# Product Overview ManMachine





# ManMachine at a glance

PROFI

EUCHNER

		rsi422	CENTIFIED US B		<b>B</b> US
	Approval	c <b>W</b> us EAC	c <b>W</b> us EAC	c Sus EAC	c SUS EAC
	Features/specific advantages		FSA	FSA	FSA
	Version	compact	compact	compact	compact
	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 <sub>B</sub> =DC 24 V	0 to +55°C	0 to +55 °C	0 to +55°C	0 to +55°C
eneral	Mounting cut-out acc. to DIN 43700	33x68 mm	33x68 mm	33x68 mm	33x68 mm
9	Operating voltage U <sub>β</sub> (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	IP65, IP67 installed	IP65, IP67 installed	IP65, IP67 installed	IP65, IP67 installed
	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
ransfer	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
ce, data t	Connection type for power supply	miniature plug connector, 3-pole	Via USB	miniature plug connector, 3-pole	miniature plug connector, 3-pole
Interfac	Interface connection type	Sub-D 9-pole	USB type B	RJ45	Sub-D 9-pole
	Cable length, max.	RS232 5m/RS422 1000m	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								
	E <sup>2</sup> PROM (programmable)					ROM (serial number	)	
Byte no. [dec]	0 1 114 115					116		123
Byte no. [hex]	00	00 01 72 73						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. These devices have a second channel, which is available as an additional semiconductor switching contact. This switching contact is used in connection with functionally safe applications. The evaluable function in terms of safety engineering involves reliable recognition that no Electronic-Key has been placed.

#### 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.

PR		<b>i</b> ■ ■ ■	
		c <b>AN</b> us EAC	c(VL)us EAC
FSA	FSA	FSA	FSA
compact	modular	compact	modular
			-
plastic (PA 6 GF30 gray)	plastic (PVDF GF30 grey)/(PA6.6)	plastic (PA 6 GF30 gray)	plastic (PVDF GF30 gray)/(PA6.6)
0 to +55 °C	-20 to +100°C/ 0 to +55°C	-20 to +70 °C	-20 to +100°C/ -20 to +70°C
33x68 mm	Hole Ø 22.5/ DIN rail 35 mm	33x68 mm	Hole Ø 22,5/ DIN rail 35 mm
20 to 28 V DC	20 to 28 V DC	9 to 28 V DC	9 to 28 V DC
150 mA	150 mA	70 mA (without load)	70 mA (without load)
IP65, IP67 installed	IP65, IP67, IP69K installed	IP65, IP67 installed	IP65, IP67, IP69K installed
IEEE802.3	Ethernet IEEE802.3	4-bit parallel/plus Strobe	4-bit parallel/plus Strobe
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
10/100 MBit/s	10/100 MBits/s	_	_
miniature plug connector, 3-pole	miniature plug connector, 4-pole	miniature plug connector, 2-/4-pole	miniature plug connector, 4-pole
RJ45	RJ45	miniature plug connector, 5-pole	miniature plug connector, 4-pole
100 m	15 m / 100 m	50 m	15 m / 50 m
green: »ready« yellow: »Electronic-Key active« red: »error«			

### 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.

## ManMachine at a glance

Ар	proval
Но	using material
Sw	itching lever material
We	ight
Me	chanical life, min.
Am	bient temperature with spring return swite
Am	bient temperature with stayput switch
Мо	unting
De on	gree of protection to IEC 529 actuating side with/without bellows
Sw	itching elements, max.
Со	nnection
Со	ntact elements
Sw	itching principle
Rat	ed insulation voltage U <sub>i</sub>
Rat	ted impulse withstand voltage U <sub>imp</sub>
Util	ization category AC15
Util	ization category DC13
Sw	itching current, min. at 24V
Sw	itching voltage, min.
Со	ntact material
Sh	ort circuit protection (control circuit fuse)
Nu	mber of actuating directions, max.
All-	round actuation R (spring return switch or
Sw	itching positions per direction
<u> </u>	hhutten D

Environment

Connection

available O available on request

All given data refer to the respective minimum of

		Joys	ticks		
Joystick WK	Joystick WE	Joystick KB	Joystick KF	Joystick KE	Joystick KC
reinforced thermoplastic/ aluminium	reinforced thermoplastic/ aluminium	reinforced thermoplastic	reinforced thermoplastic	reinforced thermoplastic	reinforced thermoplastic/ aluminium
stainless steel	galvanized steel	stainless steel	stainless steel	stainless steel	galvanized steel
approx. 0.17kg	approx. 0.65 kg	approx. 0.2 kg	approx. 0.2 kg	approx. 0.1 kg	approx. 0.75 kg
$1 \times 10^{6}$	1 x 10 <sup>6</sup>	1 x 10 <sup>6</sup>	1 x 10 <sup>6</sup>	1 x 10 <sup>6</sup>	$1 \times 10^{6}$
-5 to +65 °C	-5 to +65 °C	-5 to +65 °C	-5 to +65 °C	-25 to +65 °C	-5 to +65 °C

-5 LO +65 C	-5 LO +65 C	-5 10 +65 C	-3 LO +65 C	-25 10 +65 0	-5 LO +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					
IP 65/IP 54	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										
snap-action contact element										
250V	250V	250V	250V	250V	250 V					
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	12mA					
10 V	24 V	12V	12V	10V	10V					
silver alloy										
T6/F10	T16/F25	T10/F20	T10/F20	T10/F20	T6/F10					
8	8	8	8	8	8					
0	0	0	_	0	0					
1	1	1	1	1	1					
0	0	_	_	_	0					

not available

r maximum values for the entire series.

Further information is available at www.euchner.com

ManMachine	Hand-Held Pendant Stations						
at a glance	Hand-held pendant station HBA	Hand-held pendant station HBL	Hand-held pendant station HBLS	Hand-held pendant station HBM			
Kit available	•	•	_	•			
Approvals							
Housing material	plastic	plastic	plastic	plastic			
Color	gray RAL 7040	gray RAL 7031	gray RAL 7031	anthracite			
Weight	approx. 0.8 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			
Storage temperature	-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			
Connection	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	2 x 6 positions	3 x 12 positions	2 x 12 positions	2 x 6 positions			
Membrane keypad	3	-	12	-			
Enabling switches	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)	RS422A (handwheel)	serial, RS422A 3964R protocol	RS422A (handwheel)			

Housing

### 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.



available
O available on request
– not available

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

ManMachine	Electronic Handwheels						
at a glance	And a second sec			A CONTRACT OF THE OWNER	And a state of the		
	Handwheel HKB	Handwheel HKC	Handwheel HKD	Handwheel HWA	Handwheel HWB		
Approval	c <b>FN</b> us EAC	c <b>SL</b> <sup>°</sup> us E <b>HC</b>	c <b>SN</b> <sup>°</sup> us EAC	E <b>AC</b>	E <b>AC</b>		
Housing material	aluminium	aluminium	aluminium	plastic/metal	plastic/metal		
Weight	0.095 kg	0.25 kg	0.5 kg	0.1 kg	0.125kg		
Mechanical life, min.	5 x 10 <sup>6</sup>	5 x 10 <sup>6</sup>	20x10 <sup>6</sup>	1 x 10 <sup>6</sup>	1 x 10 <sup>6</sup>		
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		
Pulses per revolution	25 or 100, 2 signals each (A/B), 90° offset $A_0^1$ $B_0^1$	25 or 100, 2 signals each (A/B), 90° offset $A \frac{1}{0}$	25 or 100, 2 signals each (A/B), 90° offset $A \frac{1}{0}$	25 or 100, 2 signals each (A/B), 90° offset $A \frac{1}{0}$	25 or 100, 2 signals each (A/B), 90° offset $A \begin{pmatrix} 1 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\$		
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		

**EUCHNER GmbH + Co. KG** Kohlhammerstraße 16

Environment

Connection

70771 Leinfelden-Echterdingen Germany Tel. +49 711 7597-0 Fax +49 711 753316 info@euchner.de www.euchner.com



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