



VICON ACCESS CONTROL

# High-Security Contactless Smartcard Reader with Keypad



## Overview

Vicon's high-security contactless smartcard reader with integrated keypad is based on the proven MIFARE® contactless digital radio frequency identification (RFID) technology, a leading industry standard for contactless smartcards. The reader interfaces with Vicon Access Control (VAX) system by complying with the Wiegand communication protocol or OSDP (Open Supervised Device Protocol), depending on the model ordered, with the benefit of enhanced smartcard encryption and optional DESFire® EV1 and EV2 support. They offer value added features such as MAXSecure™ and ValidID™ that provide increased security of data.

The reader supports a number of VAX smartcard and tag technologies. These cards and tags are passive devices, eliminating maintenance by requiring no battery. Refer to the table below for details on all models.

## Product at a Glance

- ▶ Contactless smartcard reader
- ▶ Integrates reader and keypad
- ▶ Read range up to 2 in.
- ▶ Models that support Wiegand or OSDP output interface
- ▶ Mounts to single gang box and flat surfaces
- ▶ Optimized for MIFARE DESfire EV1 and EV2
- ▶ 13.56 MHz frequency
- ▶ IP67 rated
- ▶ Powered by 8-14 VDC

## Specifications

### Smartcard Reader

Model	VAX-D6.4R
Technology:	Contactless smartcard
Frequency:	13.56 MHz
Read Range <sup>4</sup> :	Up to 2 in. (51 mm)
Interface:	Wiegand (26-bit and custom formats), ABA Track II magnetic stripe (clock and data) or OSDP (Open Supervised Device Protocol), model dependent
Keypad Output <sup>7</sup> :	Wiegand or OSDP <sup>6</sup> (model dependent)
Audio Tone:	Beeper included standard
LED:	Four-state standard (red, green, amber and off)
Technologies Supported:	Interoperable with CSN <sup>8</sup> (may include ISO 14443 compliant credentials, credentials making use of LEGIC <sup>®</sup> Advant and Prime, and MIFARE <sup>®</sup> Classic 1k & 4k, MIFARE <sup>®</sup> DESFire <sup>®</sup> EV1 & EV2, MIFARE UltraLight <sup>®</sup> and MIFARE Plus <sup>®</sup> ), and Sector (may include Delta Card Sector <sup>9</sup> , such as MIFARE <sup>®</sup> Classic 1k & 4k, MIFARE <sup>®</sup> DESFire <sup>®</sup> EV1 & EV2, as well as FIPS201 [PIV Type A], TWIC, and CAC credentials)
Voltage <sup>3</sup> :	+8 - 14 VDC; linear power supply recommended
Current:	175 mA typical @12 VDC
Cabling <sup>5</sup> :	24 AWG minimum, multi-conductor stranded with an overall foil shield (ex. Belden 9535 or similar)
Mounting <sup>1</sup> :	Single gang box and flat surfaces
Dimensions:	3.0 (W) x 4.6 (H) x 0.75 (D) in. (76 x 117 x 19 mm)
Weight:	4 oz (113 g)
Color:	Black snap-on cover included
Environmental Installation:	Electronics sealed in weather- and tamper-resistant epoxy potting
Operating Temperature:	-40° F to 149° F (-40° C to 65° C)
Certifications:	FCC; ICC; CE; IP67 <sup>2</sup>

#### NOTES:

1. Spacer included standard for installations on metal. Depending on environment, additional spacing may be required.
2. Self evaluated.
3. Linear power supplies are recommended for best operation.
4. Using VAX-DC1-1 Smartcard with 12 VDC at the reader. Other credentials may be less. Read ranges are further subject to the type of smart phone, as well as the manner in which it is used, covers or external batteries affixed, as well as the installation and its environment.
5. For example, Belden 9535 or similar, supporting the five conductors comprising the physical layer of the Wiegand interface (power, ground, data 0, data 1, and/or beeper and LED). Alternatively, Belden 9539 or similar, for all reader functions. Shielded, twisted pair (Belden 8723 or similar) for OSDP. Contact your access control system manufacturer for their specific requirements.
6. OSDP readers are independent models and need to be appended with the suffix "-OSDP" when ordering (Example: VAX-D6.4R-OSDP).
7. 8-Bit Burst or 26-bit Wiegand standard. For 4-Bit Burst and other options, please contact Vicon.
8. CSN = Card Serial Number.
9. Examples include, but are not limited to, VAX-DC1-1 and VAX-DK1-3.

## Specifications

### Smartcards

Model	VAX-DC1-1/VAX-DC4-1	VAX-DE2	VAX-DK1-3/VAX-DK4-3
Technology:	Smartcard		
Technologies Supported:	MIFARE	MIFARE DESFire EV2	MIFARE
Frequency:	Excitation (13.56 MHz)		
Read Range:	Up to 3 in. (76 mm)	Up to 2.5 in. (64 mm)	Up to 0.75 in. (19 mm)
Formats:	Wiegand (26-bit and custom formats), ABA Track II magnetic stripe (clock and data)		
Memory:	1K byte/4K/byte	2K byte EEPROM with fast programming	1K byte/4K/byte
Operation:	Passive (no battery)		
Marking:	Date code and ID		
Type:	Clamshell style	Printable (dye sublimation)	Fob style (key tag)
Slot Punch:	Standard, vertical slot	Vertical and horizontal indicators	Built-in eyelet
Imaging:	Use a glossy adhesive overlay for color dye sublimation printing or print directly on card	Supports dye sublimation imaging	N/A
Color:	Off white	Glossy white	Gray
Dimensions:	2.2×3.4×0.06 in. (56×86×1.5 mm)	2.1×3.4×0.03 in. (53×86×0.79 mm)	1.2×1.5×0.15 in. (30×38×3.8 mm)
Operating Temperature:	-35° F to 122° F (-37° C to 50° C)	-31° F to 158° F (-35° C to 70° C)	-35° F to 122° F (-37° C to 50° C)

## Ordering Information

Model Number	Description
VAX-D6.4R	CONTACTLESS SMARTCARD READER; integrated keypad; designed to be mounted to a single gang box or flat surface; up to 2-in. reading range; Wiegand protocol
VAX-D6.4R-OSDP	CONTACTLESS SMARTCARD READER; designed to be mounted to a single gang box or flat surface; up to 2-in. reading range; OSDP protocol
<b>Smartcards</b>	
VAX-DC-1-1/VAX-DC4-1	Clamshell style; MIFARE compliant; 1K-byte/4K-byte memory
VAX-DK1-3/VAX-DK4-3	Key fob style; MIFARE compliant; 1K-byte/4K-byte memory
VAX-DE2	Printable; MIFARE DESFire EV2 compliant; 2K-byte memory

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Specifications subject to change without notice.

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