

## Installation Instructions



Scan for help  
getting started

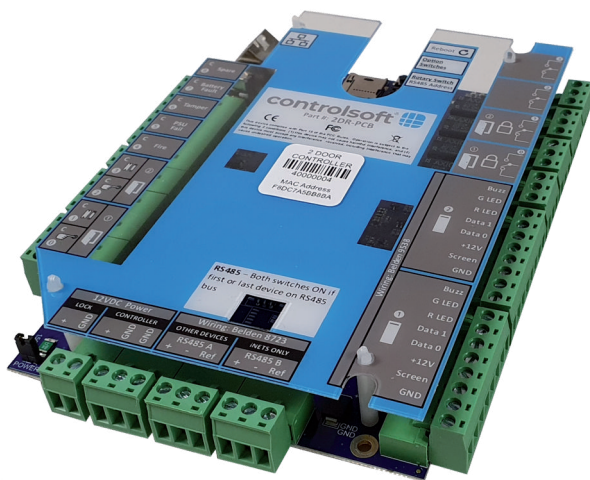
**iNet™ 2DR**

## Access Control Unit

Part Codes: 2DR-PCB

2DR-ACU

2DR-POE



## This device is configured for DHCP.

To locate this device in Identity Access, go to “Setup” and “Controllers”, then click the magnifying glass icon. Once found, the controller can be identified by its MAC address (e.g. F8:DC:7A:02:F6:94 which is also printed on the controller).

For reliability, you should subsequently assign a Static IP Address using the iNet Configurator, version 9.73 or above.

**controlsoft®** 

[www.controlsoft.com](http://www.controlsoft.com)

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## Introduction

The iNet 2DR Intelligent Access Control Unit from Controlsoft® provides a single board solution for one or two doors. The iNet 2DR controller is expandable up to 32 doors through the use of additional 1DR, 2DR and iNet Plus “Downstream” controllers connected to the RS485 bus.

All versions of iNet controllers are compatible with Controlsoft's Identity Access software which supports up to 12 doors / readers (without software licence), up to 64 doors / readers (with IA-PRO license) and beyond (with IA-ENT license)

The iNet 2DR controller is available as the following variants:

**2DR-PCB:** iNet PCB only

**2DR-ACU:** iNet in metal box with 12v 4A monitored PSU

**2DR-POE:** iNet in metal box with PoE++ PSU

For further information on product part numbers, please refer to the Controlsoft Product Reference Guide available from [www.controlsoft.com](http://www.controlsoft.com).

## Cable Specification

**For RS485 connections** between iNet controllers we recommend using **Belden 8723** (or equivalent). This is a 2 twisted pair cable (22AWG), with each pair screened. **NEVER** use twisted pair CAT5 or CAT6 cables for RS485 connections.

**Note: the RS485 ‘+’ and ‘-’ connections must be run on either side of the same twisted pair (e.g. Green and White), with a separate core (e.g. Black) used for the REF connection.**

**The total distance of the RS485 bus must not exceed 1000m.**

**From the iNet controller to Wiegand readers we recommend using**

**Belden 9538** (or equivalent). This is an untwisted 8 core cable (24AWG) with an overall screen. **Do not** use twisted pair CAT5 or CAT6 cables to connect readers to the iNet controller.

The maximum length of the Wiegand reader cable is 80m but if this distance exceeds 25m we recommend using a local power supply for the reader.

**Between the iNet Controller and Exit Buttons** we recommend 22 AWG or thicker gauge i.e. alarm cable. We recommend cables with spare cores in case a core breaks. **Do not** use CAT5 or CAT6 cables to connect exit buttons.

**Between the iNet Controller and Locks** we recommend 18 AWG or thicker gauge cable. We recommend cables with spare cores in case a core breaks.

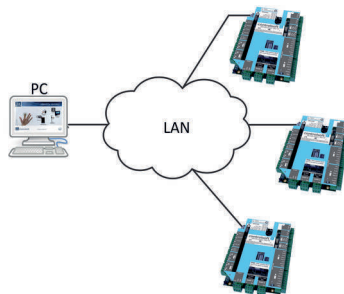
**Do not** use CAT5 or CAT6 cables to connect locks.

## Example Configurations

### Standalone iNet Controllers

Each iNet 2DR Controller has its own IP connection/address, and controls 1 or 2 doors.

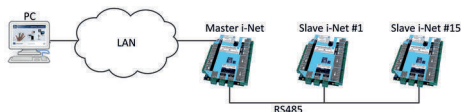
Communication to the PC is over the LAN.



**NOTE:** The iNet will continue to operate in “stand alone” mode if the PC is shut down or disconnected. Any non PC related events that subsequently occur are stored in the iNet and are automatically sent to the Identity Access software when the PC is back on-line.

### iNet to iNet

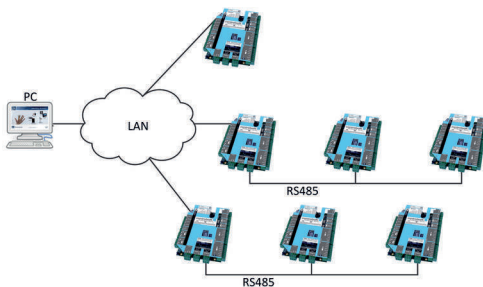
The Master iNet Controller is connected to the PC via TCP/IP. Additional downstream iNet Controllers are daisy-chained on the RS485 Port B data line, up to a maximum of 15.



Downstream iNets have fully distributed intelligence, so they continue to operate even if the RS485 data line is broken. When the RS485 data line is restored, the downstream iNets transfer events to the Master iNet which forwards them to the Identity Access software.

The RS485 bus must be wired in a daisy-chain topology as shown above and not a STAR topology. **NEVER** wire additional i-Net Controllers on a ‘spur’ to create a third end.

For maximum flexibility, the system can be wired as a combination of the above techniques, allowing system expansion for more than 16 doors



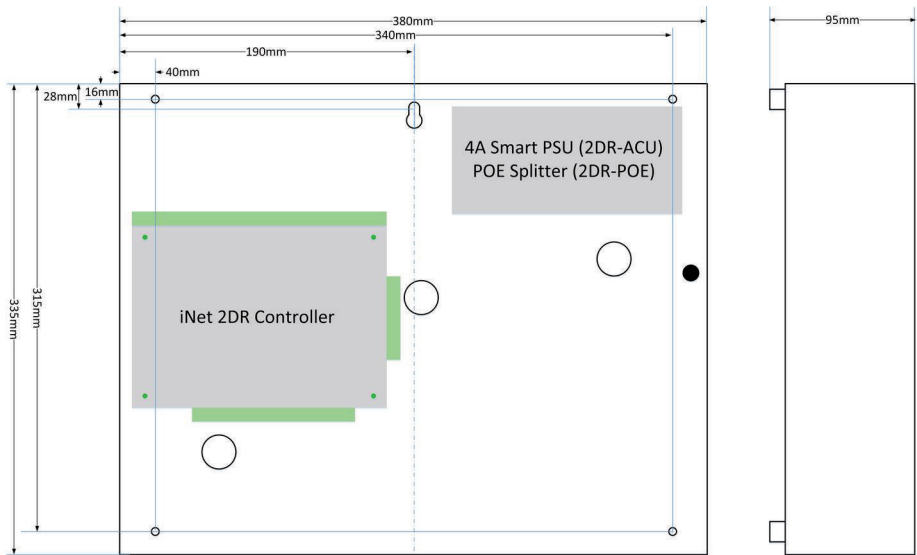
## Step 1: Fit the Box to the Wall

**NOTE:** This product is for Indoor use only.

If necessary, remove knockouts as required and fit grommets or glands.

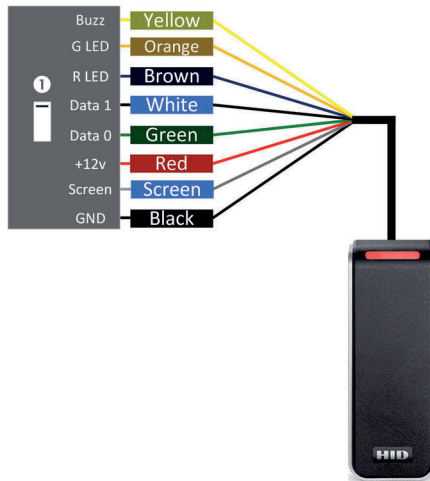
Using the base as a template, mark the wall and drill the required mounting and cable entry holes. Fit suitable wall fasteners in the mounting holes for the type of wall and fit the housing to the wall.

## Box Layout



Cable management points are provided to secure the cables.

## Step 2: Install the Readers



The iNet 2DR controller supports the industry standard Wiegand protocol. See Page 3 for cable requirements.

### Compatible Wiegand Readers

The iNet 2DR controller works with a wide variety of Wiegand readers, including:  
Controlsoft AC-1200, AC-1201, AC-1202 and AC-1800

HID Signo readers (20, 20K, 40, 40K)

HID iCLASS readers and multiCLASS readers (R10, R15, R40, RK40, RP10, RP15, RP40, RPK40)

HID iCLASS and multiCLASS Mobile readers (R10M, R15M, R40M, RK40M, RP10M, RP15M, RP40M, RPK40M)

Idemia Biometric readers (Sigma Wide, Sigma Lite, Sigma Lite Plus, Sigma Extreme, MorphoWave Compact, VisionPass)

The iNet 2DR is also compatible with other types of reader interface including:

Controlsoft AC-1100 (RS485)

HID Signo 20, 20K, 40 and 40K (OSDP V1)

iCLASS SE and multiCLASS SE readers configured for OSDP V1

Idemia Biometric readers configured for OSDP V1

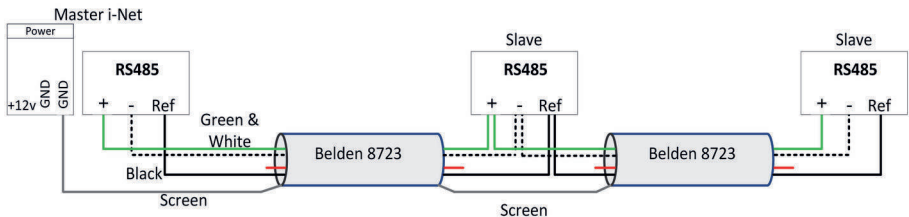
Aperio AH30 Hubs (RS485)

### Step 3: Connect the RS485 Bus

The RS485 bus must be wired with Belden 8723 or equivalent twisted pair screened cable. Please refer to the cable specifications on Page 3

The RS485 '+' and '-' must be on the same pair (example Green & White). The 'Ref' connection can use either of the other pair (usually Black). The cable screen **must** be connected to the GND terminal (0V) at the Master Controller ONLY, as shown (see also centre pages).

A correctly wired RS485 data line is shown in the diagram below.

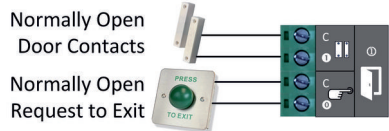


### Step 4: Connect the Inputs

The default function of each input is indicated on the iNet cover (for example, Input 0 = Request to Exit for Door 1). Using these defaults will make system configuration in the Identity Access software quicker by using the Door Wizard.

These defaults, however, are not mandatory as inputs are fully programmable so any door contact, REX etc. can be connected to any input. The function of each input is then programmed manually via the software. For further information, please refer to the Identity Access Software Manual, available at

[https://www.controlsoft.com/downloads/Identity\\_Access\\_v9\\_Software\\_Manual.pdf](https://www.controlsoft.com/downloads/Identity_Access_v9_Software_Manual.pdf)



### Step 5: Connect the Outputs

The default function of each output is indicated on the iNet cover (for example, Output 0 = Lock for door 1). Using these defaults will make system configuration in the Identity Access software quicker by using the Door Wizard.

All outputs are fully programmable so any maglock, strikelock etc. can be connected to any output. The function of each output is then programmed manually via the software.

A door lock takes its power from the splitter board above the PSU, through the door relay on the iNet controller, through the lock and back to the splitter board.

#### Important

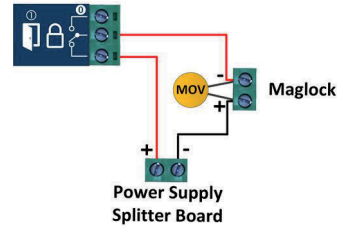
To prevent back EMF damaging the iNet controller, ALWAYS install a MOV (supplied) across the coil of every lock

#### Breakglass

To ensure a reliable method of egress in the event of an emergency, a "breakglass" should be fitted in conjunction with a fail open lock. The breakglass disconnects the 12V supply to the lock to remove power when activated.

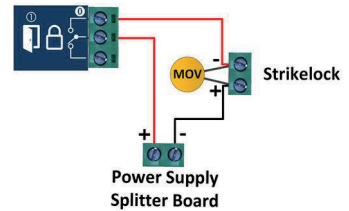
The diagram opposite shows how to wire in the breakglass.

**MOV suppression (included)  
MUST be fitted across all locks**



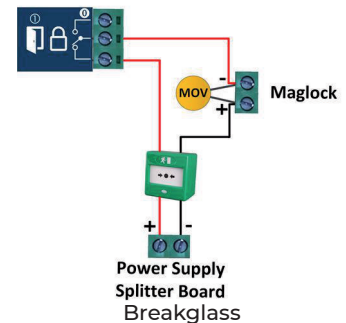
Fail Open (Maglock)

**MOV suppression (included)  
MUST be fitted across all locks**







Fail Closed (Strikelock)

**MOV suppression (included)  
MUST be fitted across all locks**





## Step 6: Select the Switch Settings

RS485 Switches	Option Switches
 <p><b>iNet controller is NOT</b> at the end of the bus</p>	<p><b>Switch 1</b> ON enables on-board readers OFF disables on-board readers</p>
 <p>iNet controller is at the end of the bus</p>	<p><b>Switch 2</b> ON to use Downstream iNets OFF to use other devices</p>
<p>When terminating an iNet, ensure that DIP switches 1 &amp; 2 on the first and last iNet are in the <b>ON</b> position. By default these are <b>OFF</b>.</p>	<p><b>Switch 3</b> <b>MUST</b> always be <b>OFF</b>. <b>Switch 4</b> <b>MUST</b> always be <b>OFF</b></p>
	 <p>On-board (Wiegand) Readers Enabled Master iNet connected to downstream iNets on Port B</p>
	 <p>On-board (Wiegand) Readers Disabled Master iNet connected to downstream iNets on Port B</p>

**NOTE: DO NOT touch the 2-way DIP switch next to the reset pushbutton. This DIP switch MUST always be set with Switch 1 = OFF and Switch 2 = ON**



Each device on the RS485 bus must be assigned with an individual bus address. The RS485 bus supports one Master iNet (address 0) plus up to 15 downstream devices, so the iNet has a 16 position rotary switch marked '0' to 'F'. The table below shows how the switch position relates to the address:



### RS485 Switch Settings

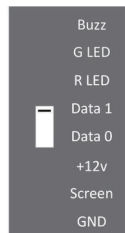
Rotary Value	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
485 Address	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Downstream iNets																

Any iNet connected to the LAN is a Master iNet, and must be given address 0. Downstream iNets must be given addresses 1 to 15 (1 to F).

**Always keep a record of the address for each device to avoid duplication.**

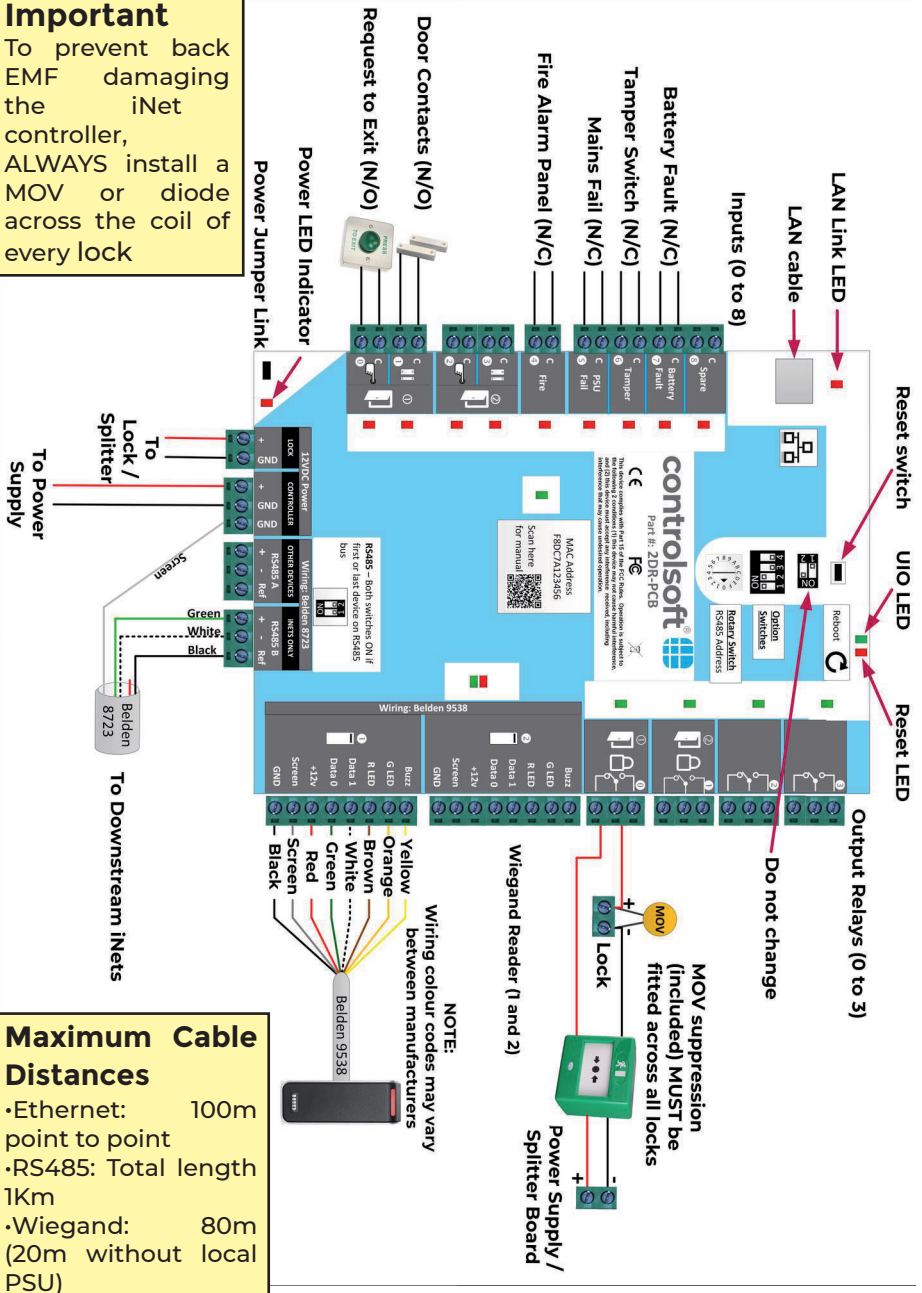
When the iNet is transmitting data on the RS485 bus, the red LED to the right of the Wiegand connectors will flash. When the iNet is receiving data, the green LED will flash.

Transmit data   
Receive data 



## Important

To prevent back EMF damaging the iNet controller, ALWAYS install a MOV or diode across the coil of every lock



## Maximum Cable Distances

- Ethernet: 100m point to point
- RS485: Total length 1Km
- Wiegand: 80m (20m without local PSU)

## Step 7: Connect Power

### 2DR-PCB:

Connect a power supply to the +12V and GND terminals on the iNet Controller as shown in the earlier wiring diagrams.

The power supply must provide a voltage greater than 10.5Vdc on full load and less than 15.0Vdc on no load.

### 2DR-ACU and 2DR-POE:

The power supply is pre-wired to the +12Vdc IN and GND terminals of the controller. Connect mains power to the PSU before connecting the controller terminal blocks. The power supplies are also connected to the controller to provide monitoring for AC Fail (or PoE failure) and for Battery Fault.

**REMEMBER TO PROGRAM THESE FUNCTIONS WHEN CONFIGURING THE CONTROLLER IN IDENTITY ACCESS.** This information is detailed in the Identity Access Software manual, available from

[https://www.controlsoft.com/downloads/Identity\\_Access\\_v9\\_Software\\_Manual.pdf](https://www.controlsoft.com/downloads/Identity_Access_v9_Software_Manual.pdf)

The current available from the PoE power supply depends on the type of PoE Switch it is connected to. A standard PoE Switch will provide 0.3A, a PoE+ Switch will provide 1.0A and a PoE++ Switch will provide 3.0A

It is strongly recommended that a standby battery is connected to the power supply capable of supporting the system when the mains supply is off.

NOTE: When all wiring is complete, secure the cables using the cable management points provided in the base of the metal box

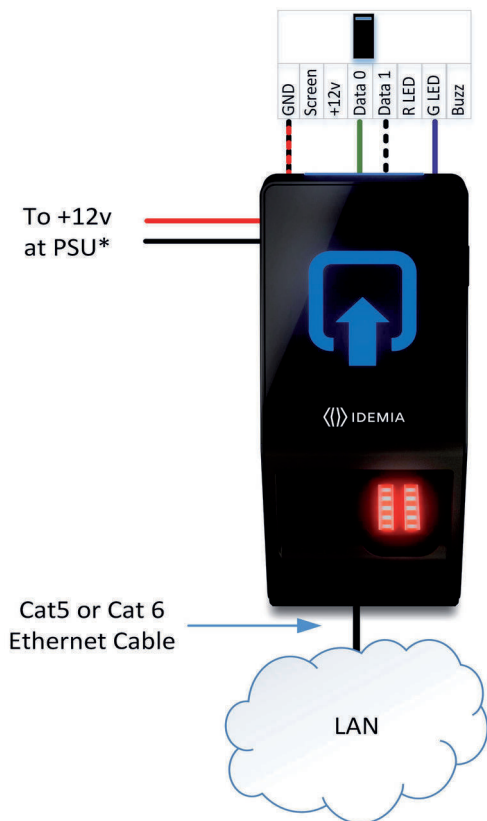
## Step 8: Check LED Indications

LED	Colour	Function
Power	Solid Red Off	The 12v supply is OK No 12v supply present
Relays	Solid Red  Off	Relay is energised (Normally Open & Common contacts are closed) Relay is de-energised (Normally Closed & Common contacts are closed)
Inputs	Solid Red Off	Contacts connected to input are closed Contacts connected to input are open circuit
RS485	Flashing Red Flashing Green Off	The iNet controller is transmitting RS485 data The iNet controller is receiving RS485 data No data on the RS485 bus
LAN port	Solid Red Off	The iNet controller is connected to the LAN the iNet controller is not connected to the LAN
UIO	Flashing Green Off	The internal software is running The internal software has stopped
Module	Flashing Green Off	The processor board is running The processor board has stopped

**RESET Button:** Press and release to reboot controller

Press and hold until Reset LED lights (approx 7 seconds) to change IP Address to 10.0.1.230

## Wiring for Sigma Series Readers



### SIGMA Lite, SIGMA Lite Plus, SIGMA, SIGMA Extreme Readers, MorphoWave Compact and VisionPass

Signal	Connection	Colour
Wiegand GND	20 Wiegand_Gnd	RED/BLACK
Data 0	14 Wiegand_Out0	GREEN
Data 1	16 Wiegand_Out1	WHITE
Green LED	17 Wiegand_LEDOUT1	BLUE
GND	2 Power GND	BLACK (Optional*)
+12v	1 Power +12v	RED (Optional*)

\* Sigma Series readers can be powered from a +12v source, the iNet's "LOCK" connector OR can be powered via PoE. **Never power Sigma readers from the iNet's reader port as it cannot supply the required current.**

Always use BELDEN 9538 or equivalent cable between the Sigma Series reader and the controller.

## iNet Expansion

### IOC Expander

The IOC Input/Output Expander provides 8 inputs and 8 outputs to further enhance the flexibility of the system. This expander board is particularly useful for the Elevator Control function.

The IOC Expanders are connected to the iNet controller using the RS485 Port A and provide the outputs necessary to control the elevator buttons. Identity Access software supports elevator control for up to 64 floors.

For further information on elevator control, please refer to the Identity Access Knowledge Base Article 202, available at

<https://desk.zoho.com/portal/controlsoft1/en/kb/articles/knowledge-base-202-configuring-elevators-in-identity-access-9>

**NOTE:** When an iNet is connected to one or more IOC I/O Expanders, it is not possible to use downstream iNets on the same channel at the same time.

For further information on the IOC Expander, please refer to the IOC I/O Board Installation Instructions, supplied with the product.

### OSDP Readers

OSDP (Open Supervised Device Protocol) Readers communicate with the iNet controller over RS485 Port A and are used to replace the on-board Wiegand readers for a more flexible connection. The iNet 2DR supports up to 8 OSDP readers. For further information on using OSDP reader, please refer to Knowledge Base Article 176, available at

<https://desk.zoho.com/portal/controlsoft1/en/kb/articles/identity-access-hid-osdp-guide>

### Aperio Wireless Locks

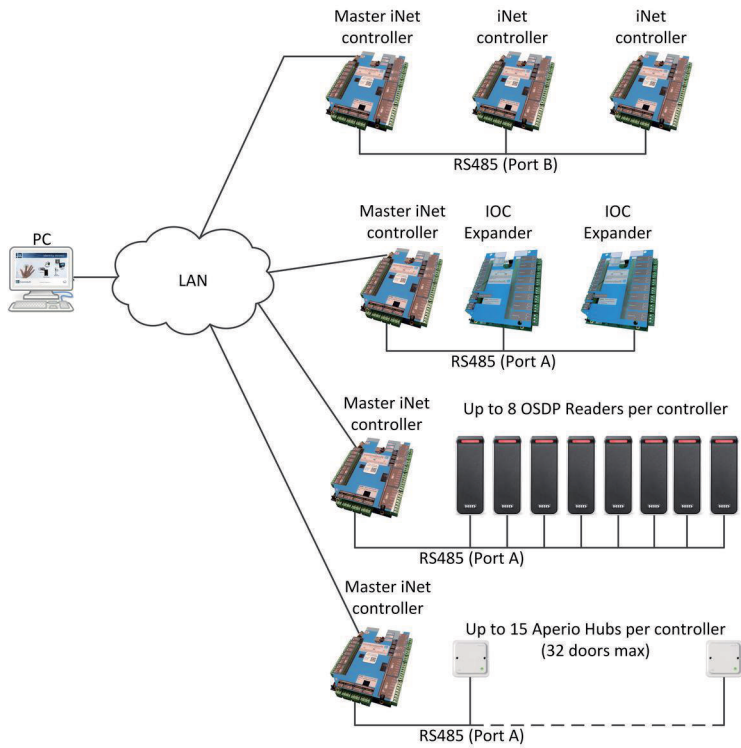
Aperio locks can be used to replace existing handles and cylinders to integrate them into the Access Control system. This can provide a quick and efficient way to upgrade door handles or cylinders with mechanical locks.

AH30 hubs are connected to the the iNet controller using the RS485 Port A. Each Hub can be paired with up to 8 wireless locks using the PAP software, up to a maximum of 32 locks per controller. For further information on using Aperio Locks, please refer to Knowledge Base Article 196, available at

<https://desk.zoho.com/portal/controlsoft1/en/kb/articles/setting-up-aperio-locks-with-identity-access-9>

For further information on configuring the above expansion options, refer to the IA Software Manual available at

[https://www.controlsoft.com/downloads/Identity\\_Access\\_v9\\_Software\\_Manual.pdf](https://www.controlsoft.com/downloads/Identity_Access_v9_Software_Manual.pdf)



## Frequently Asked Questions

Why are my RS485 devices not polling?	<ul style="list-style-type: none"> <li>• Ensure that the Master iNet Controller is connected to downstream iNet Controllers using 'RS485 Port B' OR to I/O Expanders using 'RS485 Port A'</li> <li>• Ensure that the 4 way DIP switch is set correctly.</li> <li>• Ensure that each device has a unique address on the bus, where address 0 is reserved for the Master iNet Controller and addresses 1 to 15 are used for downstream devices.</li> </ul>
How do I reset the IP address of the iNet controller?	There is a reset button close to the rotary switch, press until the RESET LED lights (approx 7 seconds), then release. The iNet then reboots and changes its IP address changes to <b>10.0.1.230</b> .
When the door unlocks the iNet controller becomes unresponsive	When the Lock changes state, it can generate back EMF, which can damage the iNet controller. Make sure that every lock is fitted with a supplied MOV, connected across the coil in the lock. <b>NOTE: Not fitting a MOV will invalidate your warranty</b>
How do I reboot my iNet ACU?	There is a Power Jumper located next to the Power LED on the controller. If this is removed the board will power down. Replace the jumper to power the unit up again. Alternatively, briefly press the Reset button

Further information is available from our FAQs at

<https://desk.zoho.com/portal/controlsoft1/en/kb/controlsoft/faq>

or our extensive Knowledge Base at

<https://desk.zoho.com/portal/controlsoft1/en/kb/controlsoft>

## Spares Pack

2DR-ACU and 2DR-POE are supplied with a spares pack containing the following items:

2 x MOVs (see page 8 and 10)

1 x Battery Leads

1 x Elmdene Instruction Manual

2 x Spade connectors

1 x Lid Fixing Screw

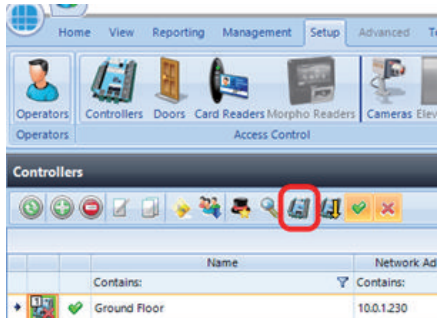
2DR-PCB is supplied with a spares pack containing 2 x MOVs (see page 8 and 10)

## Changing the iNet's IP Address

The iNet can be configured using the iNet Configurator program, which is installed as part of Identity Access (IA) but can also be download from [www.controlsoft.com](http://www.controlsoft.com) and installed as a stand-alone application. It is a useful application to have on a laptop, especially for configuring RS485 Downstream iNets.

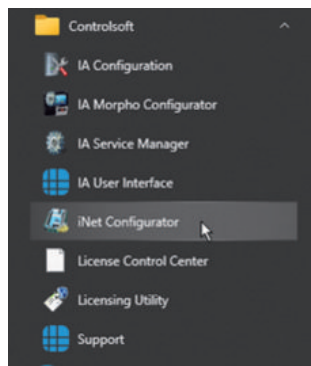
### To run iNet Configurator from within Identity Access

- Select the desired Master controller and click the "iNet Configurator" button highlighted opposite:



### To run iNet Configurator as a stand-alone application

- Click the windows button, followed by the "Controlsoft" folder, then select "iNet Configurator".  
The iNet Configurator will now run.



- Enter the iNet Configurator username and password
- and click the [Logon] button

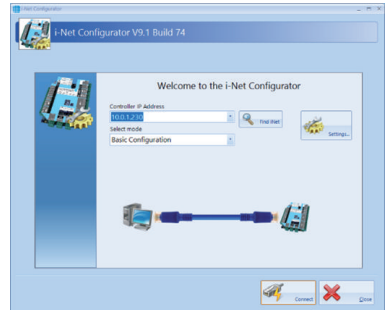
- NOTE: When run in standalone mode, iNet Configurator has its own username and password which may differ from the Identity Access credentials.**
- The default username is Admin and the default password is Password**





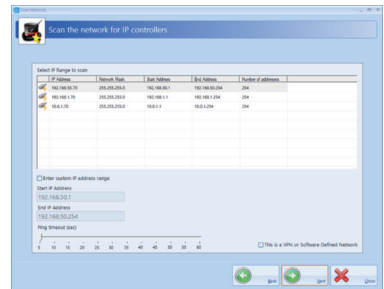
- Enter the IP Address of the iNet to be configured and click [Connect]
- If you are unsure of the IP Address, click the [Find iNet] button followed by [Next]

**NOTE: If run from within Identity Access, the IP Address will be filled in automatically**

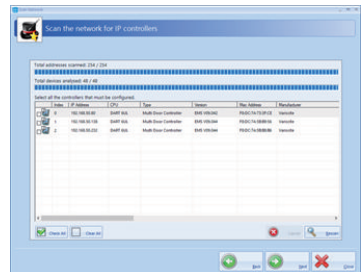


Select the range to be scanned in the upper window, or if you know the address to be within a specific range of addresses, select "Enter custom IP range" and enter the range to be scanned.

Click [Next] to start the scan

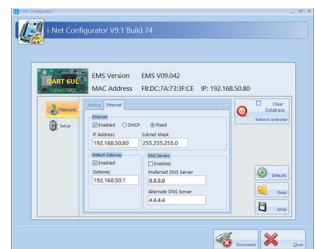


When the scan is complete, select the desired iNet from the list of controllers found and select [Next] followed by [Finish] and [Connect].



To change the controller's IP Address, enter the required IP Address, Subnet Mask, Default Gateway and DNS Server then click on [Write]

Finally, click [Reboot Controller] to apply the changes.



## Upgrading iNet Firmware

**NOTE: WHEN CONNECTING A 2DR CONTROLLER TO AN RS485 BUS, ALL CONTROLLERS CONNECTED TO THAT BUS MUST BE UPGRADED TO FIRMWARE VERSION V9.044 OR LATER. FAILURE TO DO THIS WILL CAUSE OPERATIONAL ISSUES.**

Although iNet firmware can be upgraded over the LAN, we strongly recommend that this is done locally at the iNet controller, by plugging a LAN cable directly between your laptop and the iNet. RS485 Downstream devices can only be upgraded locally.

### Upgrading firmware on a V3 iNet with an M501 or M502 processor board

Download the latest firmware from <https://www.controlsoft.com/downloads/>  
Save the downloaded folder (e.g. CSUpdate\_v09\_045.zip) on your hard drive.  
Open the update folder and double click the update\_ems program (e.g. update\_ems\_v09\_045.bat)

When prompted, enter the IP Address of the iNet controller and press [Enter]  
The iNet controller will reboot automatically when the upgrade is complete.

### Upgrading firmware on a 2DR iNet

Download the latest firmware from <https://www.controlsoft.com/downloads/>  
Save the firmware file (e.g. ems\_09.045r0\_cortex7t2hf-neon.ipk) in a suitable location such as the desktop

Open a web browser and enter the IP Address of the iNet 2DR. This will display the login page for that controller

**NOTE: When connecting to a controller for the first time, your browser may display a privacy error, just continue to the controller**

Enter the username and password for the controller. The default login details are:  
Username: inet-admin  
Password: inetadm01@!

This will display the main menu:  
Select [iNet Configuration]

Click on [Firmware Upload] to display the Upload screen

Click on [Choose File], to open file explorer.  
Select the firmware file saved previously, or you can drag and drop the file over the [Choose File] button.

Then click [Upload]  
Once the file has been uploaded successfully, click [Install]


The screenshot shows the 'i-Net Firmware Upload' web interface. At the top, it says 'i-Net Firmware Upload' and 'i-Net Version: 1.0.0 (1.0.0.0) - The new version!'. Below this, there's a 'Upload' section with a 'Choose File' button and a 'Upload' button. The 'Choose File' button is highlighted with a blue border. Below the 'Upload' section, there's a 'Install' button. At the bottom, there are three buttons: 'Clear Settings', 'Clear Status', and 'Clear Configuration'.

The controller firmware has now been updated.

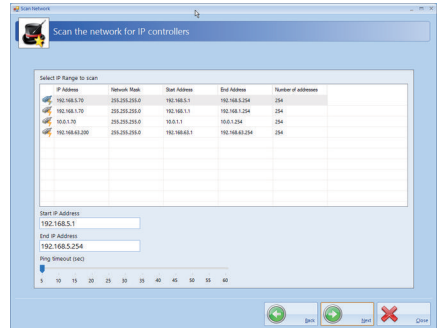
The screenshot shows the 'i-Net Firmware Upload' web interface after a successful update. The 'Upload' section now shows a green message: 'Firmware file 1.0.0 (1.0.0.0) uploaded successfully!'. Below this, there's a green message: 'Firmware file 1.0.0 (1.0.0.0) installed successfully!'. The 'Install' button is now disabled. At the bottom, there are three buttons: 'Clear Settings', 'Clear Status', and 'Clear Configuration'.

## System Configuration

The iNet controller leaves the factory configured for DHCP, so the router will allocate an IP Address when the controller is connected to the network and powered up. Controlsoft strongly recommend that the IP Address is subsequently changed to a fixed IP Address to maintain long term reliability.

To find iNets, select the "Controllers" screen and click the  button to run the Find Controller Wizard. Click [Next] to display the screen shown:

Select the Start IP Address and Stop IP Address to define the range to be scanned (if connecting directly to a single iNet these can be the same) and press [Next]. The software will then find all iNets in the defined range.




Tick the box in the left hand column to select the iNet controller/s to be added to the system, then select [Next], followed by [Finished]. The iNet controller/s will then be added to the list of available iNet controllers. The 'Summary' panel will show the iNet controller Status for the new iNet controller/s.

To give an iNet controller a name, double the relevant row, enter the name and click [Accept].

To change to a fixed IP Address, select the required controller in the "Controllers" screen and click the  button to run iNet Configurator.

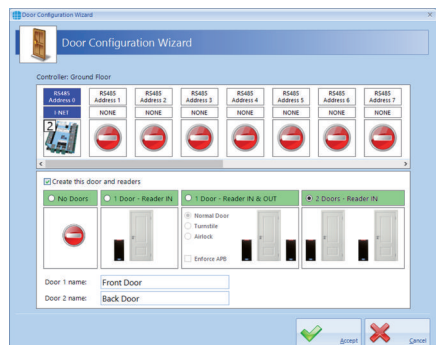
Click [Connect], select "Fixed", enter the required IP Address, Subnet Mask and Gateway, then select [Write]. Select 'Tools' in the side bar, then click on [Reboot Controller]. For further information on this, check the helpful videos on our YouTube channel <https://www.youtube.com/watch?v=ANCKpQIRKKQ&t=93s>

Click [Connect], select "Fixed", enter the required IP Address, Subnet Mask and Gateway, then select [Write]. Select 'Tools' in the side bar, then click on [Reboot Controller]. For further information on this, check the helpful videos on our YouTube channel <https://www.youtube.com/watch?v=ANCKpQIRKKQ&t=93s>

If the inputs and outputs have been wired as per the icons on the iNet cover, the doors and readers can be configured with the  button to run the Door Wizard.

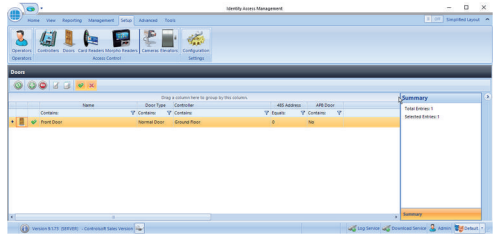
Select the appropriate option whether the iNet controller is connected to 1 door with an IN reader, 1 door with IN and OUT readers or 2 doors with IN readers.

Enter name/s for the door/s to be created and click [Accept].




Having created the doors, selecting the Doors icon in the ribbon bar will then display the doors on the system as shown opposite:

As can be seen, in this example, the Master Controller called "Ground Floor" now has 1 door called "Front Door". This name can be changed if required by editing the door properties.

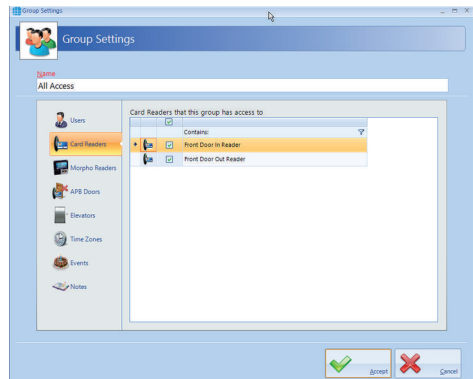


Checking the Card Readers window will display the card readers created by the Door Configuration Wizard.

Having configured the iNet controller, doors and readers, we next create a Group. Select 'Management' in the menu bar, followed by 'Groups' in the ribbon bar, then select the  button to create a new Group.

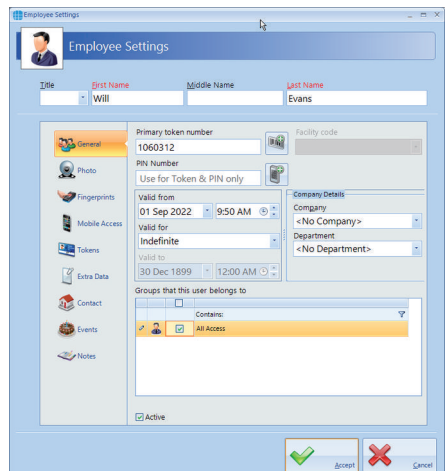
Give the Group a name, then select 'Card Readers' from the side bar and select all the readers that members of this Group will have access to.

Click [Accept] when done.



Finally, we will create an employee. Select 'Employees' from the ribbon bar and click the 'Add' button to display the screen shown. Enter a First Name and Last name, a Token Number and select a group for the Employee.

You can now test the system by ensuring that the employee can access the doors.



For further information on configuring an iNet system, please refer to the Identity Access Software Manual available at

[https://www.controlsoft.com/downloads/Identity\\_Access\\_v9\\_Software\\_Manual.pdf](https://www.controlsoft.com/downloads/Identity_Access_v9_Software_Manual.pdf)

## Specifications

<b>Electrical</b>	
Input voltage (controller)	9.5Vdc to 15.0Vdc
Input voltage (power supply)	90Vac to 264Vac, 50Hz to 60Hz
PCB Current (no load)	120mA
Relay contacts voltage rating	30Vdc
Relay contacts current rating	3A
Current available per reader port	500mA
Reader port voltage	9.5Vdc to 15.0Vdc
<b>Environment</b>	
Operating temperature	0°C to 55°C
Humidity	Up to 85% RH
Waterproof	Indoor Use Only
<b>Communication</b>	
Ethernet network speed	10 / 100 Mbps
Ethernet bandwidth requirement	200 Kbps
DHCP support	Yes (fixed IP recommended)
RS485 network speed	9600 Baud (Port A) 115,200 Baud (Port B)
<b>Features</b>	
Maximum Number of Cardholders	200,000
Maximum Number of Time Zones	63
Maximum door open time	1800 sec
Doors per iNet 2DR controller	1 or 2
Readers per iNet 2DR controller	2
Devices per RS485 bus	Master plus 15 Downstream
Doors per iNet 2DR using Aperio Locks	32
Events stored in iNet with server disconnected	250,000
<b>Dimensions</b>	
2DR-ACU and 2DR-POE	335(H) x 380(W) x 95(D) mm
2DR-PCB	175 x 135 x 25 mm

## Product Compliance

### FCC Compliance

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Controlsoft is not responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

# iNet Cover Pictograms

## Reset Switch

Press to reboot. Hold approx 7 seconds until, Reset LED lights to change the IP Address to 10.0.1.230



## Network Port

Connection to LAN



## Spare

Input for general use



## Battery Fault

Connect to PSU Battery Fault output



## Tamper

Used to monitor box tamper switch



## PSU Fail

Connect to PSU Mains Fail output



## Fire

Connect to Fire panel



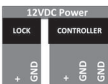
## Inputs for Door 2

Door Contact = 'C' and input 3  
Request to Exit = 'C' and input 2



## Inputs for Door 1

Door Contact = 'C' and input 1  
Request to Exit = 'C' and input 0



## Output for power to Lock

Use to supply 12v to the Lock

**Input for power from power supply**  
Use to connect +12v & GND from PSU  
Use spare GND for RS485 screen

## Option Switches

## DIP Switches

Use to configure the RS485 bus and on-board readers

## Rotary Switch

RS485 Address

## Rotary Switch

Used to define the address on the RS485 bus



## Relay outputs 2 & 3

Normally closed, common and normally open contacts for general use (e.g. Door Alarms)



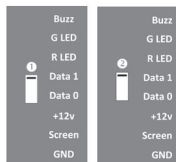
## Relay output 1 for Door 1

Normally closed, common and normally open contacts



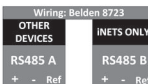
## Relay output 0 for Door 1

Normally closed, common and normally open contacts



## Wiegand inputs

Readers for doors 1 and 2



## Connection for downstream devices

Connections '+-' and '-+' must use the same twisted pair (e.g. Green and White with Black for REF). Always use Port B when connecting downstream INets



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# controlsoft®



intertek



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Information on all our products can be found on our website [www.controlsoft.com](http://www.controlsoft.com)

This product is not suitable for retail sale.

All warranties are invalid if this product is not installed by a trained technician.