R A D I O N I C S

READYKEY® K6100 Readykey for Windows™

Elevator Control Module Datasheet

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Introduction

On some Readykey for Windows systems it may be a requirement to restrict access to certain floors of a building via an elevator. This datasheet describes the operation of the K6110-E Elevator Control module which is available with Readykey for Windows V3.0 or later. This module allows you, in a multi-floor building where elevators are used, to restrict user access to certain floors of the building. In addition to restricting access to certain floors, access can also be limited to certain times, for example, office hours.

Use of this module is not limited to controlling elevator access. It can be used to perform any function which can be activated by a relay or relays switching, for example, arming/disarming alarm systems based on a keyholder's programmed access rights. The section entitled 'Flexibility' at the end of this document provides further information on other applications.

The K6110-E Elevator Control option is a module, available for purchase, that can be added to Readykey for Windows available on your system.

Other Documents

This datasheet should be read in conjunction with the following documents:

K2100/K1100 Operation/Installation Manual

Readykey for Windows System Programming Manual

K2015A Alarm Event Manager Installation Manual

Note: It is assumed you are familiar with Readykey for Windows in general, particularly programming door and access information.

Compatibility

All references in this datasheet to Readykey products assume the following software versions:

- K2100/K1100   V3.0 or later
- Readykey for Windows   V3.0 or later

This facility is **not** available on K2000-N controllers, or K2100/K1100 controllers with software earlier than V3.0.

If you are considering using Elevator Control on an existing system, then you should check the relevant door controllers and software are suitable and whether any upgrades or updates are required.

Basic Operation

The Elevator Control Module enables combinations of relay outputs to be activated dependent on the access assigned to a keyholder. These outputs can then be used to provide, for example, elevator control, alarm arming and disarming and so on.

The Access Group assigned to a keyholder determines the combination of relays activated. This may include Time Profiles to restrict the use to certain times/days. A single Access Group may be used for both elevator control and standard access to areas.

The basic sequence of events for the operation of the Elevator Control facility is as follows:

1. The keyholder uses their ID device with the designated elevator reader.

2. The controller uses the programmed access information to see if the ID device is valid for Elevator Control.

3. If the ID device is valid, then the controller activates the relevant relays on the associated Alarm Event Manager, and also the lock output will be activated, if the ID device is valid through the 'entry area' assigned to the reader.

Note: The K2015A Alarm Event Manager outputs need to be used by the installer to interface Readykey for Windows to the elevator electronics or other devices. If an elevator is being controlled, the relay outputs would then enable the relevant elevator floor buttons so they can be pushed to bring the elevator to the desired floor.

Each K2100 door controller can be used to provide access to up to 32 floors - 4 K2015A Alarm Event Managers, each with 8 outputs. A maximum of 256 floors can be controlled per site. If K1100 door controllers are used the total number of floors is 16 floors - 16 floors per controller with a maximum of 128 floors per site.

Setting up Elevator Control

Setting up Elevator Control consists of four stages:

1. Defining the 'Elevator Reader' in **Installer: Doors**.

2. Defining the Alarm Event Managers in **Installer: Alarm Modules**.

3. Defining the **Outputs...** of the Alarm Event Managers.

4. Modifying or creating access groups for keyholders to include access to floors as allowed, using **Admin: Access Groups**.

Note: In addition, to use the Elevator Control facility:

1. The version of Readykey for Windows is 3.0 or later.

2. The K6110-E Elevator Control module has been purchased.

3. A K2100/K1100 door controller with Version 3.0 or later software is available, with a K2015A Alarm Event Manager and reader connected to a spare channel.

You should also note that elevator 'floors' can only be assigned to keyholders through Access Groups - it is not possible to add elevator 'floors' as part of the 'extra access' for each keyholder available in Readykey for Windows Version 4.0 and later.

Define the Elevator Reader

1. The Elevator Reader is defined as follows: Start the **Doors** sub-application from within **Installer**:

2. Make sure the correct **Division** is displayed in the title bar - select **Division...** from the menu to switch divisions if multiple divisions are being used..

3. Choose **Clear** to clear all displayed information.

4. Select the correct **Site** and **Door Controller**.

5. Select the **Channel Number** for the Elevator Reader.

6. Enter the **Door Name**. This should be the Elevator Reader Name, for example, *Main Elevator*.

7. Enter a **Description** for the reader, for example, *Main Elevator - Reception.*

8. A **Time Profile** may be selected, which will activate the door controller Lock Output when active. This could be used, for example, to switch lighting in the elevator ON/OFF.

9. Enter the desired **Lock Time** for the amount of seconds that the reader LED is to activate when valid access is granted. This would be the amount of time that the keyholder has to push the floor button within the Elevator cab.

10. Select the correct **Reader Type** (and **PIN Reader Time Profile** if applicable).

11. Make sure the **Elevator Reader** box is checked, to configure the 'door' as an elevator reader.

> **Note**: The Door Open Time, Fail Safe Lock, Exit Out of Hours, Request for Entry, Emergency Override and Free Exit options are not applicable for elevator readers.

12. An **Entry Area** must be specified if you want for the lock output activated as well as the relays, dependent on the assigned Access Group to the keyholder.

13. Choose **Add** to save the new 'door'.

14. Choose **Close** to leave **Installer: Doors**.

Define Alarm Event Manager

1. Start the **Alarm Modules** sub-application from within **Installer**:

2. Choose **Clear** to clear all information displayed.

3. Select the **Site**, **Door Controller** and **Channel Number**.

4. Enter the **Alarm Module** name, for example, *Main Elevator*.

5. Enter a **Description** of the Alarm Module, for example*, Controls Main Elevator Access*.

6. Select the alarm module **Type**, K2015 Alarm Module or K2015A Alarm Event Manager. A K2015A Alarm Event Manager is recommended for Elevator Control as it provides eight programmable relay outputs.

7. Choose **Add** to save the information.

Define Output Information

1. Choose **Outputs...** to define the individual 'floors' of the elevator (i.e. the relay outputs) as follows:

2. Enter a unique **Output Name** to give information about what the relay controls - this may be the 'floor' name, for example, or other function. Note that if two elevators provide access to the same floor then they should be so identified, for example, as *Elevator 1 Floor 2* and *Elevator 2 Floor 2*.

3. Enter any additional information in the **Description** field which will help identify the output.

4. If a **Time Profile** is selected, then any keyholder who is allowed access to the selected floor (via Access Groups) will be allowed access when a valid ID device is used with the Elevator Reader but **only** when the Time Profile is active. Select **None** if access is to be gained at all times when a valid ID device is used with the Elevator Reader.

5. Select **Elevator Control** from the drop down list in the **Event Code 1** box.

6. Select the correct **Elevator Reader Name** from the drop down list in the **Source** box.

7. The relay may be programmed to also activate automatically **without** an ID device being used, by using up to three additional Time Profiles (**Event Codes 2-4**). Select *Time Profile* as the **Event Code**, then select the appropriate **Time Profile** from the **Source** drop down list box.

For example, if the relay is being used to control access to floors of an elevator, this would provide 'public' access when the time profile was active.

Note: For this facility to operate, the times/days covered by these three Time Profiles **must** be within the overall **Time Profile (if used)** for the output (see step 4).

When a Time Profile is active the relays act as follows:

a. If the relay is set to "momentary" then it will activate momentarilyfor the specified Pulse Period at the start of the Time Period, ignoring any Wait Time that may be set. It will remain off for the remainder of the time profile.

b. If the relay is set to "latched" then it will ignore any Maximum Activation Time and Wait Time set and stay latched for the duration of the Time Profile and allow access after hours to keyholders that are permitted.

c. If the relay is set to "Set/Reset" then it will toggle ON/OFF every minute for the duration of the time profile.

d. It the relay is set to "Pulse" then, as with Latched, it will ignore any Maximum Activation Time and Wait Time set and will pulse for the duration of the Time Profile.

8. Select the Relay Action Type to be Latched. Specify a Wait Time of 0 and a Maximum Activation Time equal to the amount of time, in seconds, you desire the relay to activate. The output relay will activate when a valid ID Device is presented to the Elevator Reader for the amount of time specified in the Maximum Activation Time and still allow the Time Profile to override..

9. Choose **Change** to save the new information.

10. Repeat the above steps for the other 7 outputs on the K2015A Alarm Event Manager. If more than 8 outputs are being controlled from a single elevator reader, then choose **Close** to return to the main **Alarm Modules** screen, program the information for the next K2015A Alarm Event Manager, and repeat the process.

Note: Up to eight floors may be assigned to a K2015A Alarm Event Manager with up to 4 K2015A Alarm Event Managers on a K2100 door controller. The four relay outputs on a K2100/K1100 door controller itself cannot be used for elevator control.

11. When all floors have been assigned to the alarm outputs, choose **Close** to return to the **Alarm Modules** screen.

12. Choose **Close** to return to the **Installer** sub-applications.

13. Choose **Close** to leave **Installer**.

Modify Access Groups

Once all the alarm outputs information has been programmed, the access information then needs to be programmed. This is done in exactly the same way as access through 'doors' using Access Groups.

From the **Admin** application, start the **Access Groups** sub-application:

1. Select the correct **Site**.

2. Select the **Name** of an existing Access Group or enter the name of a new **Access Group** as required.

3. Programming access to 'floors' of an elevator (relay outputs) via designated elevator readers is achieved in a similar way to programming access to areas through standard readers.

   In the same way as the **Areas...** button is used to determine to which areas a keyholder assigned this access group is allowed access, the **Elevators...** button is used to determine which relay outputs on the K2015A Alarm Event Managers will activate when the keyholder uses their ID device with the elevator reader.

   Select the Elevator Reader's assigned **Entry Area** by using the **Areas** button to add the Elevator Reader's controlled area to this access group.

   Warning: If a **Time Profile** is assigned to the Access Group, the selected 'floors' (outputs) will **only** be available (activated) when the keyholder's ID Device is used with the Elevator Reader when both the time profile assigned to the Access Group **AND** the time profile assigned to the floor are active.

Note: If a Time Profile has been defined for the 'floor' then access will be denied at any time outside the time specified by the 'floor' Time Profile, regardless of the Time Profile assigned to the Access Group.

5. Choose **Elevators...**.
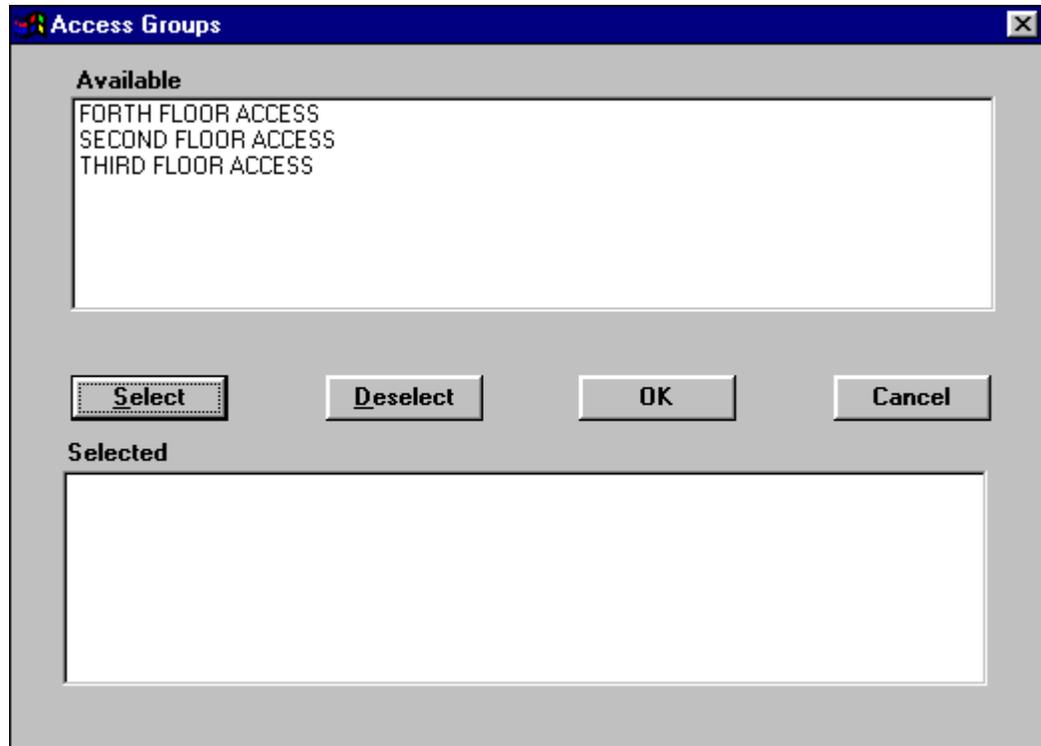
6. All defined 'floors' (outputs) for the site will be listed in the box at the top. Select one or more 'floors' from the list by clicking on them with the mouse, while holding the keyboard Control key 'CTRL' down, and choose **Select** - the highlighted areas will move to the lower box. Choose **OK** when all required 'floors' have been selected, and you will be returned to the main **Access Groups** screen.

7. The process may now be repeated, if required, for a second combination of areas and/or elevator 'floors'.

8. When all areas and floors have been specified for the Access Group choose **Add** (or **Change** if an existing Access Group was modified).

9. Repeat the operation for other access groups as required, then choose the **Close** button to leave **Admin: Access Groups**.

10. The Access Group programmed can now be assigned to keyholders in the normal way, via the **Personnel** application. The access group can also be assigned to departments, workgroups and divisional access groups if these are being used.

Note: Elevator floors can only be assigned to keyholders through an Access Group. They cannot be added to individual keyholders via the 'extra access' facility available in Readykey for Windows Version 4.0 or later.

Manual Elevator Control

The **Lock/Unlock** application in Readykey for Windows facility can be used with the Elevator Control option in the same way that it is used with doors, to temporarily override the current state of a relay output (elevator floor). For example, it would be possible to remotely provide access to an elevator floor from a PC running Readykey for Windows in a company's reception workstation.

1. Start the **Lock/Unlock** application.

2. Choose **Elevators...** in the **Lock/Unlock** screen to display the Manual Elevator Access Control screen.
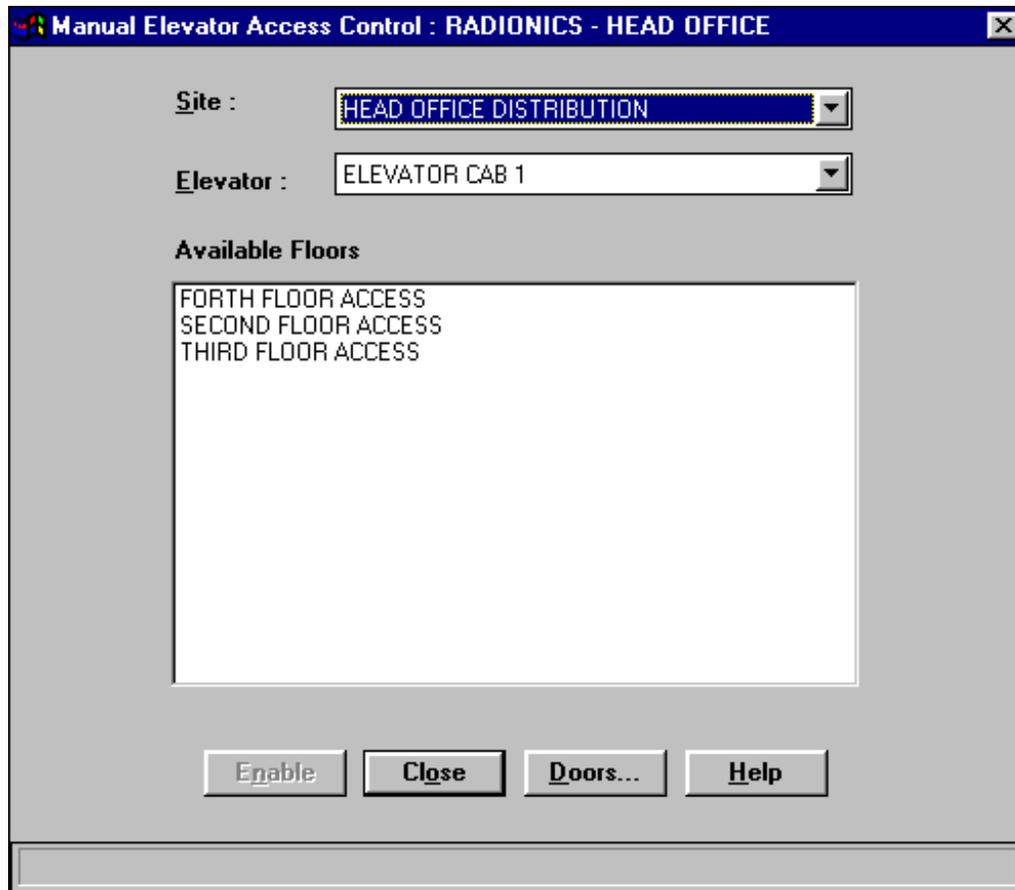
3. Select the required **Site** and **Elevator** from the drop down lists. The programmed floors for the elevator will be displayed in the **Available Floors** box.

4. Select the required floor(s) by clicking on them with the mouse.

5. Choose **Enable** to provide access to the selected floor - the relay output will activate for the time programmed in **Installer: Doors: Lock Time**.

Note: Unlike manually locking/unlocking doors, manually controlling elevator access only operates momentarily for the activation Pulse Period time programmed for the relay output. For latched outputs it operates for the maximum activation time specified. It is similar therefore, to a keyholder using their valid ID device with the elevator reader.

Flexibility

Although called Elevator Control this feature of Readykey for Windows is not limited to controlling elevator access. It can be used to perform a variety of functions, totally unrelated to elevator control, which can be activated by switching different combinations of relays dependent on the access group of a keyholder.

Different Access Groups can then be used to provide access to any combination of the functions available. For example, members of one Access Group may be able to access elevator floors 1, 3 and 4 only, another may be able to access all floors **and** disarm the alarm system.

In addition, neither the K2100/K1100 door controller nor the K2015A Alarm Event Managers need to be dedicated. For example, two channels on a door controller can be used as Elevator Readers while the other two are used to provide normal access control. In the same way only three alarm outputs may be required for elevator control, the remaining outputs can be used for other purposes.

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