

# iCLASS Contactless Smart Credentials

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- ▶ 13.56 MHz read and write contactless smart card technology
- ▶ Fast, reliable communications with high data integrity
- ▶ Mutual authentication, encrypted data transfer, and 64-bit diversified keys for read and write capabilities
- ▶ 2K bit or 16K bit configurations
- ▶ Thin cards support a magnetic stripe, barcode, artwork, or photograph

iCLASS® Credentials use contactless smart card technology to provide enhanced security and a 13.56 MHz read and write platform for increased speed. iCLASS Cards, Tokens, and Adhesive Tags have large amounts of memory to support applications such as access control, biotechnology, network log-on security, cashless vending, time and attendance, and automotive vehicle identification. The credentials are available in 2K bit (256 Bytes) or 16K bit (2K Bytes) configurations.

### iCLASS Cards

iCLASS Cards provide contactless smart card technology in a thin, plastic card. It is possible to print custom artwork or photographs directly on the cards.

### iCLASS Tokens

iCLASS Tokens provide contactless smart card technology in a durable, molded plastic token. The token is the size of a car key and fits on a key chain, key ring, or lanyard.

### iCLASS Adhesive Tags

iCLASS AdhesiveTags provide contactless smart card technology in a coin-sized, disk-shaped transponder. The tags attach to non-metallic objects, creating transition devices to use during the re-badging process. Upgrade from Wiegand, magnetic stripe or barium ferrite technologies and convert existing badges or cards into contactless proximity credentials.

## Functions

### 2K bit (256 Bytes) Credential

- Supports two application areas: one standard access control application area and one application area for user customization
- Meets ISO 15693 standard for contactless communications
- Provides a cost effective way to improve the security of an access control installation

### 16K bit (2K Bytes) Credential

- Supports sixteen application areas
- Provides multiple, securely-separated files to activate applications and support future growth
- Provides read and write memory to store biometric templates
- Meets ISO 15693 and 14443B for contactless communications

### Industry Standard Security

Secure algorithms and industry standard encryption reduce the risk of compromised data or duplicated credentials. The credentials also support sophisticated encryption methods that exceed industry standards. The 64-bit diversified read and write keys protect separated application areas, providing support for complex applications and future expansion.

**Reliable Read Range**

The credentials offer a consistent read range that is not affected by body shielding or variable environmental conditions.

**Convenient to Use**

The smart cards are thin enough to fit with credit cards in a wallet or purse. The cards can also be worn on a strap as an identification badge. The tokens can be carried in a pocket, a handbag, or clipped on a lanyard.

The credentials are strong, flexible, and resistant to cracking and breaking. The passive, no-battery design allows for an estimated minimum 100,000 reads.

**Options**

The cards support external numbering (inkjet or laser engraving), vertical slot punch, and custom text or graphics.

**Installation/Configuration Notes****Compatibility Information**

Systems	<ul style="list-style-type: none"><li>• Building Integration System (BIS)</li><li>• ReadykeyPRO®</li><li>• Readykey®</li></ul>
Control Panels	<ul style="list-style-type: none"><li>• D9412G Control Panel</li><li>• D7412G Control Panel</li></ul>

	Readers								
	ARD-R10	ARD-R40	ARD-RK40	ARD-VSMART	D8223	D8223-P	D8224	D8224-SP	D8225
<b>26-bit Credentials</b>									
ACD-IC2K26-50 iCLASS 2K Wiegand Card	X	X	X						
ACD-IC16K26-50 iCLASS 16K Wiegand Card	X	X	X	X					
ACD-IC16KP26-50 iCLASS 16K Dual Wiegand Card	X	X	X	X	X	X	X	X	X
ACT-IC2K26-10 iCLASS 2K Wiegand Token	X	X	X						
ACT-IC16K26-10 iCLASS 16K Wiegand Token	X	X	X	X					
ACA-IC2K26-10 iCLASS 2K Wiegand Tag	X	X	X						
ACA-IC16K26-10 iCLASS 16K Wiegand Tag	X	X	X	X					
<b>37-bit Credentials</b>									
ACD-IC2K37-50 iCLASS 2K Wiegand Card	X	X	X						
ACD-IC16K37-50 iCLASS 16K Wiegand Card	X	X	X	X					
ACD-IC16KP37-50 iCLASS 16K Dual Wiegand Card	X	X	X	X	X	X	X	X	X
ACT-IC2K37-10 iCLASS 2K Wiegand Token	X	X	X						
ACT-IC16K37-10 iCLASS 16K Wiegand Token	X	X	X	X					
ACA-IC2K37-10 iCLASS 2K Wiegand Tag	X	X	X						
ACA-IC16K37-10 iCLASS 16K Wiegand Tag	X	X	X	X					
26-bit function is supported in all compatible systems. 37-bit function is supported in ReadykeyPRO systems only. Cards can only be punched in the portrait position.									

## Technical Specifications

### Specifications for All Credentials

#### Environmental Considerations

Operating Temperature	-40°F to 158°F (-40°C to 70°C)
Operating Humidity	5% to 95% non-condensing

#### Operation

Operating Frequency:	13.56 MHz
Memory Type:	EEPROM, read and write
Multi-application Memory	2K bit (256 Bytes) card, two application areas 16K bit (2K Bytes) card, two or 16 application areas
Write Endurance:	Minimum of 100,000 cycles
Data Retention:	10 years

## Smart Card Specifications

### Properties

Dimensions :	2.1 in. x 3.375 in. x 0.03 in. (5.40 cm x 8.6 cm x 0.08 cm)
Weight:	0.2 oz (5.7 g)
Construction:	Thin, flexible polyvinyl chloride (PVC) laminate.

### Operation

Typical Maximum Read Range:	ARD-R10: 2.0 in. to 3.0 in. (5.0 cm to 7.6 cm) ARD-R40: 2.5 in. to 4.5 in. (6.3 cm to 11.4 cm) ARD-RK40: 3.0 in. to 4.0 in. (7.6 cm to 10.1 cm) Read range might vary depending on installation conditions.
RF Interface:	As suggested by ISO/IEC: 15693 read/write 14443B mode - 106 kbps

Transaction Time:	<100 ms typical
Baud Rate:	14443 B2 mode - 212 Kbps 15693 mode - 26 Kbps

### Token Specifications

#### Properties

Dimensions :	1.4 in. x 1.25 in. x 1.5 in. (3.4 cm x 3.2 cm x 3.8 cm)
Weight:	0.2 oz (4.9 g)
Construction:	Ultrasonically welded polycarbonate shell.

#### Operation

Typical Maximum Read Range:	ARD-R10 1.0 in. (2.5 cm) ARD-R40 1.0 in. (2.5 cm) ARD-RK40 1.0 in. to 1.5 in. (2.5 cm to 3.8 cm) Read range varies depending on installation conditions.
RF Interface:	As suggested by ISO/IEC: 14443B read and write (16K only) 15693 read and write
Transaction Time:	<100 ms typical
Baud Rate:	14443B mode - 106 Kbps 15693 read/write - 26 Kbps

### Tag Specifications

#### Properties

Diameter:	1.3 in. (3.3 cm)
Thickness:	0.07 in. (0.2 cm)
Weight:	0.04 oz (1.2 g)
Construction:	Lexan

#### Operation

Typical Maximum Read Range:	ARD-R10 1.0 in. (2.5 cm) ARD-R40 1.0 in. (2.5 cm) ARD-RK40 1.0 in. to 1.5 in. (2.5 cm to 3.8 cm) Read range might vary depending on installation conditions.
RF Interface:	As suggested by ISO/IEC: 14443B read and write (16K only) 15693 read and write
Transaction Time:	<100 ms typical
Baud Rate:	14443B mode: 106 Kbps 15693 read and write: 26 Kbps

### Trademarks

iCLASS® is a registered trademark of HID Corporation.  
Readykey® and ReadykeyPRO® are registered trademarks of Bosch Security Systems in the United States.

### Ordering Information

#### iCLASS 2K Wiegand Card (26-bit)

A 13.56 MHz contactless smart card programmed to Wiegand 26-bit format. It has two 1 Kb application areas (256 Byte capacity). Each package contains 50 cards.

Order number **ACD-IC2K26-50**

#### iCLASS 2K Wiegand Card (37-bit)

A 13.56 MHz contactless smart card programmed to Wiegand 37-bit format. It has two 1 Kb application areas (256 Byte capacity). Each package contains 50 cards.

Order number **ACD-IC2K37-50**

#### iCLASS 16K Wiegand Card (26-bit)

A 13.56 MHz contactless smart card programmed to Wiegand 26-bit format. It has sixteen 1 Kb application areas (2K Byte capacity). Each package contains 50 cards.

Order number **ACD-IC16K26-50**

#### iCLASS 16K Wiegand Card (37-bit)

A 13.56 MHz contactless smart card programmed to Wiegand 37-bit format. It has sixteen 1 Kb application areas (2K Byte capacity). Each package contains 50 cards.

Order number **ACD-IC16K37-50**

#### iCLASS 16K Dual Wiegand Card (26-bit)

A contactless smart card programmed to Wiegand 26-bit format. It operates at 125 kHz or 13.56 MHz. It has sixteen 1 Kb application areas (2K Byte capacity). Each package contains 50 cards.

Order number **ACD-IC16KP26-50**

#### iCLASS 16K Dual Wiegand Card (37-bit)

A contactless smart card programmed to Wiegand 37-bit format. It operates at 125 kHz or 13.56 MHz. It has sixteen 1 Kb application areas (2K Byte capacity). Each package contains 50 cards.

Order number **ACD-IC16KP37-50**

#### iCLASS 2K Wiegand Token (26-bit)

A contactless token with smart card technology programmed to Wiegand 26-bit format. It operates at 13.56 MHz. It is 2K (256 Byte) with two application areas. Each package contains ten tokens.

Order number **ACT-IC2K26-10**

#### iCLASS 2K Wiegand Token (37-bit)

A contactless token with smart card technology programmed to Wiegand 37-bit format. It operates at 13.56 MHz. It is 2K (256 Byte) with two application areas. Each package contains ten tokens.

Order number **ACT-IC2K37-10**

**iCLASS 16K Wiegand Token (26-bit)**

A contactless token with smart card technology programmed to Wiegand 26-bit format. It operates at 13.56 MHz. It is 16K (2K Byte) with 16 application areas. Each package contains ten tokens.  
Order number **ACT-IC16K26-10**

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**iCLASS 16K Wiegand Token (37-bit)**

A contactless token with smart card technology programmed to Wiegand 37-bit format. It operates at 13.56 MHz. It is 16K (2K Byte) with 16 application areas. Each package contains ten tokens.  
Order number **ACT-IC16K37-10**

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**iCLASS 2K Wiegand Adhesive Tag (26-bit)**

A contactless adhesive tag with smart card technology programmed to Wiegand 26-bit format. It operates at 13.56 MHz. It is 2K (256 Byte) with two application areas. Each package contains ten tags.  
Order number **ACA-IC2K26-10**

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**iCLASS 16K Wiegand Adhesive Tag (26-bit)**

A contactless adhesive tag with smart card technology programmed to Wiegand 26-bit format. It operates at 13.56 MHz. It is 16K (2K Byte) with 16 application areas. Each package contains ten tags.  
Order number **ACA-IC16K26-10**

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**iCLASS 16K Wiegand Adhesive Tag (37-bit)**

A contactless adhesive tag with smart card technology programmed to Wiegand 37-bit format. It operates at 13.56 MHz. It is 16K (2K Byte) with 16 application areas. Each package contains ten tags.  
Order number **ACA-IC16K37-10**

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