



iCLASS[®] Seos[™] Card



iCLASS SE[®] Platform

HIGH FREQUENCY CONTACTLESS SMART CARD FOR SECURING IDENTITIES

- **Versatile strong authentication** – The solution of choice for companies looking for state-of-the-art access control and multi-application smart cards.
- **Increased interoperability** – Open, standards-based solution that supports future technologies and can store identities for multiple applications.
- **Technology-independent security** – Part of the iCLASS SE[®] platform, featuring the multi-layered and portable Secure Identity Object[®] (SIO[®]) data model.
- **Streamlined migration** – Available as a multi-technology card that combines 125 KHz proximity technology and a high frequency Seos[®] contactless microprocessor.

HID Global's iCLASS Seos[®] smart cards enable the ability to carry dual identities in a single credential to offer a true "one card" solution for physical and logical access control applications. The credentials can be programmed to work immediately for opening doors and accessing IT resources, since they are provisioned to support other applications, including One-Time Password authentication (OTP) for network login. Whether purchased by a facilities manager or the IT department, the credentials can be used seamlessly across the organization for maximum return on investment and organizational efficiency.

As part of the iCLASS SE[®] platform, iCLASS Seos smart cards are based on a secure, open technology to manage and authenticate identities, and they deliver superior data integrity and privacy protection by leveraging the latest cryptographic algorithms. iCLASS Seos cards also utilize a secure messaging protocol to protect data transmission with off-card applications, providing strong

authentication mechanisms to protect the communications between card and reader.

Delivering maximum interoperability, iCLASS Seos cards include a standards-based application that offers a universal card command interface. The solution also supports an ISO/IEC 7816-4 command set and data model that defines the supported interfaces between an iCLASS Seos card and the reader.

iCLASS Seos cards provide trusted management of secure identities within HID Global's iCLASS SE platform that is based on its Secure Identity Object[®] (SIO[®]) data model. Additionally, the smart cards support multiple SIOs carried on a single credential/device for physical access control PACS (along with any other application data). This enables applications to provide individual protected data sets for the identities in each application.



TECHNOLOGY FEATURES

- Microprocessor based card available in 8K-Bytes or 16K-Bytes memory for demanding applications.
- AES-128 bits cryptography.
- Mutual authentication protocol with generation of diversified session key to protect each card session (using secure messaging).
- Secure data storage with flexible data model (file-system-based) using a firewalled architecture for data separation between applications.
- Supports ISO/IEC standards: 7810, 7816 and contactless cards (14443 A).
- Contactless unique identifier: 4 bytes (random value).
- Generic command set based on ISO/IEC 7816-4.
- Hardware chip that integrates co-processor with high performance for cryptographic calculations with symmetric keys.
- One Time Password generation using standards-based solution.
- Card customization available: magnetic stripe, custom text or graphics (requires minimum quantity).

SECURITY FEATURES

- Heightened privacy protection with no traceable identifiers exchanged during card sessions, preventing data associated to a card from being divulged or cloned.
- Programmable with one or several Secure Identity Objects® (SIO®) for each application.
- High resistance to common attacks (man in the middle, replay attacks and others).
- Available with anti-counterfeiting features such as holograms, holographic foil, OVI (Optical Variable Ink).

INTEROPERABILITY

- Fully supported by iCLASS SE® and multiCLASS SE® readers that can process SIO-enabled data formats. Interoperable with iCLASS SE readers (with firmware Revision E or later).



SPECIFICATIONS

iCLASS Seos® 8K and iCLASS Seos® 16K	
Base Part Number	5005 for standard 16K card / 5006 for 8K card 5105 for 16K + Prox / 5106 for 8K + Prox 5015 for embeddable 16K / 5016 for embeddable 8K
Operating frequency	13.56 MHz with ISO/IEC 14443 Type A
Typical Maximum Read Range	3-4" (depending the reader used)
Dimensions	2.127" x 3.375" x 0.033" max (5.40 x 8.57 x 0.084 cm)
Construction	Composite with 60% PET/40% PVC
Operating Temperature	-40° to 158° F (-40° to 70° C)
Weight	0.20 oz (5.5g)
Memory Size/ Application Areas	iCLASS Seos 16K-Bytes flexible memory allocation: Or iCLASS Seos 8K-Bytes
Privacy Mode	Privacy-preserving mode (with encryption of device identifiers)
Secure Messaging	EN 14890-1 and 7816 aligned using AES algorithm
Mutual Authentication Mechanism	Based on ISO/IEC 24727-3 2008 with NIST SP800-56A (for session key derivation)
Write Endurance	Min 500,000 cycles
Data Retention	Min 20 years
HID Proximity	Available
Contact Smart Chip Embeddable	Yes
Printable	Yes (white/white card) Usable with direct imaging and thermal transfer printers (from HID but also from other suppliers) Exclusion areas for printing may apply in some areas of the card plastic
Slot Punch	Not available
Secure Identity Services	Customized cards are available through HID Identity on Demand
Visual Security Options	Optional including hologram, anti-counterfeiting, holographic foil
Additional Security Options	Corporate 1000, Secure Identity Object (SIO) programming with SE-Elite
Warranty	Lifetime, see complete warranty policy for details

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2014-02-18-i-class-seos-cards-ds-en PLT-01141

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