Storage Units

Overview

This technical note details how to configure the Storage Unit feature of the Inner Range Inception controller. This feature was included with the 5.0 release of Inception.

Introduction

The Storage Unit feature allows personal storage facilities to be more easily configured and managed by the Inception controller. Individual storage units can be defined, containing motion and door sensor inputs to detect activity, and outputs for automation responses such as unit door locks or lighting. Units can be assigned to customers so that when they access the facility, their unit automatically de-secures, allowing them to access it. As they leave, the unit automatically re-secures.

Hundreds of units can be managed, with the only limit being the number of wired inputs that Inception supports (1024). If there is one detector per unit, up to 1024 storage units could be defined. If two inputs per unit (e.g. a detector and a door sensor), up to 512 could be created. When calculating the number of units that can be supported, keep in mind any additional inputs required for the rest of the site (access gate sensors, door sensors, facility security etc).

The dedicated Storage Unit structure and the Storage Blocks that group them make automated responses much easier to manage, allowing lighting control or other responses as units in a block are secured and unlocked.

Storage Units

Storage Units are configured on the **[Configuration > Access Control > Storage Unit > Storage Units]** page. Their structure is simple, containing a list of sensor inputs in that Unit that should be monitored, and a list of outputs to control for automation or unit door responses.

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Unit Outputs

Unit Outputs
Unit 1 Lighting

ⓘ

Add Items   Remove Selected Items

Units can be in a variety of states:

- **Unlocked**: The unit can be opened and accessed. Any input activity will not trigger alarms, and any configured Outputs will be turned on
- **Secure**: Any input activity will cause the unit to enter the Alarm state, and any configured Outputs will be turned off
- **Alarm**: Any active inputs while the unit is secure will cause the Alarm state. This will remain until the unit is unlocked or all inputs are secure.
- **Tamper**: Any inputs within the unit that enter the Tampered state will cause the unit Tamper state. This will remain until all inputs are no longer tampered or have been isolated.
- **Opened / Closed**: If the unit has Door Position Sensor inputs configured, Inception can detect if the door is opened or closed
- **Unlocked Too Long:** Based on the block configuration, a unit can enter an 'Unlocked Too Long' state if it is not secured after a defined time
- **Vacant**: A vacant unit can be freely accessed without alarms, and timed logic such as Unlocked Too Long does not trigger

Units can be configured to automatically re-secure after a period of time. The time is configured by the Block the unit belongs to, and the time will begin once a unit's door has opened and then closed. Re-opening the door will stop the timer again. Note that this requires the use of at least one Door Position Sensor input.

The re-secure time can help ensure that a unit is not accidentally left unlocked after the customer has left the premises.

Storage Blocks

Storage Blocks represent a group of storage units and can be configured on the **[Configuration > Access Control > Storage Unit > Storage Blocks]** page. A block could represent an entire site with 100s of units, a single building of units in a multi-building site, a single section of a building, and so on. There can be as many blocks as required in a system.

Blocks serve several purposes:

- They manage the automatic unlocking and securing of units based on customer access requests
- They are a central programming point for units, allowing the auto-resecure time to be configured or updated in one place instead of configuring it for every individual unit
- They facilitate automation by summarizing the state of all units within the block (all units secure, some units unlocked, some units in alarm, some units in tamper, etc.)

Blocks are configured with entry and exit readers that are used for automatic unit control. These can be dedicated readers, or could be the readers used at existing access control points like entry and exit gates or the entry door to a building, etc. This means the customer's experience can be streamlined, where their access request at the entry gate automatically unlocks their unit with no additional action, and their request at the exit gate secures their unit.

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Unit Permissions

Storage units must be added to a user's permission list either directly or via permission groups. Three types of permissions can be given for a Unit:

- **Control on Block Access** – The unit will unlock if this User presents a credential (card, PIN, etc) at the entry reader for a Block that contains this unit. Similarly, the unit will secure via the exit readers for the block
- **Control Unit** – Allows the unit to be unlocked and secured via Inception's web interface and eventually the SkyCommand App
- **Vacancy Control** – Allows the unit's Vacancy state to be controlled via Inception's web interface. This permission is only available via Permission Groups

If adding the Unit directly to a User's permission list, Control on Block Access and Control Unit will be automatically applied. This would be the standard permission set for Customers, and allows one or more Units to be assigned to a customer User.

For Staff users, if they have permission to control the units, it is recommended that they **do not** have Control on Block Access. Otherwise, they would unlock all units as they arrive to work. Instead, a permission group should be created with all of the units with Control Unit and Vacancy Control only.

Unit Control

As mentioned above, permissions are required to control the Units. Customers do not need web interface access if the Control on Block Access functionality is used, but Staff users may require the ability to control the Units.

Units can be controlled via the **[State / Control > Control Storage Units]** page.

Quick Control	Storage Unit Name	Status	Advanced	Last Access Event
🔓	Unit 1	Unlocked Too Long	⚙	User Installer Unlocked the Storage Unit at 2022-06-30 11:41:19 am
🔓	Unit 2	Unlocked	⚙	User Installer Unlocked the Storage Unit at 2022-06-30 11:42:14 am
🔒	Unit 3	Secured	⚙	

The Quick Control button for a Unit will control the unit based on its current state. A secure unit or one in alarm would be unlocked, an unlocked one would be secured, a vacant unit would have the vacancy cleared, etc.

Otherwise, manual control is available for the units. This can be accessed with the Advanced button to control a specific Unit, or the Control All button in the toolbox to control all units that the user has permission to control.

Control - Unit 1 ✕

Change the state of storage units using the buttons below. This will only work for storage units that you have permission to control. Read More...

Unlock	Secure

Vacancy Control

Vacant	Clear Vacancy

Progress

Close

Unit Security Configuration

A Calculated Input is also created when a Storage Unit is created to represent if that unit is in Alarm or in Tamper.

	Input Name	Status	Advanced
⊘	Unit 1 - Alarm	Active	⚙
○	Unit 2 - Alarm	Inactive	⚙
○	Unit 3 - Alarm	Inactive	⚙
○	Unit 1 Sensor	Inactive	⚙
⊘	Unit 1 Door Reed	Active	⚙

Instead of monitoring the unit sensor inputs directly in the area and trying to isolate them if the unit is unlocked, this calculated input summarises the unit alarm and tamper status and can be monitored by an Area instead, making unit security much easier to manage. These inputs report with unique point IDs and allow a monitoring station to easily identify which unit had an alarm.

To manage unit security and monitoring, it is recommended that a dedicated Area is created to monitor those unit alarm inputs. Staff users should have permission to control this area so they can cancel the alarm response. There are two main options for the Input Type to select that depends on the desired responses to alarms.

- **Instant Alarm:** When the area is armed, it will go into alarm on activation of a Unit Alarm input, sounding siren responses and reporting the event if professionally monitored. If disarmed, no responses will occur on unit alarm. If a unit is tampered with, sirens will sound and an event will be reported regardless of the area state.
- **Storage Unit Alarm:** A new input type, that will sound siren responses on activation of a Unit Alarm input regardless of the area arm state, but will only report the event if the area is armed. This allows the area to be disarmed during the day while staff are present, only triggering local sirens. After hours, the area can be armed which still triggers sirens, but also reports the alarm event. If a unit is tampered with, sirens will sound and an event will be reported regardless of the area state.

Monitored Inputs	Input	Input Type (Process Group)	
	Unit 1 - Alarm	Storage Unit Alarm	⌄
	Unit 2 - Alarm	Storage Unit Alarm	⌄
	Unit 3 - Alarm	Storage Unit Alarm	⌄

Add Items   Remove Selected Items

Automation

Various automation responses can be created based on the Unit or Block states. Units can have outputs defined that will be turned on when the unit is unlocked or turned off when secure. This could be used for simple responses like unit lighting or the unit door lock.

Blocks can also have outputs defined that turn on if any units in the block are unlocked, which could be used for scenarios such as lighting control for a section of units.

For other customised scenarios, automated actions can be used. Individual units can trigger actions based on their state, or blocks can be used to trigger if all units are secure, or if some units are unlocked, unlocked too long, or in alarm.

REST API

Inception's REST API can be used with the storage unit functionality. Units can be added to user permissions, allowing direct integration with the booking system for the storage facility. When a customer rents a unit, a User can be created within Inception for that customer with a unique PIN and permission to access the front gate, any entry doors and their unit or units.

Unit status such as vacancy can also be controlled via the API.