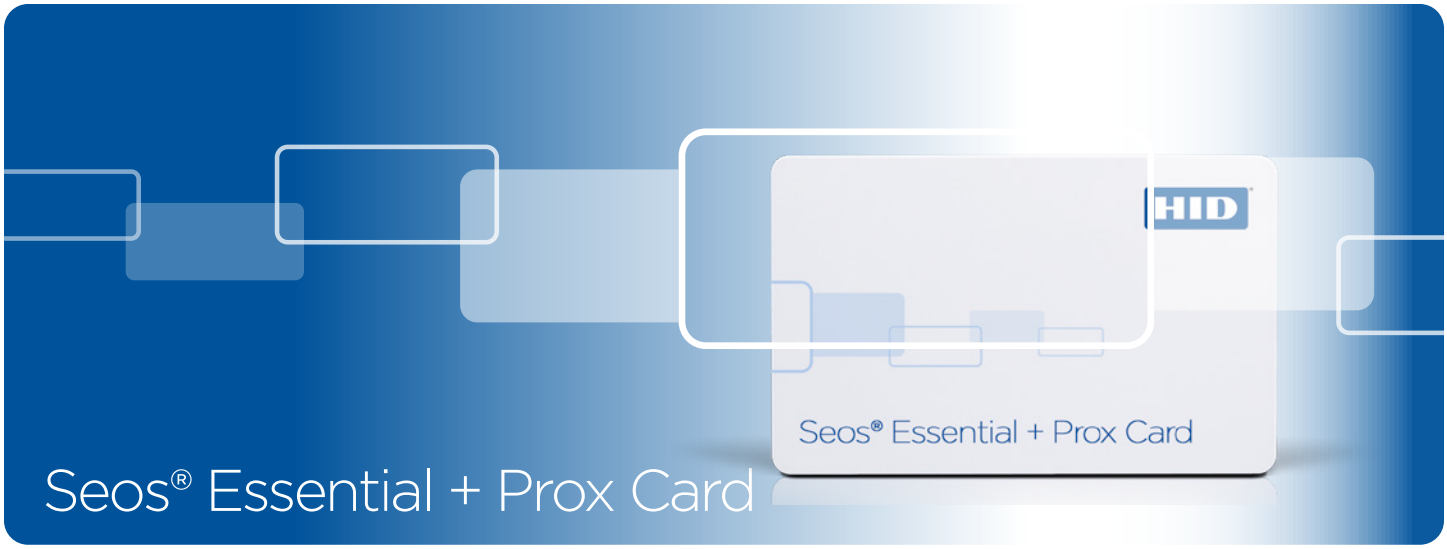

Seos® Essential + Prox Card

THE ESSENTIAL CREDENTIAL FOR SIMPLE, LOW-FREQUENCY CARD MIGRATIONS

- **Highly secure –** Like all Seos credentials, Seos Essential is Secure Identity Object® (SIO)-enabled, allowing for multi-layered security beyond the card technology and protecting identity data from unauthorized access
- **Simplified, cost-effective migrations –** Support for read/write identification using 125 kHz contactless technology to enable migration from legacy 125 kHz credential technologies
- **Convenient –** Fully supported by HID Signo, iCLASS SE®, multiCLASS® SE, HID Prox and Indala reader platforms
- **Heightened privacy protection –** Seos Essential offers best-in-class data and privacy protection by incorporating mutual authentication and secure messaging mechanisms into stringent best practices for data protection

HID Global's Seos Essential + Prox card is designed to be an economical solution that enables security system owners to migrate from legacy, low-frequency 125kHz based systems to a modern and secure credential technology.

Seos Essential cards provide trusted management of secure identities within the SIO-enabled HID Signo and iCLASS SE reader platforms. This powerful credential technology is built to deliver superior data integrity and privacy protection by leveraging the latest cryptographic algorithms and security techniques. Additionally, a secure messaging protocol is also used to protect data transmission between card and reader.

Seos offers peace of mind that modern day privacy requirements are met. The default configuration of each Seos Essential credential leverages a random unique identifier, meaning information isn't associated with the user without a secure authentication.

Seos Programming Options

Available programming options with Secure Identity Object (SIO) include standard keys or HID Elite to take security to the next level. Users benefit from superior protection of personalized keys in HID's world class infrastructure with traceability and accountability at the core.

The Seos Essential portion of the card features a single physical access control application with no support for additional applications.

125kHz Programming Options

Available programmed with HID Prox or Indala 125kHz formats.

Ordering Information

For full details, refer to the Readers and Credentials How to Order Guide

TECHNOLOGY FEATURES

- Programmed with a single SIO-based physical access control application for simplicity
- AES-128 cryptographic algorithms for data protection during communication with the reader to defend against attacks attempting to intercept data
- Prioritization of user privacy, always defaults to using a random contactless unique identifier (4 bytes random value)
- Ultra-fast read speeds with a high-performance hardware chip integrating co-processor for cryptographic calculations with symmetric keys
- Supports ISO/IEC standards: 7810, 7816 and contactless cards (14443 A)
- Supports 125kHz HID Prox and Indala formats

SECURITY FEATURES

- Data within the SIO is secured with a wrapper that provides key diversification, authentication signatures, and AES-128 based encryption
- Mutual authentication protocol with generation of diversified session key to protect each card session with secure messaging
- High resistance to common attacks (man in the middle, replay attacks and others)

INTEROPERABILITY

- Seos Essential is fully supported by HID Signo Readers
- Seos Essential is fully supported by iCLASS SE and multiCLASS SE Readers that can process SIO-enabled data formats. Only supported by iCLASS SE Readers with firmware Revision E or later.
- 125kHz capabilities are fully supported by HID Prox and Indala Readers

SPECIFICATIONS

	Seos Essential + Prox Card	
Base Part Number	551	
Operating Frequency	13.56 MHz / 125kHz	
Seos Communication Protocol Compliance	ISO14443A-4	
Seos Communication Speed	Up to 848kbps	
Seos Memory Type	EEPROM	
Number of Seos Applications	1 x Secure Identity Object (SIO) application	
Seos SIO Data Object Support	Yes (enabled by default)	
Seos HID Format Support	Yes (wrapped in Secure Identity Object)	
125kHz HID Format Support	HID Prox and Indala	
Seos Data Retention	10 years	
Seos Extended Privacy Support	Yes	
Seos Security Features	Mutual authentication (compliant to ISO/IEC 24727-3), key diversification (based on NIST SP800-108 using AES 128), secure messaging (compliant to EN14890-1:2009). Session key derivation based on NIST SP 800-56A.	
Seos Unique Identifier (UID)	Random UID	
Compatibility & Performance[1]		
	Seos	**125kHz**
HID Signo Readers	Up to 6 cm (2.3")	Up to 4cm (1.6")
iCLASS SE Readers	Up to 5 cm (2")	N/A
multiCLASS SE Readers	Up to 4 cm (1.6")	Up to 4cm (1.6")
HID Prox / Indala Readers	N/A	Up to 14cm (5.5") – model dependant
CP1000D Desktop Encoder	Read only (Secure Identity Object)	Read/Write (HID Prox only)
iCLASS SE RB25F Fingerprint Reader[2]	Read only (Secure Identity Object) in template on device mode	N/A
OMNIKEY Readers[3] Embedded SE Devices[3, 4]	Read only (Secure Identity Object)	Read only N/A
Printing	HID recommends the use of a high-definition printer (HDP) for this card	
Mechanical, Environmental and Compliance		
Card Construction	Composite construction (40% polyester / 60% PVC)	
Weight	0.2 oz (5.5g)	
Operating Temperature	-40° to 158° F (-40° to 70° C)	
Storage Temperature	-40° to 158° F (-40° to 70° C) for 1000h	
Thermal Shock	-31° F to 176° F (-35 °C to + 80 °C) 50 cycles (soaking time 5 min, transition time 30 s)	
Chemical Resistance	The card can withstand exposure to salt water (5%), salt mist, acetic acid water (5%), carbonated sodium water (5%), sugared water (10%) and ethylene glycol (50%) for at least 24 hours	
Standards Compliance	ISO14443A-4, ISO/IEC 24727-3:2008, EN 14890-1:2009	
Environmental Compliance	RoHS, China RoHS, REACH, halogen Free	
Warranty	Lifetime warranty	

[1] HID Global testing occurs in open air. Some environmental conditions, including metallic mounting surface, can significantly degrade read range and performance; plastic or ferrite spacers are recommended to improve performance on metallic mounting surfaces. Spacers for iCLASS SE readers are available at hidglobal.com.
[2] The Seos Essential card does not support template on card
[3] See Logical Access HTOG for Seos and 125kHz compatible products
[4] Read performance is dependent on antenna design and environment

hidglobal.com

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