EKS *Light*

More than safety.

EUCHNER

Electronic access control

Simple connection

EKS

Very flexible use

Simple communication

▌ The Electronic-Key-System EKS

is already part of many applications involving electronic access management on PCs and control systems. EKS basically comprises two components: the Electronic-Key with RFID transponder and the Electronic-Key adapter. The Electronic-Key locks into the key adapter and is held there during operation of the installation. Due to the contactless transfer of data, it was possible to design the Electronic-Key adapter from the access side with the high degree of protection IP 67. Thanks to its robust design, the EKS is appreciated as one of the few truly industry-compatible systems.

The EKS is widespread amongst automotive manufacturers and suppliers. In addition it is used in applications in the process-oriented industry, e.g. in the production of food, pharmaceutical or chemical products. Protecting access to critical processes is a central topic in the typical applications.

Access the easy way...

The existing EKS family is being expanded by a new series in the form of EKS *Light*, which can be identified by the black front cover.

A simple connection concept, as well as rapid and therefore economical integration into the control environment, were just as much a focus during development as the compatibility with the existing EKS through the use of the same Electronic-Key.

- Electronic access control
- Simple connection
- Simple communication, 4-bit output
- Very flexible use
- IP 67

With EKS *Light*, EUCHNER is now opening up the use of EKS technology for small and decentralized applications as well. As previously with EKS, the *Light* version also permits controlled access to individual machines, entire installations or other facilities. The only difference is that with EKS *Light*, the device directly identifies a user by his Electronic-Key. A control system is not necessary for this check. If an authorized user was detected, an access level is output with which the user receives a certain authorization. The derivation of access rights onto machine functions is carried out through the programming of the control by the system integrator.

And this is how it works

The EKS *Light* Electronic-Key adapter is a read-only system with integrated evaluation electronics and interface.

After the key is inserted, the key's data are evaluated within the device as the first step, which permits automatic user recognition without the aid of the control system.

Once the internal check of the data integrity is complete, an access level is issued. 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.

An EKS operating state, an access level, an access code, a checksum (CRC) and a serial number are stored on the Electronic-Key. When a key is inserted, the data range relevant for the respective operating state is automatically read from the key into the device, temporarily stored there and evaluated. If an authorized user is recognized via a valid Electronic-Key, the outputs on the Electronic-Key adapter are set to High in accordance with the stored access level values. All outputs are reset to Low when the Electronic-Key is withdrawn.
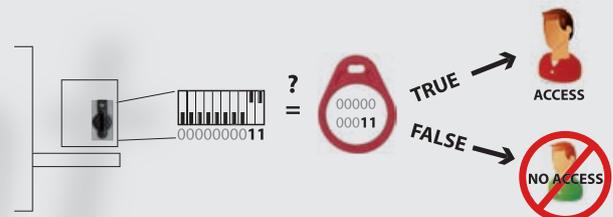
The Electronic-Key adapter and Electronic-Key are separately parameterized, with values which have to match. Parameter assignment to the Electronic-Key adapter is performed very simply through DIP switches.

4-Bit parallel interface for output of the access level
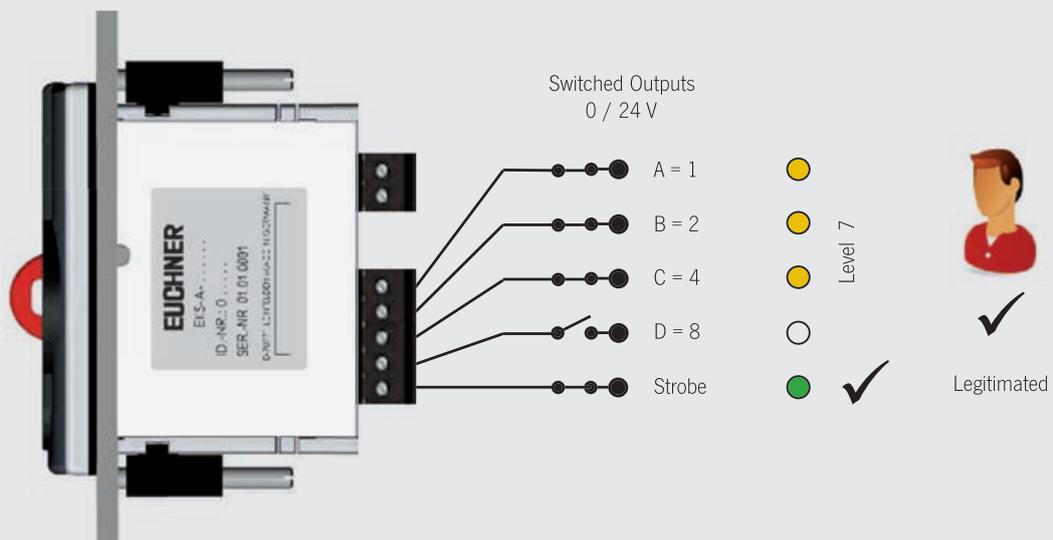
Flexibility through various operating states

The application options for EKS *Light* are diverse, and the flexible concept with its different operating states provides flexibility for planning.

The operating state determines the function of the system, which comprises the Electronic-Key adapter and Electronic-Key. The operating state defines the scheme according to which automatic Electronic-Key recognition functions and how an access level is issued.

What operating states are available?

Depending on the applications, various operating states can be selected. Two different operating states are available in the first step.

- Operating state 0

  Access is granted when the access codes on the Electronic-Key and DIP switch are an exact match. 1024 codes are possible in this operating state.

- Operating state 1

  Access is granted when there is a match on any bit position of the access codes on Electronic-Key and DIP switch.

How are parameters assigned to Electronic-Keys?

Parameter assignment for the Electronic-Keys is performed exclusively via a programming station on the PC. At least the following items are required for this purpose:

- A commercially available Windows PC
- An EKS Electronic-Key adapter with USB interface
- The Electronic-Key Manager EKM *Light* software

Programming takes place via the Electronic-Key-Manager EKM software with an EKS *Light* input mask suitable for the operating state:
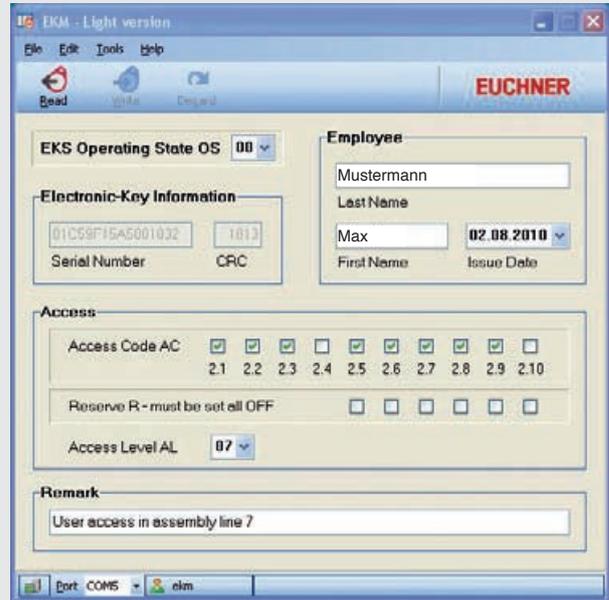
The EKM *Light* Version is sufficient at first. It can be upgraded to an EKM single-user or full version later. With this upgrade there is always a good overview about the database and all the already entered Electronic Keys.

The cyclic redundancy check routine prevents data manipulation outside of the defined software environment.

Example for access to operating states 0 and 1
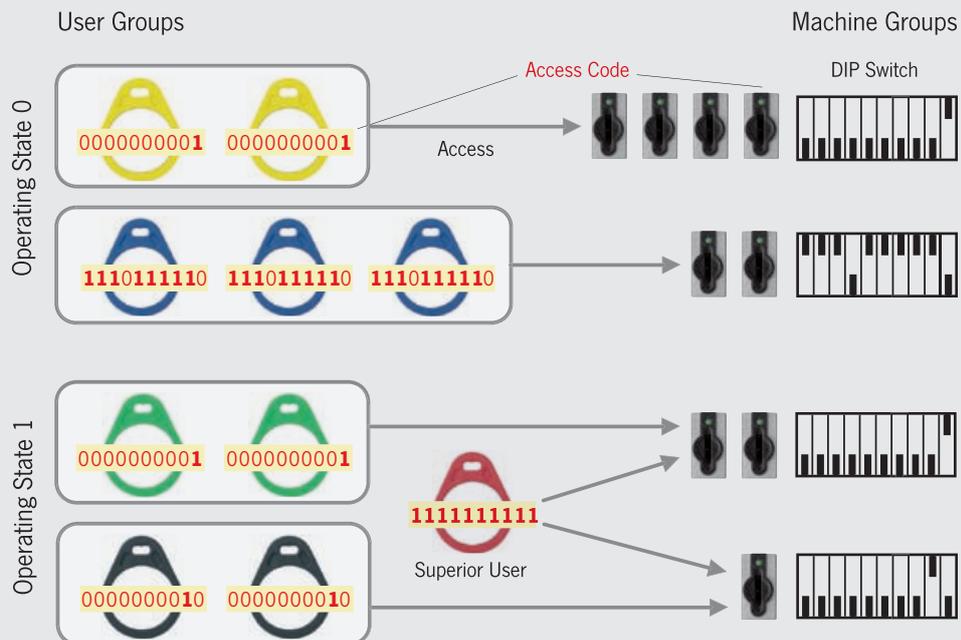
▌Technical data

General parameters	Value			Unit
	min.	typ.	max.	
Housing	Plastic (PA 6 GF30 gray)			
Degree of protection according to EN 60529	IP 67 in mounted condition			
Ambient temperature at U_B = 24 V DC	-20		+ 70	°C
Mounting cut-out acc. to DIN 43700	33 x 68			mm
Connection type for power supply and outputs	2- and 5-pole plug-in screw terminal			
Operating voltage U_B (regulated, residual ripple < 5 %)	9	24	28	DC V
Current consumption I_B (without load current)			70	mA
Cable length			50	m
LED-indicator	green »Ready« (in operation) yellow »Electronic-Key active« red »Error«			
Interface				
Interface to inputs of control system or switch unit	4-bit parallel, binary coded via High/Low level			
Load current per output I_A	10		50	mA
Output voltage U_A (High level) for A,B,C,D, Strobe	U_B - 1		U_B	V

Dimension drawing of Electronic-Key adapter
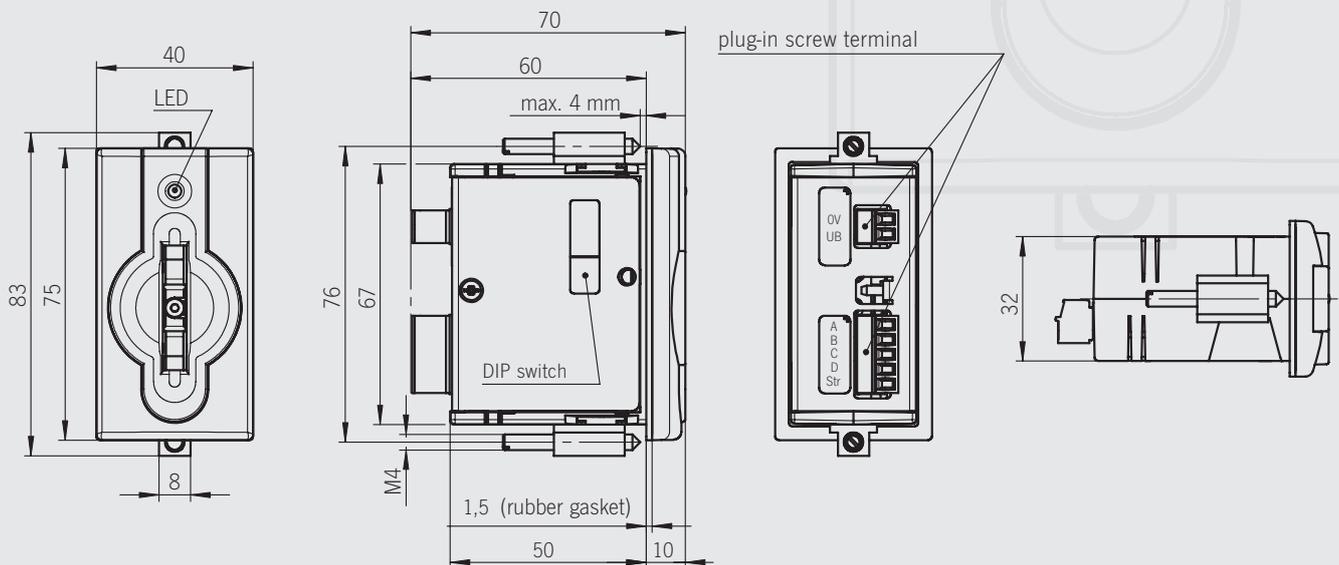
Ordering table

Designation	Color	Item	Order no.
Electronic-Key adapter EKS *Light* (supports only operating state 0)		EKS-A-IPB-G01-ST05/02	111 230
Electronic-Key adapter (supports all operating states)		EKS-A-IPL-G01-ST05/02.	109 820
Electronic-Key read/write*	Red	EKS-A-K1RDWT32-EU	077 859
	Black	EKS-A-K1BKWT32-EU	084 735
	Blue	EKS-A-K1BUWT32-EU	091 045
	Green	EKS-A-K1GNWT32-EU	094 839
	Yellow	EKS-A-K1YEWT32-EU	094 840
For setup of a programming station			
Electronic-Key adapter with USB interface*		EKS-A-IUX-G01-ST01	092 750
Electronic-Key-Manager EKM* software, *Light* Version, on CD			111 410
Documentation			
Electronic-Key adapter manual; PDF file available in the *Download* area at *www.euchner.de*			110 845
* Detailed information about the standard EKS software and hardware components in the EKS catalog			

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