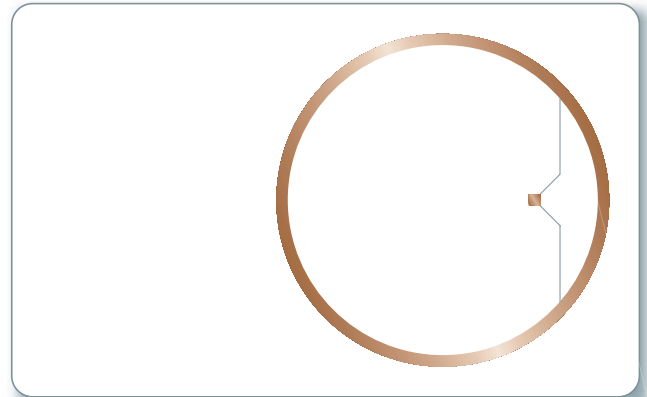


EM4102 (Miro/Synel/prox/fixcode) Cards/Keyfobs

Utilization possibilities

The Mifare identity card always functions dependably even under difficult environmental conditions for example dampness, dirt or mechanical influences (also refer to the care instruction page). Simple functions such as for example BDE, Parking access or access control can be implemented with this device.



Function

The transponder is designed for 64 bits. They are broken down into 5 groups: Group Header (9 bits), Row parity (10 bits), Column parity (10 bits) und Serial numbers (40 bits).

The data cannot be changed. The contact free data transfer from the transponder to the reading device is implemented over a electro-magnetic field, which is built up by the reading device, as soon a the EM4102-Chip is brought into its proximity. The transponder data storage sends the reading device the information by means of a short transmission interruption, to transmit the stored information. If this data has been previously initialized on the reading device (serial number of the released media must have been stored on the reading device), the transponder will receive a positive response. In this way the access for example will be given.

Print/refinement

Cards:

The identity card will be designed and produced according to the instructions and technical possibilities. The identity card can be printed both on the front and reverse in one or several colours. Additional safety characteristics such as for example geometrical printing or hologram are also possible. Other options are for example coding, numbering, or even personalization or embossing.

The optimal printing technology will be selected according to the print run and layout/colours, such as for example offset, screen, re-transfer or thermal sublimations/thermal transfer printing.

Keyfobs:





Laser engraving can be utilized for the production of for example for an optical numbering. A single or multiple colour printing with a logo or script is also possible. A photo printing underneath a transparent cover is also possible upon request.

Hybrid media (Multiple technologies)

The EM4102-Chip can naturally also be combined with other technologies within a medium. It must however be noted that same frequencies can lead to disruptions or even a complete loss of functionality capability for the individual technologies. Therefore multiple technologies within one medium working on the same frequencies are not recommended. Supplementary versions can for example be Legic®-, Mifare- or i-Code- or even the utilization of processor chips.



Technical information
EM4102 (Miro)

Characteristics	Cards	Keyfobs		
		A	B	C
Material	PVC	ABS plastic		
Colour		*** 	*** 	*** 
		Each with a grey cover**		
Connections	laminated	Ultra sonically welded	pressed	pressed
Surface	High gloss/ lusterless	lusterless	lusterless	lusterless
Formate	86 x 54 x ca. 0.76 mm	round	oval	round
	Special formats upon enquiry	Other construction formats upon enquiry		
Frequency	125 kHz			
Chip type	passive (without battery)			
Writing-/reading space	approximately 6 cm (Depending upon antenna and reading device)			
Storage medium	E ² PROM			
Storage size	64 Bit total, from that 40 Bits = Serial numbers			
Modulation	AM (Manchester)			
Transfer rate	approximately 20 ms			
Data storage lifetime	approximately 10 years			
Delete/write cycles	---			
Storage functions	Bit flow			
Access	Read (Read only)			
Safety	CRC-Check			
Anti-collision protection	No			
Transaction time	approximately 150ms			
Temperature area	approximately -40°C up to approximately +85°C			

*** other housing colours/other cover colours tone-in-tone upon enquiry

Other construction formats available in the delivery program.
The right to make technical changes retained