

# MIFARE® DESFire® EV3 FIDO-Enabled Card

A high security physical access control card that supports FIDO



Maximize workforce productivity with the FIDO (Fast IDentification Online) enabled MIFARE DESFire EV3 Card — one badge for passwordless access to business applications and physical spaces. Simplify deployment and management with one converged credential that offers FIDO-based passkeys.

This FIDO-enabled addition to the existing HID DESFire EV3 portfolio is certified to the latest FIDO2 specification that replaces the need to remember and manage passwords. FIDO passkeys provide a device-based passwordless experience for users, reduces the number of IT tickets raised due forgotten passwords and reduces the risk of password phishing within your organization.

HID DESFire EV3 cards leverage security features including AES128 encryption, secure channel-based file transfer and proximity check to protect card data from attack.

Furthermore, DESFire EV3 credentials from HID offer layered security with the addition of a Secure Identity Object™ (SIO®) data model for added key diversification, authentication signatures and encryption.

Physical security is crucial, but it's not just about protecting facilities. It's about safeguarding a network of physical and digital systems, from vending machines to online portals. HID DESFire EV3 solutions are designed to be used across a wide range of applications that extend beyond physical access control to applications such as secure printing, time and attendance, cashless vending, and network logins via our partner network. The addition of FIDO further expands the use of your physical badge and strengthens your security posture with open standards for phishing resistant multi-factor authentication (MFA).

Make the switch to a password-free world and say hello to a single corporate badge that combines physical access with FIDO-based passkeys. Trust in HID's commitment to provide secure access control solutions that meets the needs of our customers by protecting your organization's physical assets, people and places.



## KEY BENEFITS:

- **Converged** – Enjoy the benefits of FIDO passwordless authentication combined with existing Seos based physical access infrastructure
- **Simplify Logical Access** – Remove the need for users to remember complex passwords. Compatible with FIDO-compliant applications and services such as Microsoft Entra.
- **FIDO Certified** – The FIDO-enabled card is certified as part of the HID Crescendo C4000 platform
- **High Security DESFire EV3 technology** – Enhanced data and privacy by incorporating mutual authentication and secure messaging mechanisms
- **Multi-Application** – DESFire EV3 is programmable to support a wide array of extended use applications such as secure printing, time and attendance and biometrics
- **Supports Secure Identity Object®** – Provides an additional layer of security to protect access control format data when selecting compatibility profile

## MIFARE® DESFire® EV3 FIDO-Enabled Card



<b>Base Part Number</b>	840 (Unprogrammed/Custom profile) 841 (Compatibility Profile)
<b>Operating Frequency</b>	13.56MHz
<b>Protocol</b>	ISO14443 Type A
<b>Communication Speed</b>	Up to 848kbps
<b>Platform</b>	HID Crescendo C4000 platform (NXP JCOP 4.5 hosting Seos and FIDO)
<b>FIDO Compliance</b>	FIDO U2F / FIDO2 CTAP2.1 (up to 30 resident keys)
<b>ISO 14443A UID <sup>1</sup></b>	Static (7 Byte)
<b>Memory and Endurance</b>	Data retention: 25 years Endurance: 500,000 cycles minimum
<b>DESFire Security Features</b>	3-pass mutual authentication based on 3DES or AES128, CRC16 and 4-byte MAC (TDES) or CRC32 and 8-byte CMAC (TDES or AES128), EV2 Secure Messaging, Proximity Check, Multiple Keysets
<b>DESFire Memory</b>	8Kb
<b>Security Evaluation and Certifications</b>	Common Criteria EAL 6+ for Secure Element, FIDO2 Level 2 (under Crescendo C4000 platform)
<b>DESFire SIO Data Object Support</b>	Yes (compatibility option only)
<b>Access Conditions</b>	Create application allowed (compatibility mode), default (unprogrammed), or user define (custom profile)
<b>DESFire HID Format Support</b>	Yes (wrapped in SIO if using compatibility option) or user defined (unprogrammed/custom option)
<b>FIDO Support</b>	Supports HID Omnikey 5022 and other FIDO compliant contactless devices.

### DESFire Compatibility and Performance<sup>1,2</sup>

Due to the additional complexity of Java based platforms, HID highly recommends advanced testing of DESFire and FIDO devices/systems including third party devices that support DESFire to ensure compatibility.

<b>Signo Readers</b>	Up to 2.3" (6 cm)
<b>iCLASS SE Readers</b>	Up to 2" (5 cm)
<b>multiCLASS SE Readers</b>	Up to 1.6" (4 cm)
<b>CP1000D</b>	Write EV1 SIO or EV1 compliant custom data to V programming compatibility profile. Write EV1 compliant custom data to N programming option (unprogrammed profile)
<b>iCLASS SE Biometric Reader</b>	Not compatible
<b>iCLASS SE RB25F Biometric Reader</b>	Not compatible
<b>OMNIKEY Readers<sup>3</sup></b>	SIO, UID and/or Custom Data – model dependent – refer to specific model datasheets for full details. Smaller devices like the 5022 or 5023 may require a specific orientation for consistent R/W performance
<b>Embedded Reader Boards<sup>3</sup></b>	SIO, UID and/or Custom Data – model dependent – refer to specific model datasheets for full details
<b>Printer Compatibility</b>	Compatible with high-definition printers (HDP). [Not recommended for use with direct-to-card printers]
<b>MECHANICAL, ENVIRONMENTAL AND COMPLIANCE</b>	
<b>Body Construction</b>	Composite construction (40% PET, 60% PVC)
<b>Environmental Certification</b>	RoHS, China RoHS, REACH
<b>Weight</b>	~ 0.19 Oz (5.5g)
<b>Dimensions</b>	Compliant to ISO7816-1 (ID-1)
<b>Operating Temperature</b>	-40 °F to +158 °F (-40 °C to +70 °C)
<b>Storage Temperature</b>	-31 °F to +176 °F (-35 °C to +50 °C)
<b>Warranty</b>	Lifetime warranty

<sup>1</sup> Although HID carries out extensive device testing, we cannot guarantee the full compatibility of all FIDO or Seos enabled devices; we highly recommend full advanced testing before deployment. Note that the use of static 7-byte UID may require device re-configuration to disable ISO14443-A UID reader output to avoid collision with Seos SIO format data output.

<sup>2</sup> HID 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. Due to the complexity of Java based platforms, HID recommends full testing to ensure compatibility with all Seos and FIDO devices and systems.

<sup>3</sup> See logical access HTOG for Seos compatible OMNIKEY products and embedded devices.



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