VAX
VICON ACCESS CONTROL

DID YOU KNOW

Unique Features you didn't know about VAX Access Control

Software | Server | Controllers | Readers | Receivers | Transmitters | Cards

VICON

www.vicon-security.com

Knowledge is Powerful with VAX Access Control

Vicon Access Control (VAX) is a unique access control system that will maximize your administrative efficiency and streamline operations. VAX is designed for simplicity in installation, maintenance, scalability and usability.

Our distinctive controllers are designed for a variety of locations. The door controllers can be installed in typical locations, such as electrical boxes, or in a unique over-the-door mount. The elevator controllers and I/O controllers are typically installed in a metal housing.

The web-based software and user interface have been designed to ensure ultimate ease-of-use and intuitive operation. Plus, VAX access control includes built-in integration with Valerus video management software, at no extra cost, providing the simplest path to a powerful,comprehensive video/access control solution with video verification capabilities.

We know that you have heard about Vicon Access Control (VAX). *But did you know about all these capabilities?*

1. VAX has an easy-to-install over-door controller module.
2. VAX is the only access control system with built-in motion detection.
3. VAX does not require port forwarding – and yes, that is a good thing!
4. VAX has a responsive web design for the mobile world.
5. VAX door timezones are highly configurable and essential to good system design.
6. VAX supports multiple card formats.
7. VAX has 16 crisis levels that can be configured for emergency situations.
8. VAX has many licensing options.
9. VAX can import a cardholder list for quick and seamless set up.
10. VAX has two options for powering the second door lock.

The Advantages of Mounting an ODM at the Door

Installing a Vicon Access Control (VAX) Single Door Controller Module (ODM) directly at/above the door it is designed to control has many advantages that separate it from a traditional installation of controllers back in an equipment/ maintenance closet or IT room.

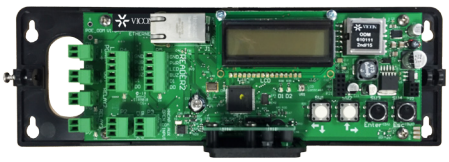
Number one advantage – significantly less cabling material, less time and manpower to run cables, less time and manpower to administer and troubleshoot.

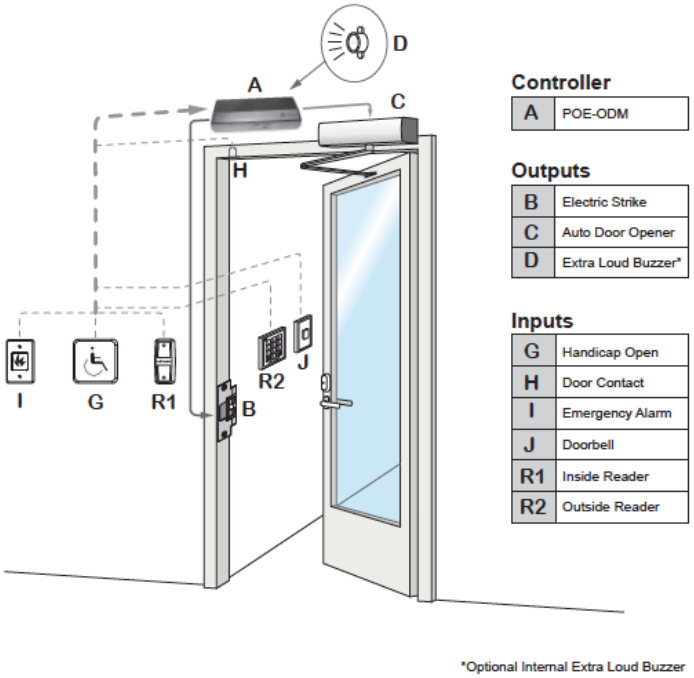
Number two advantage – never requires more than one technician to configure, test and troubleshoot a door since the controller, all peripherals and cabling are all in one place – at the door. The controller has on-board diagnostic tools through secure technician menus and an LCD screen that allow review and testing of network communication plus reader, inputs and outputs function and state. A traditional system often requires two or more technicians as one is required at the door and one at the controller/software end and a method to communicate to each other (two-way radio, cell…).

Number three advantage – eliminates need for external lock power supply (*and its cabling*) since lock power can be provided directly from the controller (12VDC @ 500mA). (*Note: use of a TDM two-door controller may require external power for second strike*).

A typical 'homerun' cabling topology of a traditional install requires long spans of multiple cables for a reader (6), strike (2), REX/PIR (2), door contact (2) and optional autodoor opener (2) routed up to 500' distances; this equates to additional cost, time and manpower.

Mounting at or above the reduces materials and manpower since the longest cable run for the above suggested cabling may be 10' or less; this equates to savings and cost reductions. Just a single Cat5/6 network drop back to the PoE source on the network and you are done!





VAX is the Only Access Control System with Built-in Motion

Vicon's VAX controllers are the only ones on the market with a patent pending integrated PIR/Request to Exit motion built into the panel.

What is a motion detector and how does it interact in the access control system?

Motion detectors are often used in our daily life, most commonly seen above door entrances to stores that allow the door to automatically open as you approach it. They are also used in home and business security alarm systems to detect unauthorized movement. The motion device is referred to as a PIR (*Passive Infrared*), which detects heat energy given off by humans and/or animals by scanning an area and identifying a heat source that is consistently present.

In access control; a motion detector is often used on the non-reader side of a door to trigger an electrified lock that keeps the door in a locked state. This allows the person to leave through the door without having to press or trigger some other form of Request-to-Exit device (*like a button*).

The market has many access control systems that have the ability to interface with a motion detector. However, these systems all require an external standalone motion detector wired back to the access control panel, which means you have two items to install plus all the additional cabling and required power source.

With VAX integrated motion functionality in the controller, one device is mounted at or above the door; the access controller (*the brains*) includes the built-in motion detector. It is easier to install, cost efficient and fully-configurable on the software level; there are no mechanical DIP switches to set and no external power source is required.

Not only is this an innovative concept, but it saves time and money when installing motion at an access controlled door.

Our VAX Solution Does Not Require Port Forwarding

Port forwarding is a networking method used to establish network connectivity via IP from one location to another by creating a rule (*mapping a port*) within a router.

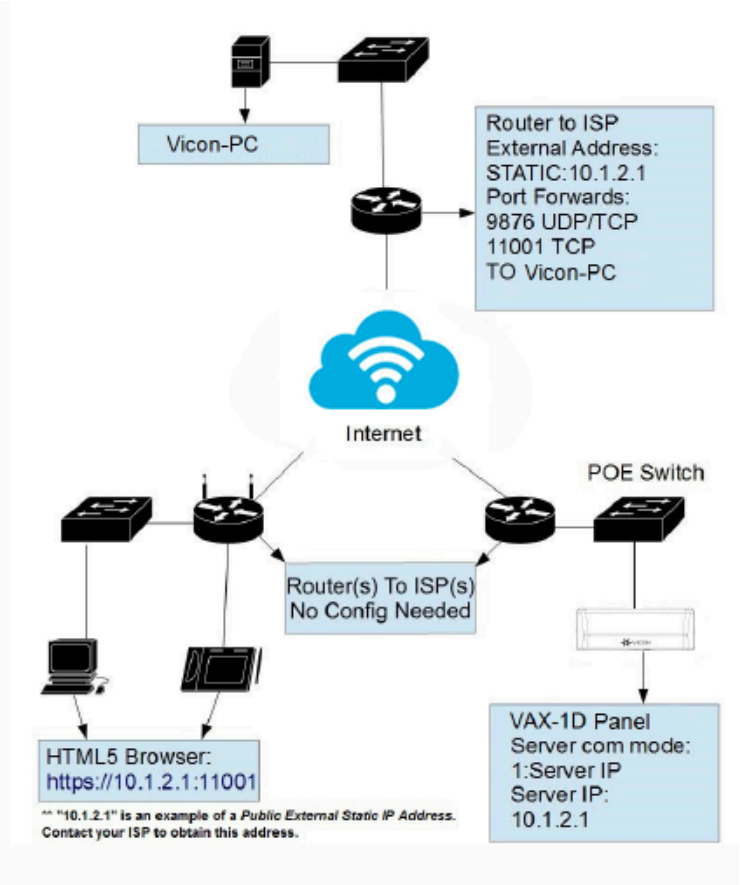
When a network request comes to connect to an external device from a server by IP, the receiving router will also receive a port number as part of the request. The receiving router takes that port number and redirects it to the intended IP address via its routing table. These routing tables are traditionally setup manually by a qualified IT technician because of their complexity.

Many IP-based access control solutions direct the host server to call out and 'look' for remote devices. If they are across different networks or remotely accessed via the Internet, they then require configured port forwarding at every location to be able to find and establish a network link between the server and the controllers. This takes an inordinate amount of time and manpower and often requires local IT support to configure the routing tables *(for mapping)* for every remote connection to controllers.

Vicon's VAX Access Control simplifies the process by eliminating the need for port forwarding by reversing the process. Rather than having the host access control server look for and try to connect to remote controllers via port forwarding, our system has the controller call out and connect to the host server.

Therefore only one IP address or one DNS server name is needed to identify the proper port. Our solution offers a consistent approach to configuring all controllers whether they are local to the server (*on the same network*) or halfway across the globe.

End users love the superior approach of Vicon's VAX communication protocol – it is simple to configure and quick to bring controllers online. Saving precious time and making installation a breeze.



VAX has a Responsive Web Design Created for Today's Mobile World

Responsive Web is a web design approach that provides the user with an optimal viewing and interaction experience with minimum resizing, panning or scrolling across a wide range of web-enabled devices.

Whether on a PC monitor, laptop, tablet or smartphone using Microsoft HTML5, Vicon's VAX web-based interface offers a user-friendly visual interaction with proper sizing on your screen of choice.

The screen layout automatically adjusts to the viewing area of your device. For PC environments, there are no web-browser ActiveX controls to install, and for web-enabled phones and tablets, no apps to download and install.

Normal web browsing and remote connections to applications or sites with other products often require the user to use scroll bars to move up, down and across, as well as to pan in just to read the text. In a security situation this can prove costly.

If you want to get a sense of how the screen will adjust its viewing based on the device or screen size, Google Chrome offers tools for this purpose.

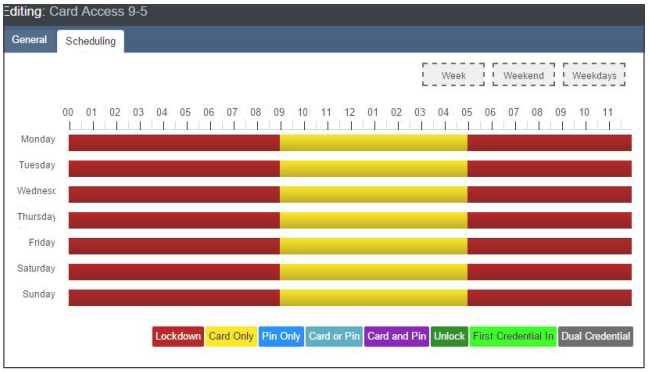
Open Google Chrome and log into your VAX interface. Press F12 and the screen will go into a split view. In the lower view (upper left corner) you will see a small icon that looks like a smartphone; if it is not already selected (blue), click on it. Now in the upper view, you will see a dropdown list that allows you to Select Device.

Choose one and the upper browser view will now display its adjusted layout in Responsive Web.

Door Timezones are Highly Configurable and Essential to a Good System Design

Door Timezones are the backbone of any well designed access control system. They determine the **when** and **how** for personnel access through a door point. Though User Timezones are an integral part of the access process, they are associated with the Access Privilege Groups and work in conjunction with the Door Timezones.

The first thing to understand is that there are only two door states, Secure, which means the door is locked and requires a credential action to allow access, and Unsecure, which means the door is unlocked for free egress not requiring a credential action. When a door is in a secure state (locked), there are 8 methods of credential presentation to gain access. The ninth method is the unlocked or public state. Door imezones have the flexibility to have up to 20 distinct zones per day and can be any combination of the above access methods. This is especially advantageous in environments where rooms may require multiple instances of door control throughout a calendar aDoor timezones have the flexibility to have up to 20 distinct zones per day and can be any combination of the above access methods. This is especially advantageous in environments where rooms may require multiple instances of door control throughout a calendar day.



Office Employee Entrance.
In this example, we have a card access 9 to 5 Door Timezone that will be assigned to the front door of an office. This is one of the default Door Timezones included in Vicon Access Control.

Below is a list of each method with a brief explanation; the assumption is that the user or users presenting their credential has a valid access privilege group assignment for the door:

Lockdown: This method is the highest level of a secure door. Only users with the Master option configured in their profile will be granted access through the door. This Lockdown mode is commonly used in association with emergency lockdowns and crisis mode implementations.

Card Only: This method requires a valid card (or fob) presented by the user to the reader that will grant access through the door.

PIN Only: This method requires a valid PIN entered by the user to a keypad that will grant access through the door.

Card or PIN: This method permits either the use of a valid card (or fob) presented to the reader or valid PIN entered on the keypad to grant access through the door.

Card and PIN: This method requires the user to present both a valid card (or fob) followed by a valid PIN entered on the keypad within 5 seconds of each other to grant access through the door.

Unlock: This method does not require the use of any credential to gain access through a door. The door is referred to as Public and provides free egress.

First Credential In: This method is used when a door has a lock state change from Secure to Unsecure (also referred to as Public) defined to occur at a specific time of day, and the user does not wish the door to automatically go Public until someone is actually present. Instead, it waits until a valid card is presented (meaning someone is now present at the facility), at which point in time, the door will now change state to follow its Public schedule. (Note: The user must have this First Credential In feature enabled in their profile; otherwise the door will grant access but remain secure when closed).

Dual Credential: This method is used in higher security environments when it is required that two distinct users must present their card or fob within 5 seconds of each other in order to gain access through a door. An enhanced mode to this method is the requirement that one or both of the distinct users must have the Supervisor option enabled in their profile and the door is configured to require at least one Supervisor level credential presented to grant access.

Note: Elevator timezones function much in the same manner for floor control but do not have the complexity of door timezones.

VAX Supports Multiple Card Formats

So you've come across a site or customer that already has proximity cards or fobs being used and issued with their existing system. They are either unhappy with their existing system or looking to replace it, hopefully with Vicon's VAX access control system.

Vicon's VAX access control product currently supports 14 distinct Wiegand formats and will continue to build out the amount of supported formats as needs arise.

26-bit Industry Standard
26-Bit HID, 26-Bit Cansec
32-Bit Kantech
33-Bit DSX
34-Bit HID
35-Bit Xceed
36-Bit Keyscan
36-Bit Vertex
37-Bit Xceed
37-Bit Fairway
37-Bit HID
40-Bit Hartmann
42-Bit Vicon

By supporting the industry standard along with several other custom formats the VAX system can easily replace a system without the usual huge accompanying cost of replacing all readers and cards as well. Replacing or installing an access control system has never been easier; the combination of the above-the-door installation, which reduces cabling and labor time, with vast support of Wiegand formats makes VAX a good choice for any access control upgrade.

Vicon also provides its own High-Security 42-bit format designed to work exclusively with our readers.

All supported formats are based upon request, so if you have come across a format that is currently not supported please contact Vicon and we will make every effort to include it.

Using Crisis Levels is Important for Emergency Situations

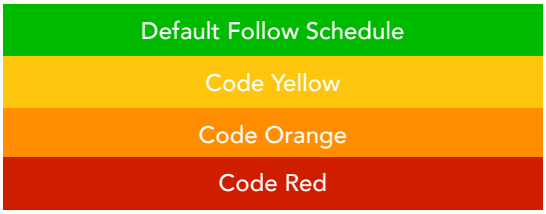
In its simplest explanation, the use of a Crisis Level is to trigger and set the access control system to a higher degree of security based on an emergency or threatening situation.

Unfortunately, security risks have increased in the past couple of years and unspeakable tragedies have plagued the education system. These school attacks, along with many other security risks in other environments, are prime examples of why Crisis Levels are an important feature in access control.

The ability to quickly secure a facility by locking doors and applying new levels of access privilege groups to the cardholders in a single action in a quick, swift manner is what the VAX Crisis Level management is intended for.

Vicon's VAX provides the system administrator up to 16 configurable levels of Crisis Mode and they are ranked sequentially. Any naming convention can be used but the default is color coded as follows:

- Code GREEN (restore default or resume)
- Code YELLOW
- Code ORANGE
- Code RED



Each Crisis Level is configured to apply a different (*and likely more secure*) door state to all doors associated when the crisis level is activated. The typical action would be to set all doors to a level that is locked and secure and require some equivalent or higher credential presentation to be granted access, such as CARD Only, CARD or PIN, CARD and PIN or even to the extreme of a full LOCKDOWN (*only cardholders set as a MASTER in their profile can get access*).

You can find crisis levels under the red triangle exclamation point in the upper right hand button menu.

In addition to the door settings you also set or assign Crisis Level for a cardholder. Essentially this means if you give a cardholder a Code YELLOW crisis level, they will still have access through any door that is at YELLOW or less, but if Code RED is activated as a higher level, that person will be denied access.

The Crisis Level can be triggered directly from the main interface of the software and can be applied to a full partition (*collection of doors*) or individually selected doors. The Crisis Level can also be triggered directly to a specific door via a configured mechanical trigger such as a button or switch. For multiple doors to be triggered mechanically by this method, each panel must be wired back to the same common button/switch.

What Happens When the Software License Expires?

The Vicon VAX access control system software is a licensed product. When the dealer first installs and configures the software and hands the system over to the end user, the software is in what is referred to as a Trial Mode and is fully featured with no limitations for 30 days. Vicon offers a license structure of 1 year, 5 year or perpetual.

As the software approaches its expiration date, a notification will appear to contact your dealer for renewal. The notification will indicate in real-time how many days you have left until expiration.

Once the actual expiration date is reached, the system will still provide the end user with a 10 day grace period of logins before the system will be officially unlicensed and require renewal. The 10 day grace period starts counting from the first login after it has expired giving the end user adequate time to reach out to their dealer for renewal. This proves to be a distinct advantage for those users who have not logged in for a long period of time ensuring they are not caught off-guard.

Should the end user permit the system to exhaust the 10 day grace period, the software will revert to a mode called Life Safety which permits limited essential control of the system but prevents the user from performing day-to-day activities. All the controllers will continue to function based on their last programming including any Life Safety updates applied.

Life Safety permits a user of the system to perform certain essential functions such as: Delete a Card or User, Override a Door/Floor/Input/Output, Pulse a Door, Delete and Administrator, Change an Administrator Password or Privileges, Set a Crisis Level, Reset Anti-Pass Back, Diagnostic Functions, Update Panels and View Real-Time Status.

All other system functionality is disabled until the software license is renewed. For example; the user cannot add new cardholders, add new timezones or access rules, add/edit or delete panels.

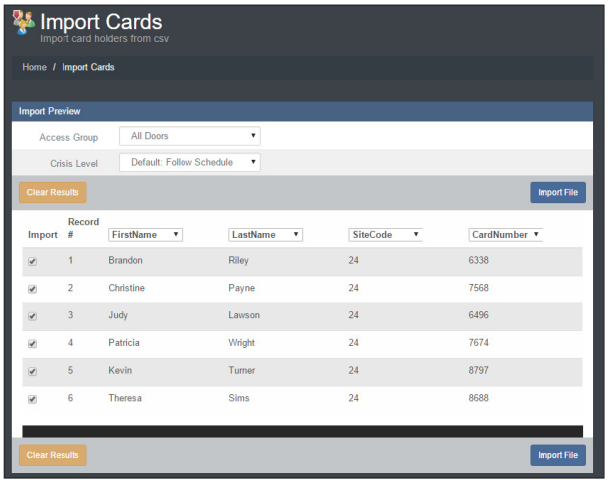
You Can Import a Cardholder List for a New or Retrofit Installation

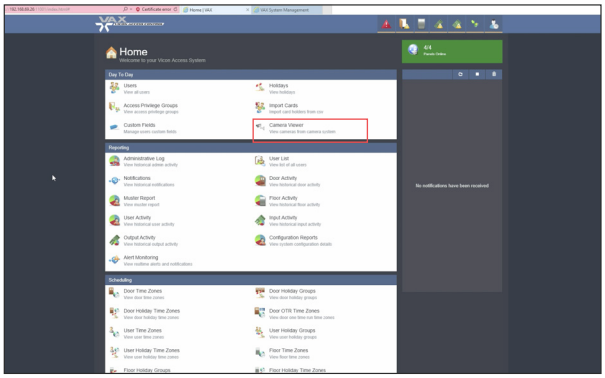
On a new installation, it is very common to create cardholder records manually one-at-a- time. This works well for a small site that does not have a large or existing cardholder list.

However, for larger sites that have hundreds if not thousands of potential cardholder records that need to be created this manual process may not be the best route. This also holds true if an installation is being retrofitted with the VAX access control solution from some other manufacturer's access control system.

If it is a new installation, often times the HR department can provide a list of Employees by their names, which as a CSV (*Comma-Separated Values*) file can be easily merged with the known new credential information. This import file will contain four primary fields to bring into the system – First-Name, LastName, Site/Facility Code and an assigned unique CardNumber.

For a retrofit installation whereby there is an existing older system that is being replaced by the more advanced VAX access control system, most access control products have some form of an export tool that allows the administrator to extract the minimum key cardholder information from that systems database that is required for a cardholder record to be functional in the new system – that being a FirstName, LastName, Site/Facility Code and CardNumber.





If this basic information can be extracted from the original system (highly likely), it can be formatted into a CSV file and imported into the VAX access control system using our Card Import Utility on the Home page. It is a quick, seamless process that is often a great selling point for the VAX system.

Before the import remember to create applicable User Timezones and applicable Access Privilege Groups. These groups are not part of the import process and must be assigned accordingly.

Instead of importing the entire CSV master file at once we recommend breaking up your import file into batches and importing the batch file one at a time and assigning it to a specific Access Privilege Group (if necessary).

The process is simple, powerful and even with thousands of users ultra-quick.

There are Two Options for Powering the Second Door Lock

Both the single door and two door VAX controllers currently use the same board design and terminal connections for peripherals; what separates them is the firmware that is applied at the factory level and how you decide how to assign the door(s).

Both versions of the controller have three solid state output relays

- Relay1 one powered at 12VDC @500mA
- Relay 2 and Relay 3 are non-powered
- 2 Wiegand reader ports
- One 12VDC output
- 4 dry inputs

On a VAX one door panel you can use the Relay 1 to provide power to the door strike (*which typically meets the specifications of available power*). On a two door controller, you can do the same for the first door, using Relay 1 wet power. But how do we handle powering the second door since there is not a second wet power output relay available on the controller?

The first option is the simplest and what people are most familiar with – use an external power supply rated for the requirements of the second door strike and assign dry output Relay 2 or Relay 3 to manage the second door strike.

The second option is equally simple and in certain cases can be a nice differentiator. Here's how…

The 2 reader ports (which provide DC power to each reader) and the 12VDC output (P8 on controller) are a shared power limited circuit that supplies 12VDC and up to 500mA combined draw. A typical proximity reader will have a peak current draw of around 80-100mA. So for two readers connected on a two door controller it will consume around 200mA of the available 500mA, leaving around 300mA of current available through the 12VDC output of P8.

You will have to know the peak in-rush current spec of the strike you are using on the second door. If it is 300mA or less, then you have the option to now use the on-board 12VDC as a source to power that second strike in conjunction with its assigned output relay (*in our case 2 or 3*). This is a truly viable power option that has been successfully deployed throughout the country.

So when would you not use the onboard power as a source for the second door strike?

- When the sum of the 2 readers peak current draw and the strikes in-rush current exceed 500mA (*this would be expected with larger proximity readers including keypad combo readers unless they themselves are powered from an external source and not via the reader port power*)
- When you are using maglocks (*typical fire code regulations dictate use of an external power supply to integrate with fire system for power drop in alarm conditions*)
- When electrified locks are 24VDC powered
- When electrified locks are AC powered

So it is important to understand and investigate the system specs and the requirements of the peripherals connected. The Protector.Net controller is very versatile and can be optimized in most installations.

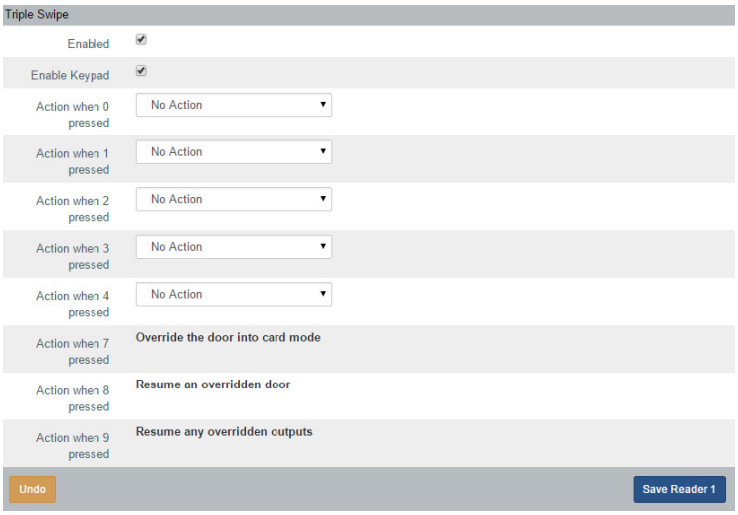
Triple Swipe Can Do Many Things Including Emergency Lockdown

For a higher level of security, VAX provides the Triple Swipe feature. The Triple Swipe function is the act of presenting a credential to a proximity reader in three successive and distinct swipes and having a controller action result.

An example of a typical use for this function would be a primary entrance door to business that has an unlock schedule during the day (e.g., automatically unlock from 9AM to 5PM). Let's say that there is a reason to close early (company function at 3PM) so you want to lock the main door at 3PM but have it revert to its normal schedule and unlock and go public the next business day on its own. Normally you would expect to have to log into the software, lock the main door and resume the main door the next day to put it back on schedule.

Using Triple Swipe, you can assign a reader associated with the main door in question with Triple Swipe "Override Card with Auto Resume." Now any cardholder who has Triple Swipe functionality applied as a role in their profile will be able to swipe their card three times at the Front Door reader and the door will go into a locked Card Only state. The Auto Resume function tells the controller to follow its default scheduling on its next programmed door state change.

This Triple Swipe functionality has many actions it can perform, from overriding doors to different states with or without Auto Resume (Lockdown, Card Only, PIN Only, Card or PIN, Card and PIN, First Card In and Unlock), to activating/ deactivating/ toggling/pulsing an output relay. This also includes being able to arm and disarm an alarm system via an output relay.



For a Triple Swipe with a proximity reader, you can only program one Triple Swipe action; however, if you use a combination keypad/proximity reader, you have even greater flexibility, as you can now associate different actions based on three card swipes followed by pressing one of the buttons on the keypad.

VAX allows up to 5 user configurable action codes (plus 3 hard-coded actions such as Override into Card Mode, Resume an Overridden Door and Resume All Overridden Outputs).

You can also perform a Triple Swipe without even swiping a card to the combo keypad/proximity reader. Just press the # button on the keypad three times, followed by the keypad action code plus # again, and it emulates the same Triple Swipe functionality as if a card was swiped three times.

VAX Above the Door Covers Available in 2 Color Options

The VAX Over-the-Door controller is often mounted on the wall (on the non- reader side) just above the door it is controlling, which means the enclosure would be visible to personnel or any person accessing the door within viewing range.

Though most partners, integrators, dealers and installers using VAX are familiar with, and typically order, the controller in a matte black ABS enclosure, some have requested a white ABS enclosure to aesthetically fit in their environment better. Vicon now makes the cover in both color options.

The choice of going black or white in a commercial, industrial or out-of-sight environment really does not matter; however, some consideration should be placed on the visual aesthetics within a finished office area.

Since numerous other "items" within an office area, such as smoke detectors, ceiling mounted wireless routers, IP cameras, etc., are often lighter in color (typically white or off-white), given the choice, many owners and end users would want to match that theme for visual consistency.

You can also take the entire color-coordination aspect to another level. The ABS material of the enclosure is paintable. This allows more customization options to match the install site and yet another differentiator.

A dealer can offer multiple options to their customer confidently.

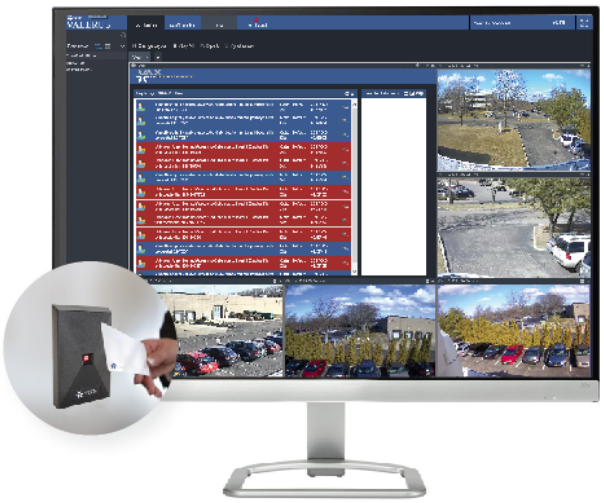
VAX Access Control Integrations Create Powerful Building Management Solutions

VICON VALERUS *Advanced Simplicity*

VAX VICON ACCESS CONTROL

Seamless Integration with Valerus VMS Allows for Video Verification Capabilities

Cameras within your Valerus system can be associated with a specific door or elevator card reader, enabling the VAX interface to automatically display Valerus video that correlates to each swiping event.



- Confirm that each swiping individual actually matches the card holder's identify
- Make sure no piggy backing entry occurs *(two people entering on a single swipe)*
- Receive alerts and see who is being "denied access" in real time.

HID Easy Lobby Integration Lets You Manage Visitor Access as Part of Your System

- Map visitor cards to the Valerus server and grant access to selected doors
- Card is immediately disabled upon expiration
- Automatically record and collect visitor data, including visitor identify, purpose of visit and length of visit

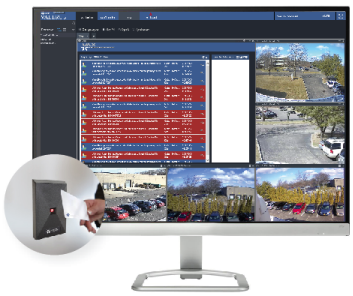
Installation Simplicity

On-board LCD keypad ▸ Superfast 100Mb data transfer ▸ Controllers call out to server ▸ Static or DHCP enabled ▸ Wireless 802.11B/G option ▸ Many mounting options with reduced wiring ▸ Integral REX all-in-one

VAX Access Control Products

VAX Access Control Servers connect to Valerus software to create one truly powerful building security system.

Vicon offers a variety of controller devices to secure ALL entrances and exits in one simple system.



Manage unlimited sites across multiple time zones using VAX multiscreens.

Choose from an assortment of readers, transmitters and cards to create a versatile access solution.

User friendly, flexible with the capability of online mobile access. Administer your access control system from any browser-enabled device.

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