at www.euchner.com

r maximum values for the entire series.

ManMachine at a glance

Hand-Held Pendant Stations

Hand-held pendant station HBA

Hand-held pendant station HBAS

Hand-held pendant station HBL

Hand-held pendant station HBLS

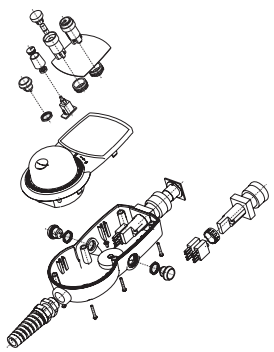
Hand-held pendant station HBM

Kit available	●	–	●	–	●
Approvals	c UL us	c UL us	c UL us	c UL us	c UL us
Housing					
Housing material	plastic	plastic	plastic	plastic	plastic
Color	gray RAL 7040	gray RAL 7040	gray RAL 7031	gray RAL 7031	anthracite
Weight	approx. 0.8 kg	approx. 0.85 kg	approx. 2.1 kg	approx. 2.2 kg	approx. 1.1 kg
Operating temperature	0 to +50 °C	0 to +50 °C	0 to +50 °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	IP65/250-12	IP65/250-12	IP65/250-12	IP65/250-12	IP65/250-12
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
Features					
Selector switches	2 x 6 positions	–	3 x 12 positions	2 x 12 positions	2 x 6 positions
Membrane keypad	3	20	–	12	–
Enabling switches	2/3-stage	2/3-stage	2/3-stage	2-stage	2-/3-stage
EMERGENCY STOP device acc. to EN 13820	●	●	●	●	●
Handwheel 100 pulses	●	–	●	●	●
Buttons	–	–	3	–	6
Key-operated switch	–	–	●	–	–
Interface	RS422A (handwheel)	serial, RS422A 3964R protocol	RS422A (handwheel)	serial, RS422A 3964R protocol	RS422A (handwheel)

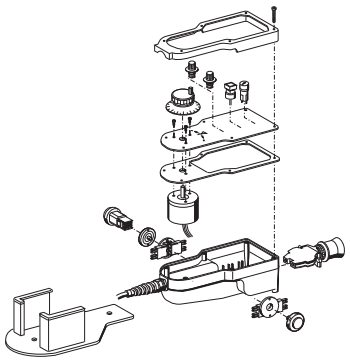
Kits for hand-held pendant stations
To enable you to use ergonomically designed housings even for small quantities, e. g. prototypes or special versions, EUCHNER provides kits for hand-held pendant stations. As a result you can assemble a hand-held pendant station in a user-friendly housing to suit your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

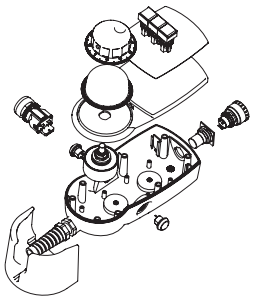
Kit HBA



Kit HBL



Kit HBM



● 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

Electronic Handwheels

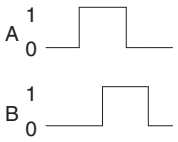
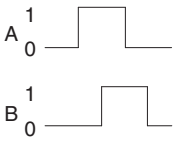
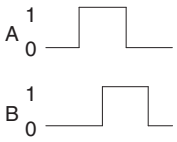
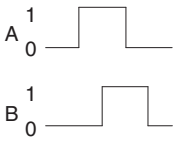
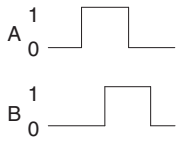
Handwheel HKB

Handwheel HKC

Handwheel HKD

Handwheel HWA

Handwheel HWB

Approval	cULus	cULus	cULus		
Environment					
Housing material	aluminium	aluminium	aluminium	plastic/metal	plastic/metal
Weight	0.095 kg	0.25 kg	0.5 kg	0.1 kg	0.125 kg
Mechanical life, min.	5×10^6	5×10^6	20×10^6	1×10^6	1×10^6
Operating temperature	0 to +50 °C	0 to +50 °C	0 to +70 °C	0 to +50 °C	0 to +50 °C
Storage temperature	-20 to +50 °C	-20 to +50 °C	-25 to +85 °C	-20 to +50 °C	-20 to +50 °C
Atmospheric humidity, max.	80 %	80 %	80 %	80 %	80 %
Front degree of protection, EN 60529/IEC 529	IP65	IP65	IP65	IP65	IP65
Front degree of protection, NEMA	250-12	250-12	250-12	250-12	250-12
Connection					
Pulses per revolution	25 or 100, 2 signals each (A/B), 90° offset 	25 or 100, 2 signals each (A/B), 90° offset 	25 or 100, 2 signals each (A/B), 90° offset 	25 or 100, 2 signals each (A/B), 90° offset 	25 or 100, 2 signals each (A/B), 90° offset 
Detent mechanism	magnetic	magnetic	magnetic	mechanical	mechanical
Detent positions	100	100	100	100	100
Shaft loading, axial, max.	25 N	25 N	25 N	25N	25N
Shaft loading, radial, max.	40 N	40 N	40 N	40N	40N
Resistance to vibration Vibration (3 axes) Shock (3 axes)	DIN/IEC 68-2-6 DIN/IEC 68-2-27	DIN/IEC 68-2-6 DIN/IEC 68-2-27	DIN/IEC 68-2-6 DIN/IEC 68-2-27	–	–
EMC protection requirement acc. to CE	EN 61000-6-2 EN 61000-6-4	EN 61000-6-2 EN 61000-6-4	EN 61000-6-2 EN 61000-6-4	–	–
Output circuit	RS422 or push-pull	RS422 or push-pull	RS422 or push-pull	RS422 or push-pull	RS422 or push-pull
Connection	screw terminal S	screw terminal S	ribbon cable V, screw terminal S	screw terminal T	screw terminal T

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