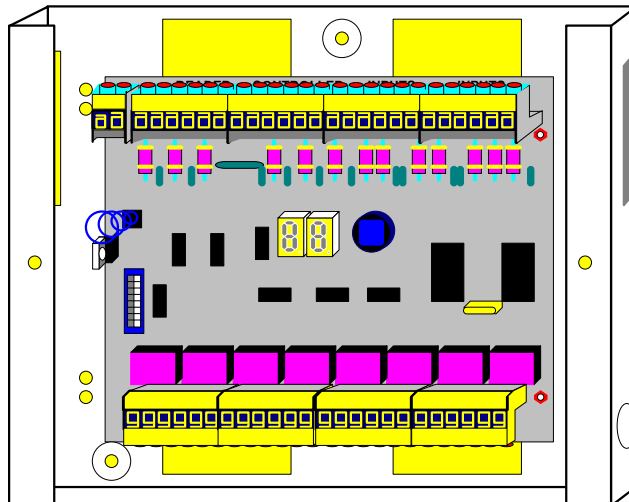


READYKEY® K2015A Alarm Event Manager

Installation Data Sheet



- 8 Supervised Inputs (Normally Open or Normally Closed)
- 8 Latched Relay Outputs (Readykey for Windows systems only)
- 8 Relay Outputs when used with Readykey for Windows
- Steel Case with Tamper Protection
- Diagnostic Display

Description

The K2015A Alarm Event Manager is an optional device that can be connected in between a Readykey Door Controller and a Readykey Reader. It can monitor up to 8 inputs and provides 8 relay outputs. The response to the inputs and the control of the relay outputs is determined by the type of door controller and the type of administration system. To take full advantage of all its features, the device should be connected to a K2100 or K1100 door controller administered by Readykey for Windows. When not being administered by Readykey for Windows, the K2015A Alarm Event Manager behaves in the same way as the Readykey K2015 Alarm Module, for which it is a complete replacement.

Inputs

All eight inputs are fully supervised. By using an end of line resistor and a resistor across the detector contacts, four different input states can be detected. These states are Normal, Active, Open (Tamper) and Short (Trouble). A set of switches determines whether an input is Normally Open or Normally Closed.

Compatibility

The K2015A can be used on any of the following Readykey controllers:

- K6100-16 and 32 Office Admin. Kit
- K6100-SS and K6100-MS
- K2100 multi-function 4 door controller
- K1100 multi-function 2 door controller
- K2000-AM master 4 door controller
- K2000 -N slave 4 door controller

When the access control system is administered by any of the methods described below, then the K2015A is programmed, and responds, in exactly the same way as a Readykey K2015 Alarm Module.

- K2000-AM Front Panel
- K2100 Front Panel
- K1100 Front Panel
- K6000-AM Office Administration Kit
- K6000, K6000-MS

Specification

Enclosure

Material	1.2mm Epoxy coated mild steel
Dimensions	184mm x 148mm x 38mm, 7.2in x 5.8in x 1.8in

Environmental

Temperature	-10°C to +55°C
Humidity	0% to 90% RH (non-condensing)

Power Supply

Power for the K2015A is provided by the door controller reader channel.

Voltage	10.2 - 18 VDC
Current	30mA maximum

Cable

Type	6 conductor, multi-stranded, unshielded cable			
*Distance/Gauge	Up to 250m:	0.22mm ²	Up to 750ft:	24 AWG
	Up to 500m:	0.50mm ²	Up to 1500ft:	20 AWG
	Up to 1000m:	1.00mm ²	Up to 3000ft:	18 AWG

* Total Door Controller to Reader distance.

Inputs

Number	8
Type	4 state, supervised. Normal, Active, Open, Short

Relay Contacts

Number	8 - when using Readykey for Windows 4 - when using other systems
Current Rating	2A at 30VDC
Relay Type	Latching, with Common, Normally Open and Normally Closed terminals.
Relay Current	Each relay only draws a momentary pulse of current as it changes over.

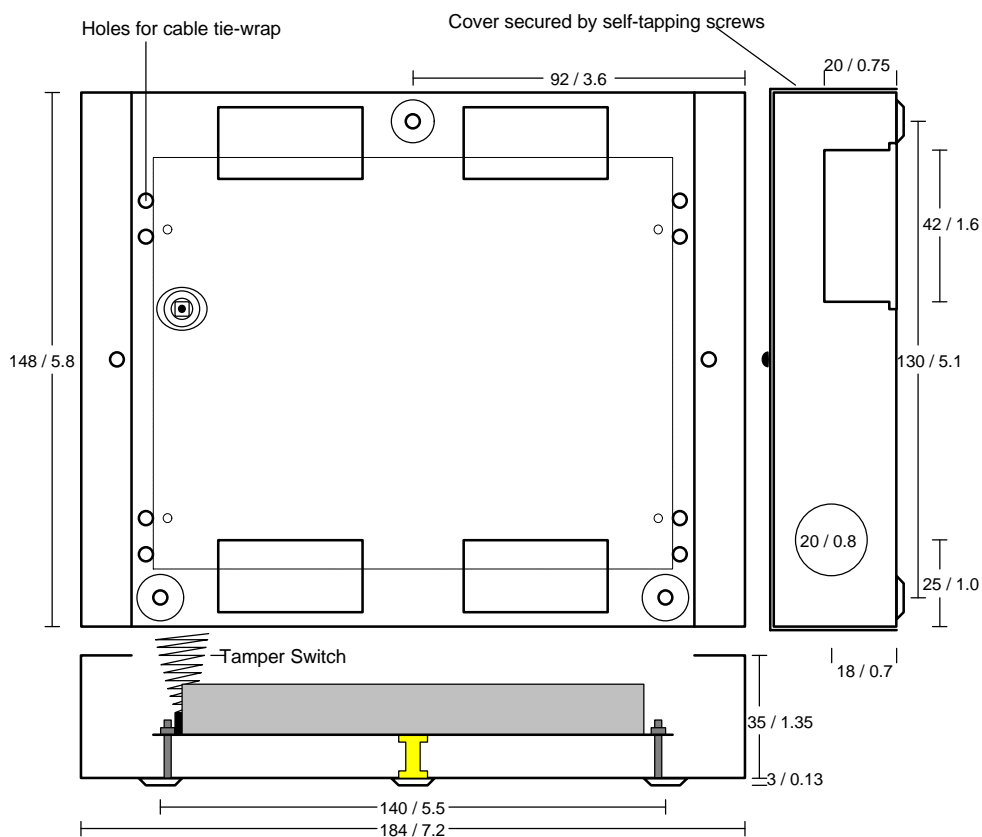
Installation

Location

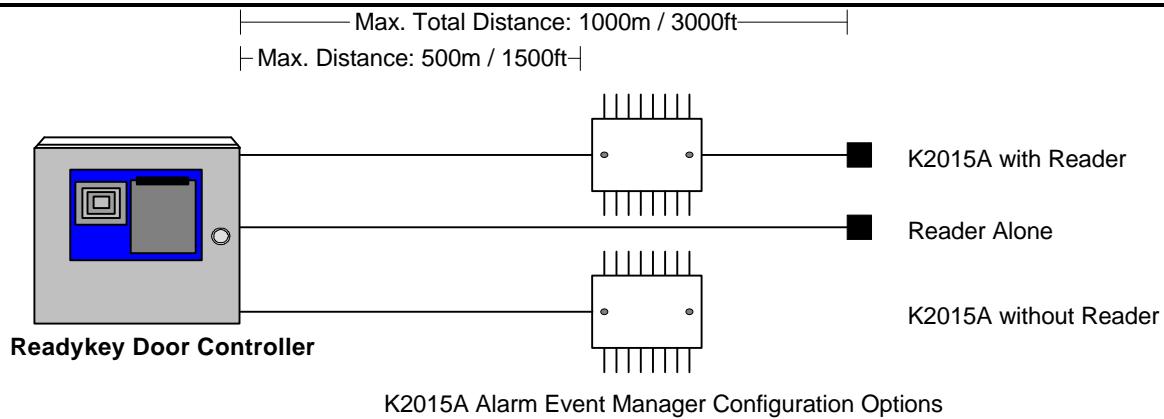
The K2015A may be located at any point between the Readykey Door Controller and Reader. However the cable distance between the Door Controller and K2015A **must be less than 500m/1500ft**

The diagram below shows mounting holes and cable entry facilities. Cable entry may be through the rear of the enclosure or surface mounted using trunking or conduit.

Use 3 screws suitable for the mounting surface. Use the top screw to attach the unit first, and then use the bottom two holes as a template.



Note: The K2015A may be connected to any Door Controller reader channel, with or without a Reader.



Connections to Door Controller and Reader

All connections are made to removable terminal blocks.

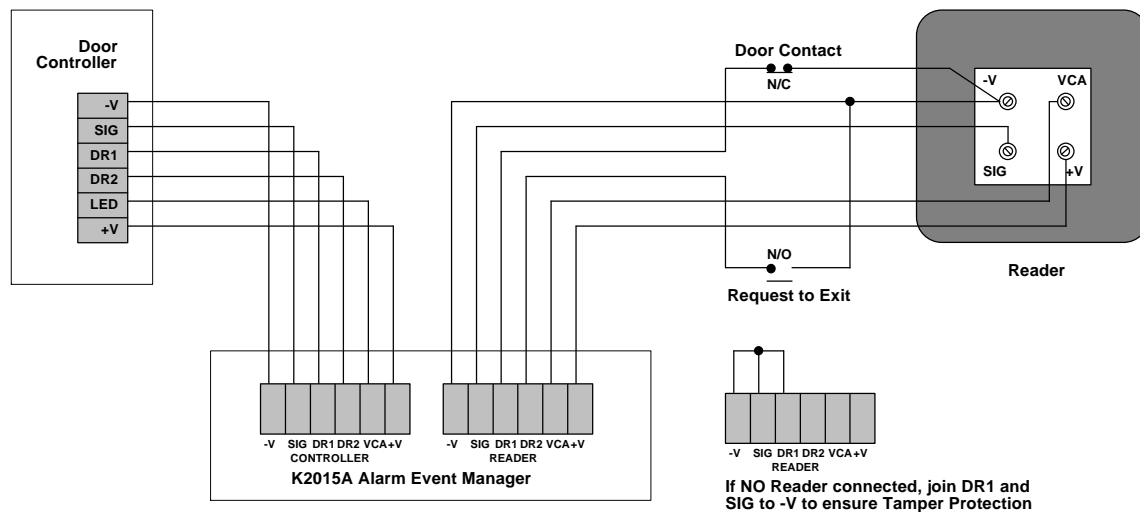
Note: ensure that the Door Controller cable is disconnected at the Door Controller before carrying out work on the K2015A.

Cable Specification

Type	6 conductor, multi-stranded, unshielded cable			
*Distance/Gauge	Up to 250m:	0.22mm ²	Up to 750ft:	24 AWG
	Up to 500m:	0.50mm ²	Up to 1500ft:	20 AWG
	Up to 1000m:	1.00mm ²	Up to 3000ft:	18 AWG

* Total Door Controller to Reader distance.

The Reader may be any type of Readykey Reader. This includes K2001-P PIN Readers which previously were not compatible with the K2015A Alarm Module. See the Door Controller Installation Manual for full details of the Reader wiring options.



Tamper Switch

Two options for enclosure tamper detection are provided.

- A spring switch that opens when the cover is removed.
- A pair of terminals that may be taken to an external, normally closed tamper switch.

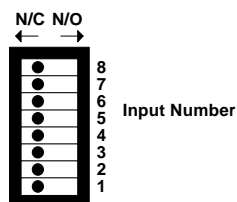
If both of these contacts are open then the K2015A will indicate a Tamper Alarm. To inhibit tamper reporting completely, connect the TAMP terminals together.

Note: In order to detect enclosure tamper, door monitoring **must** be set from the administration system. This will require a Door Open Time to be entered for the reader channel. To avoid alarm conditions when no reader is connected to the K2015A, the DR1 and SIG terminal of the reader connector must be connected to -V at the reader connector of the K2015A.

Inputs

There are 8 supervised inputs available on the K2015A.

The detectors may be either Normally Closed or Normally Open. The type of detector is set using the switch bank on the left of the circuit board, below the tamper switch. If the switch is to the left (factory setting) then the detector is Normally Closed, if to the right, Normally Open.



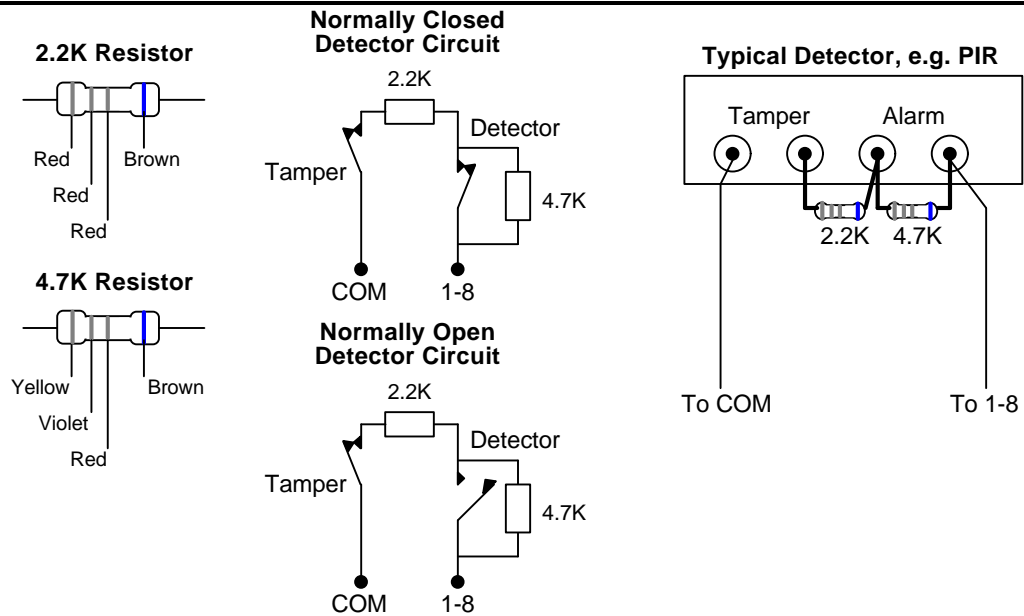
Two resistors are used to enable 4 different states to be detected, depending on the position of the detector and/or tamper switches. A 4.7K resistor is connected across the detector contacts, a 2.2K resistor is connected in-line. This gives a resistance (and voltage) on the detector loop corresponding to the various possible states as follows:

State	Resistance (Ω)	Voltage (VDC)
Short	0-1.5K	0 - 1.25
Normal *	1.5-3.1K	1.2 - 2.0
Active *	3.1-18.6K	2.0 - 4.0
Open	over 18.6K	over 4.0

* When using Normally Closed detectors. For Normally Open detectors these states are reversed.

Note: It is possible to put up to **Three** Normally Closed detectors in series. This will produce an Active condition if any one, or more, detectors are activated. A Normal state will return when all the detectors close. However, only **One** Normally Open detector may be used on each input.

The diagrams below show the two types of resistor supplied with the K2015A, the detector circuit diagram and a typical detector such as a PIR.



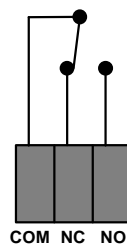
When using detectors that require power, a separate power supply should be used. The only power available at the K2015A is the 18v DC supply from the Door Controller reader channel. The power available from this output is limited and should not be used for providing power to detectors.

Note: Any unused inputs should have a 2.2K resistor across the COM and Input number. This will mean that the input will always report as 'normal'. This is useful when diagnosing faults.

Relay Outputs

Note: Relays 5 to 8 are only available to systems administered by Readykey for Windows.

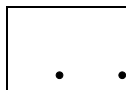
Each relay (note that they are numbered from the right) has a Common (COM), Normally Closed (NC) and a Normally Open (NO) contact. When a relay is activated the contact changes over from NC to NO. For how long the relay stays activated, or if there is any delay or time limit depends entirely on the type of Door Controller and Administration System being used.



You should consult the documentation for the Door Controller and Administration System being used for full details of available Relay functions.

Testing

A diagnostic facility is built in to the K2015A. This is used by pushing the button viewing the 2 digit display. The status of each input, the tamper switch and each relay can be determined.

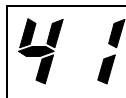


Normal Display: Both decimal points should flash once per second.



To Test the Input Status:

Press test button. The display will show an input number (1-9) with its status (0-3), press button again to display the next input number. Input 9 is the Tamper status.



Input Status codes are: **0** Normal, **1** Active, **2** Short, **3** Open.

Tamper (Input 9) Status Codes are:

0 No Tamper, **1** Reader Tamper, **2** Case Tamper, **3** Both Tampered



Examples (left) show:

10 - Input 1: Normal 41 - Input 4: Active 92 - Tamper: Case

Using the test button you can check each input in turn. A correctly wired detector should show a status of 0. When activated the status should change immediately to 1 - and return to 0 when the detector returns to its normal state.

A state of 2 (short) means the input is short-circuited, a state of 3 means the input is open circuit.

Software Features

The functions available from the K2015A depend entirely on the combination of Door Controller and Administration System. The combinations break down into 3 Groups:

1	K2000-N Door Controllers	
	Administration System	All
2	K2100/K1100 - without Readykey for Windows	
	Administration System	All, excluding Readykey for Windows
3	K2100/K1100 with Readykey for Windows	
	Administration System	Readykey for Windows only

K2000-AM, K2000-N Door Controllers

The K2015A behaves exactly as the previous K2015 Alarm Module. However please note the following:

- Detectors should still be wired as described here using the two resistors. In this case any change of state **from** Normal will be treated as an alarm condition.
- Only the first **4** relays are available.

K2000-AM

Use the MR (responses) and MS (sensors) commands to program the K2015A either on the Master (K2000-AM) or Slave (K2000-N) Door Controllers.

K6000-AM, Office Administration Kit

Select **3 Alarm Functions** from the Main Menu. Use **2 Monitoring Responses** and **3 Monitoring Sensors** to program the K2015A either on the Master (K2000-AM) or Slave (K2000-N) Door Controllers.

K6000-SS, K6000-MS w/K2000-N

If using version 2.6 or above you should first ensure that the Alarm Sensor Record type is set. This is found from the Main Menu in **8 System Configuration 8 Installation Configuration, 1 PC Configuration, 9 Set Alarm Sensor Type** This should be set to **K2000-N Sensor Records**

Select **Alarm Functions** from the Main Menu. Use **2 Monitoring Responses** and **3 Monitoring Sensors** to program the K2015A on the Slave (K2000-N) Door Controllers.

If you have a mixture of K2000-N and K2100/K1100 Door Controllers on the system,. then make sure you have upgraded the K6000 PC software to Version 2.5 or above. For programming K2100/K1100 Door Controllers see the section below.

Readykey for Windows

Readykey for Windows allows you to state the type of each Door Controller and Alarm Module (K2015 or K2015A). Provided this is done correctly then only the facilities appropriate to that combination of devices will be allowed.

K2100, K1100 - non Readykey for Windows

When the K2015A is connected to a K2100 or K1100 Door Controller it behaves as if a K2015 Alarm Module. However note the following points:

- Only the first **4** relays are available.
- An input can activate a relay on any K2015A on the same Door Controller (except Relay 4 on the 4th channel)
- Each relay can be programmed to respond to a System Event, or to operate according to a Time Profile.

K2100 - Master Controller

Use the MR (responses) and MS (sensors) commands to program the K2015A inputs either on the Master or Slave (K2100/K1100 Slave or K2000-N) Door Controllers. Use the RE command to program the relays to operate according to System Events or Time Profiles.

K6000-AM, Office Administration Kit

Note: It is not recommended that a K2100 or K1100 is used as part of a K6000-AM Office Administration System, if you intend to attach K2015 Alarm Modules or K2015As. See: *Using Binary Programming Tech Note*

K6000-SS, K6000-MS

If you are using K2100 Door Controllers on a K6000 system and wish to use K2015 Alarm Modules or K2015As, then you should upgrade to Version 2.6 or above.

You should first ensure that the Alarm Sensor Record type is set. This is found from the Main Menu in **8 System Configuration 8 Installation Configuration, 1 PC Configuration, 9 Set Alarm Sensor Type** This should be set to **K2100 Sensor Records**

Select **Alarm Functions** from the Main Menu. Use **2 Monitoring Responses** and **3 Monitoring Sensors** to program the K2015A on the Slave (K2100) Door Controllers. Relay programming is included in the Monitoring Sensors screen.

K2100/K1100 Door Controllers with Readykey for Windows

The full potential of the K2015A Alarm Event Manager is realized when used with Readykey for Windows. This includes:

- All 8 Relays are available for programming.
- Tamper (Open Circuit) and Trouble (Short Circuit) states are reported, along with Restorals.
- A wide range of system events can be used to activate Relays, as well as Time Profiles.

Ensure that the type of each Door Controller is properly defined in **Installer:Door Controllers**, and the type of each Alarm Module is defined in **Installer:AlarmModules**. Only if this is done will all the correct features be available.

Note: as Readykey for Windows establishes all the inputs for a K2015 Alarm Module or K2015A when the record is added, you should ensure that all the K2015A inputs are terminated. This is described in the section above on Inputs.

