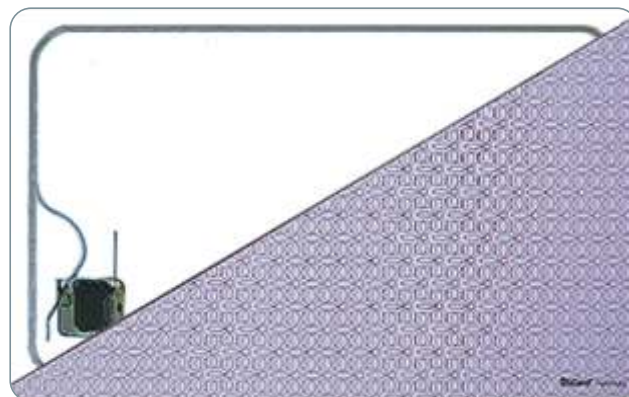


Mifare DESfire Cards/Key rings

Utilization possibilities

The Mifare DESfire identity card always functions dependably even under difficult environmental conditions for example dampness, dirt or mechanical influences (also refer to the care instruction page). Multiple functions such as for example BDE, Parking access or access control or even ticketing (public transportation, events etc.) and in cashless payments in the canteen or at the petrol station can be implemented with the Mifare DESfire.



Function

The communication between the read/write unit and the i-Code-Chip in the identity card body is implemented contact free.

Information is transferred from a data storage (E²PROM), whilst the identity card/key ring can remain for example in its identity card holder or on the key ring.

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 Mifare DESfire 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 EM4102 (Miro), Hitag1, Hitag2 or even processorchips.

Technical information Mifare DESfire

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	13.56 MHz			
Chip type	passive (without battery)			
Writing-/reading space	Maximum 10 cm (Depending upon antenna and reading device)			
Storage medium	E ² PROM (Read/write)			
Storage size				
Modulation				
Transfer rate	106 kbit/s			
Data storage lifetime	10 years			
Delete/write cycles	Approximately 200,000 to 500,000			
Storage functions	32 bit serial number/user data/safety function (Krypto)			
Access	Read/Write OR write protection OR Read/write protection			
Safety				
Anti-collision protection	yes			
Transaction time	100 ms			
Temperature area	From -25°C up to + 70 °C (chip, antenna)			

* other housing colours upon enquiry

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

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