



VAX-D403R and VAX-D405R

VAX Vandal-Resistant Contactless Smartcard Readers and Credentials/Cards



VAX-D405R
Mounts to Single Gang Wall Box

VAX-D403R
Mounts to Mullion

VAX Smartcards

Overview

These vandal-resistant smartcard readers are manufactured from thick polycarbonate material, with epoxy potted electronics and tamperproof screws, making them ideal for installations where more durability is required (e.g., schools, correctional facilities, or sites with heavy machinery). The functionality of these smartcard readers is based on the proven MIFARE® contactless digital radio frequency identification (RFID) technology, a leading industry standard for contactless smartcards.

The readers interface with Vicon Access Control (VAX) system by complying with the Wiegand communication protocol or OSDP (Open Supervised Device Protocol), depending on the model ordered. They offer value added MAXSecure™ and ValidID™, that provide increased security of data, and support both sector and card serial number reads (CSN).

The VAX-D403R is designed to mount to metal doors, window frames (mullions) or flat surfaces; the VAX-D405R is designed to mount to a single gang box or flat surfaces.

Product at a Glance

- ▶ Vandal-resistant contactless smartcard readers
- ▶ Reads smartcard credentials, cards/fobs
- ▶ Read range up to 1.5 in. (38 mm)
- ▶ Wiegand or OSDP output interface
- ▶ Mounts to door or window frame (mullion) or single gang box
- ▶ Variety of smartcards available
- ▶ IP67 rated
- ▶ Powered by 8-14 VDC

Specifications

Smartcard Readers

Model	VAX-D403R	VAX-D405R
Technology:	Contactless smartcard	
Frequency:	13.56 MHz	
Read Range ¹ :	Up to 1.5 in. (38 mm)	
Interface:	Wiegand (26-bit and custom formats), ABA Track II magnetic stripe (clock and data) or OSDP (Open Supervised Device Protocol); model dependent	
Audio Tone:	Beeper included standard	
LED:	Four state standard (red, green, amber and off)	
Technologies Supported ² :	Supports Card Serial Number (CSN)-only and CSN + Sector reading of certain credentials making use of ISO 14443 and ISO 15693 compliant protocols. Smartcards include (but not limited to) VAX-DC1-1, VAX-CSC-2, VAX-CSM-2P, VAX-CSM-2S, VAX-DK1-3, VAX-CSK-2.	
Voltage:	+8 - 14 VDC; linear power supply recommended	
Current:	135 mA typical @12 VDC	
Cabling ³ :	24 AWG minimum, multi-conductor stranded with an overall foil shield (ex. Belden 9535 or similar)	
Mounting ⁴ :	Metal door, window frame (mullion) and flat surfaces	Single gang box and flat surfaces
Dimensions (W x H x D):	2 x 5.25 x 1 in. (51 x 133 x 25 mm)	3 x 4.5 x 1 in. (76 x 114 x 25 mm)
Weight:	6 oz (170 g)	8 oz (227 g)
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	

Smartcard Credentials

Model	VAX-DC1-1	VAX-DK1-3
Technology:	Smartcard	
Technology Supported:	MIFARE	
Frequency:	13.56 MHz	
Read Range:	Up to 3 in. (76 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	
Operation:	Passive (no battery)	
Marking:	Date code and ID	
Type:	Clamshell style	Fob style (key tag)
Slot Punch:	Standard, vertical slot	Built-in eyelet
Imaging:	Use a glossy adhesive overlay for color dye sublimation printing or print directly on card	N/A
Color:	Off white	Gray
Dimensions:	2.2 x 3.4 x 0.06 in. (56 x 86 x 1.5 mm)	1.2 x 1.5 x 0.15 in. (30 x 38 x 3.8 mm)
Operating Temperature:	-35° F to 122° F (-37° C to 50° C)	

Smartcard Credentials (continued)

Model	VAX-CSM-2P/VAX-CSM-2S	VAX-CSC-2	VAX-CSK-2
Technology:	Smartcard		
Technology Supported:	MIFARE DESFire EV2		
Frequency:	13.56 MHz		
Read Range:	Up to 2.25 in. (57 mm)	Up to 2.25 in. (57 mm)	Up to 1 in. (25 mm)
Formats:	Wiegand (26-bit and custom formats), ABA Track II magnetic stripe (clock and data)		
Operation:	Passive (no battery)		
Marking:	Date code and ID		
Type:	ISO style	Clamshell style	Fob style (key tag)
Slot Punch:	Vertical and horizontal indicators	Standard vertical slot	Built-in eyelet
Imaging:	Supports dye sublimation imaging	Use a glossy adhesive overlay for color dye sublimation printing or print directly on card	N/A
Color:	Glossy white	White	Gray
Dimensions:	2.1 x 3.4 x 0.03 in. (54 x 86 x 0.76 mm)	2.1 x 3.4 x 0.07 in. (54 x 86 x 1.8 mm)	1.9 x 1.5 x 0.28 in. (49 x 38 x 7 mm)
Operating Temperature:	-31° F to 122° F (-35° C to 50° C)	-40° F to 158° F (-40° C to 70° C)	

NOTES:

- Using VAX-DC1-1 Smartcard with 12 VDC at the reader. Other credentials may be less.
- May include MIFARE Classic, MIFARE DESFire EV1, MIFARE UltraLight and MIFARE Plus.
- 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.
- Spacer included standard for installations on metal. Depending on environment, additional spacing may be required.

Ordering Information

Model	Description
VAX-D403R	CONTACTLESS SMARTCARD READER; designed to be mounted to metal door and window frame (mullion) or flat surfaces; up to 1.5-in. (38 mm) reading range; Wiegand protocol
VAX-D403R-OSDP	CONTACTLESS SMARTCARD READER; designed to be mounted to metal door and window frame (mullion) or flat surfaces; long-range up to 1.5-in. (38 mm) reading range; OSDP protocol
VAX-D405R	CONTACTLESS SMARTCARD READER; designed to be mounted to single gang box or flat surfaces; long-range up to 1.5-in. (38 mm) reading range; Wiegand protocol
VAX-D405R-OSDP	CONTACTLESS SMARTCARD READER; designed to be mounted to single gang box or flat surfaces; long-range up to 1.5-in. (38 mm) reading range; OSDP protocol
Credentials/Cards	
VAX-DC1-1	CONTACTLESS SMARTCARD CREDENTIAL; clamshell type
VAX-DK1-3	CONTACTLESS SMARTCARD CREDENTIAL; key fob type
VAX-CSM-2P	CONTACTLESS SMARTCARD CREDENTIAL; high-security ISO type
VAX-CSM-2S	CONTACTLESS SMARTCARD CREDENTIAL; high-security ISO type; PVC printable
CAX-CSC-2	CONTACTLESS SMARTCARD CREDENTIAL; high-security clamshell type
VAX-CSK-2	CONTACTLESS SMARTCARD CREDENTIAL; high-security key fob type

Data Sheet Number: V274-98-00

Vicon Data Sheet Number: 8009-7274-98-00

Specifications subject to change without notice.

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