

Getting Started with the Alarm Octopus

Physical Connections

If this is your first time with the Alarm Octopus, consider getting to know the device on your bench. From experience, this is much nicer than trying to learn whilst on a ladder in a cupboard, trying to balance a laptop and protect it from falling onto the ground.

Regardless of where you do it, hook up at least one wiegand reader. By default the board assumes that any wiegand readers operate on 12V DC. Check the manual if this is not the case. The power and ground, along with the D0/A and D1/B connections. In fact, the reader doesn't need to be powered by the board - it just makes install easier. The LED, buzzer and switch connections are optional.

Now comes to connecting up the OSDP port. make sure that you supply the board with 12V. This can come from the upstream alarm system, or from a local supply. Just don't connect both. If the wiring between this board and the alarm is particularly long, a 120 ohm resistor might be needed between the A and B connections on the OSDP port. In most cases, this will not be needed.

When you power the board some of the LED's should light up. At a bare minimum the STATUS LED should flash a few times. Depending on what mode the LED is in, this LED might not be flashing after that. Normally the RX light will be lit as well.

Laptop Connection

Configuring the board is done via USB. You will need a MicroUSB cable to plug into the board. We do not supply a cable as most people already have one, and we don't want to increase the amount of e-waste by supplying cables that people dont need. Having said that, if things are not working, make sure the USB cable is actually a USB cable, and not just a cable to charge your phone. Some MicroUSB cables only supply power and don't have data pins.

When plugging in your laptop, we generally advise you not to have your laptop on charge. Although very rare, we have heard of alarm cabling issues where the earth is not really earth, and has the potential to damage the USB port on your laptop due to a weird earth loop. The simple solution is to just not charge your laptop whilst configuring the device.

Serial Connection

The USB port on the device is set up as a Serial Port connection. At this stage, you will need to use a terminal emulator program to connect to the device. CoolTerm is great under MacOS. Under Windows, TeraTerm or Reakterm might suit your needs. Another alternative is to use <https://webserial.io/>, but a word of warning. It needs internet access, and does not work on all web browsers. Unfortunately it definitely does not work on Safari under MacOS.

The connection settings for USB are 115200 8N1. No handshaking either. In most cases, you should only need to set the 115200 speed.

When you connect with whatever serial terminal emulator you use, you should get a command prompt. You might need to press the enter key a few times for it to come up.

Logging In

The first thing you will want to do is log into the hardware. To do this, type the `serial` command followed by the enter key. The serial number is your default password. To log in, type `password` followed by a space and then the serial number. You now have some options. You can change the password by typing `password set` followed by a space and then your preferred password. If you don't want a password, you can type `password set blank` and no password will be needed. If you change the password and want to go back to using the serial number, type `password set serial`.

The console will lock after about 15 minutes inactivity.

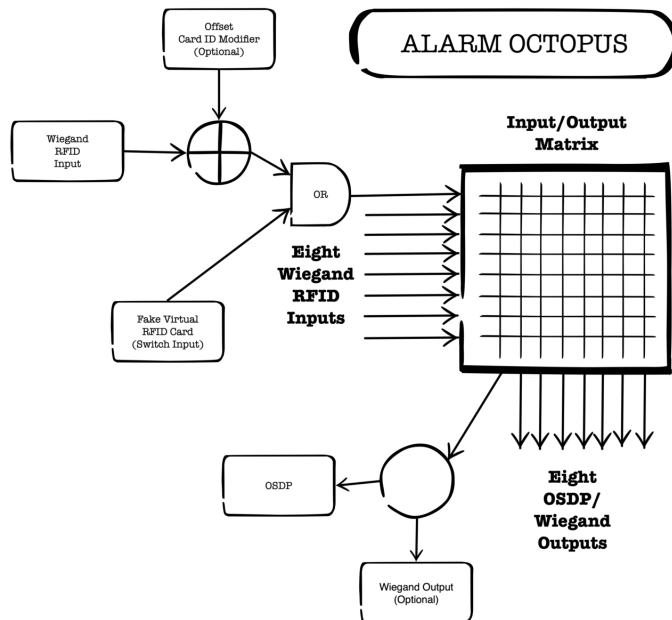
Using an RFID card as a password

At this stage you may decide that using a password is a pain. If so, hook up a reader whilst logged in and badge an RFID card on any connected RFID reader. The serial number of the card will be reported on the screen. In order to use this instead of a password, enter the command `master` followed by a space and then the card number.

You should then test the card again. A message should come up saying that the master card has been used. This card can now be used instead of the password. Of course, the password will still work.

Actually Configuring the Unit

Now that the password has been set, it comes time to configure the unit. Before starting with configuring the unit, it is a good idea to understand the information flow through the device, and the options. We have produced a diagram, but in many ways, it assumes you have some idea what is going. As noted elsewhere, the board takes inputs from up to eight weigand devices and sends them to up to eight OSDP devices. You can also configure it so that eight buttons act as cards. RFID card numbers can also be modified, but you generally won't need to worry about that. And finally, wiegand ports can be configured as outputs if you want to use the hardware more to combine wiegand readers into an existing system.



You can configure the device using commands, just like changing the password. This is OK if the change is simple, but gets a lot more difficult with bigger installations. In order to help there, we have developed a web page to design your install. Even better, this web page can be saved to your laptop so you don't need internet access on site.

ADD LINK HERE

You have two options here. You can either read the manual, and work things out from there. The other option is to use our helper web page. The good thing is that this web page doesn't need internet access and can be saved onto your laptop for future use. It is important to update the page every now and then regardless as we intend to improve the page over time.

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Basic Configuration Items

The `enable` command is the first command that you should look at. You will likely want to enable all the wiegand inputs, and enable at least one OSDP port as well. Once enabled, you may need to set the OSDP addresses of each port. This is done with the `osdp` command. The `route` command can then be used to route wiegand readers to specific OSDP ports. By default, each wiegand port is routed to the corresponding OSDP port. For instance, this means that wiegand 5 is routed to OSDP port 5 by default. The one trick is that the the hardware must be restarted by power cycling or issuing the `restart` command whenever you enable or disable OSDP ports. The `enable` command can also be used place OSDP ports into install mode or secure mode. Ports are in install mode by default.

There are other commands, but these are the most important.

Cookbook

Basic Configuration

One Wiegand Input and One Wiegand Output

Wiegand port 1 active, routed to OSDP port 1, with an address of 0. The OSDP port is in install mode. The LED and Buzzer are active on the wiegand port.

```
enable wiegand 1 true # Enable Wiegand port #1
enable osdp 1 true # Enable OSDP port #1
enable led 1 true # Enable LED on Wiegand port #1
enable buzzer 1 true # Enable Buzzer on Wiegand port #1
enable install 1 true # Enable install mode on OSDP Poer #1
route 1 1 # Route Wiegand port 1 to OSDP port 1
osdp 1 0 # Set the OSDP address of OSDP port 1 to 0
```

Two sets of Wiegand inputs per OSDP port

Wiegand ports 1 & 2 routed to OSDP port 1, with address of 8, which is in install mode.

Wiegand ports 3 & 4 routed to OSDP port 2, with address of 9, which is in install mode.

```
enable wiegand 1 true # Enable Wiegand port #1
enable install 1 true # Enable install mode on OSDP Port #1
route 1 1 # Route Wiegand port 1 to OSDP port 1
enable wiegand 2 true # Enable Wiegand port #2
enable install 2 true # Enable install mode on OSDP Port #2
route 2 1 # Route Wiegand port 1 to OSDP port 1
enable osdp 1 true # Enable OSDP port #1
osdp 1 8 # Set the OSDP address of OSDP port 1 to 8

enable wiegand 3 true # Enable Wiegand port #3
enable install 3 true # Enable install mode on OSDP Port #3
route 3 2 # Route Wiegand port 3 to OSDP port 2
enable wiegand 4 true # Enable Wiegand port #4
enable install 4 true # Enable install mode on OSDP Port #4
route 4 2 # Route Wiegand port 4 to OSDP port 2
enable osdp 2 true # Enable OSDP port #1
osdp 2 9 # Set the OSDP address of OSDP port 1 to 8
```

Combining multiple Wiegand ports onto a single Wiegand output

Wiegand ports 5 & 6 combined and output on Wiegand port 7. OSDP for port 7 is disabled, but could be enabled at any time.

```
enable wiegand 5 true # Enable Wiegand port #5
enable wiegand 6 true # Enable Wiegand port #6
enable osdp 7 false # Disable OSDP port #7 - Not needed
route 5 7 # Route Wiegand port 5 to OSDP port 7
route 6 7 # Route Wiegand port 6 to OSDP port 7
output 7 8 # output any Wiegand on OSDP port 7 to Wiegand port 8
```

Configuring Button Presses

Assuming that ports are already configured, configure the hardware so that pressing the external buttons associated with Wiegand ports 3, 4 & 5 send fake RFID cards to their previously assigned OSDP ports. [34 Bits]

```
fake 3 035ae430e0
fake 4 035ccb8520
fake 5 035ae218c1
```

Disabling The Buzzer

You installed all the readers with the LED and Buzzer wired up. People are now complaining about reader 4 making too much noise, and you want to disable the buzzer, as far as possible.

```
enable buzzer 4 false # Disable buzzer
```

One OSDP Port Active

All eight OSDP Ports Active

Four OSDP Ports Active with two Wiegand Readers per Port

Advanced

Combining Wiegand Ports and Modifying The Results

Wiegand ports 1, 2, 3 and 4 are connected to an RF based FOB system where each FOB has four buttons. The receiver unit normally puts the same Wiegand code out one of four outputs depending on which button is pressed. Doing this would require four OSDP to be used on the alarm, and this comes with a significant cost. Therefore we want to feed the four outputs into a single OSDP port. But to do this, we need to modify the RFID code coming in from each button press. As a result, each button will have its own RFID code.

One product that has multiple wiegand outputs like this is the [ProKey 4 Channel Wiegand](#)



Receiver.

Some configuration will be needed in the alarm. First, create four user groups, one for each type of button. Then create four users for each FOB, one for each button. Assign the RFID code for each button to the appropriate user. Finally, create a series of four automations of the form that if an RFID comes in and is valid for the group to perform some action.

Configuration In The Alarm

Users with RFID codes assigned to each: User1_Button1, User1_Button2, User1_Button3, User1_Button4 User2_Button1, User2_Button2, User2_Button3, User2_Button4 User3_Button1, User3_Button2, User3_Button3, User3_Button4

Groups with Members Group 1: User1_Button1, User2_Button1, User3_Button1 Group 2: User1_Button2, User2_Button2, User3_Button2 Group 3: User1_Button3, User2_Button3, User3_Button3 Group 4: User1_Button4, User2_Button4, User3_Button4

Automations If RFID is Valid AND user is a member of Group 1 THEN Arm Alarm If RFID is Valid AND user is a member of Group 2 THEN Disarm Alarm If RFID is Valid AND user is a member of Group 3 THEN Arm Alarm and Close Garage If RFID is Valid AND user is a member of Group 4 THEN Disarm Alarm and Open Garage

```
offset 1 0000000000
offset 2 1111111111
offset 3 2222222222
offset 4 4444444444
```

Enabling The Relay

THIS DEALS WITH A FUTURE PRODUCT RELEASE, BUT IS BEING INCLUDED FOR COMPLETENESS

Some versions of the board have relays for controlling door strikes. These relays DO NOT appear in the alarm system. To use them, you need to enable relays for the OSDP port, and then configure the alarm system. On the alarm system, you need to configure the RFID reader on the OSDP port to have its LED follow the 'Door Status'. This will cause the door to unlock in accordance with the system rules for unlocking doors.

Please note that this functionality is experimental and may not work with all alarm systems.

The screenshot displays a configuration interface for an OSDP reader. It is divided into two main sections: 'General' and 'Reader Programming'.
In the 'General' section, the 'Name' field is populated with '3rd Party OSDP Reader 7 (S/N 64295)'. The 'Notes' field is empty.
The 'Reader Programming' section contains several settings:
- 'Reader Type' is set to 'Generic OSDP'.
- 'Provide Door State Feedback' is checked.
- 'Provide Area (Same Side) State Feedback' is checked.
- 'Provide Area (Other Side) State Feedback' is checked.
- 'Status LED to Follow' is set to 'Door State'.
- 'Keypad Area To Control' is set to 'None'.
- 'Reader Address' is set to '7'.
- 'LED Colour' is set to 'Blue'.
- 'Disable Reader Lockout' is unchecked.
Each setting has an information icon (i) to its right. Below the 'Reader Programming' section is a 'Misc' section, which is currently empty.

```
enable relay 1 true # enable the relay on port 1
```