Net2 classic quickstart guide

▼Paxton

Reader/keypad
(optional)

Fail closed
release
*

Reader/keypad

To 12V DC
power supply

All spare wires/screen
from CAT5/Belden 8723

Door contact switch
(held closed by door)

From previous
ACU

Exit button
Black/0V and Exit
(push to make)

To next ACU

Tamper switch
(optional)

(for Paxton exit buttons
GREEN and RED wires
go to reader terminals)

(Diagram of Net2 classic control unit with terminal labels)

Net2 classic
http://paxton.info/107
123456
CE 0889

Reader 1 terminals: Red 12V dc, Red LED, Amber LED, Green LED, Data/D0, Clock/D1, Media Detect, 0V out, Load, Data, Clock

Keypad 1, Keypad 2

Caution: For 12V d.c. connection of old 5V readers refer to instructions. For correct readers only.

Screen or spare cores from network cable

Network CAT5 cable coding: 1 White/Green, 2 Green, 3 White/Orange, 4 Orange

Rx, Tx, Relay 1, Relay 2, Exit, Contact, Tamper, PSU, OK, 5V, 12V

Reader 2 terminals (top): Clock, Data, Load, 0V out, Media Detect, Clock (D1), Data D0, Green LED, Amber LED, Red LED, Red 12V dc

Power: +12V, 0V
Relay 1: N.C., N.O., Com
Relay 2: N.C., N.O., Com
Alarm Output
Inputs: 0V, Contact, 0V, Exit, 0V, Tamper, PSU

* For a fail open lock (Maglock), the 0V loop wire is connected to the "N.C." terminal. (not the "N.O.")

This ACU has 2 reader ports and 2 output relays, but can control just one door. The configuration of one control unit per door greatly simplifies installation and is ultimately highly cost effective.

BEFORE CONNECTING THE READER.

Keypad 1 & 2 inputs are only used for 5V keypads. All other keypads are wired to the Reader ports.

To change a reader port voltage to 5V, move the red jumper(s) located beneath the wiring label to the 5V setting.

This product is not suitable for retail sale. All warranties are invalid if this product is not installed by a competent person.

RS485 data line

90% of installation faults are caused by wiring errors on the RS485 data line. Special attention to getting this right first time saves a lot of time and effort.

END OF LINE TERMINATION - 120 ohm resistors must be linked across each data pair at the beginning AND end of the data line. This can be done on many units with a switch or jumpers. If not, free resistors are provided with the converter. If the data converter is located at a point along the data line, termination will then be required in the two ACU's at each end of the line.

READER & DATA CABLE SCREENS.
- Data cable screens and spare cores MUST be connected throughout.
- Reader and keypad screens where provided, should be connected to the Black 0V terminal.
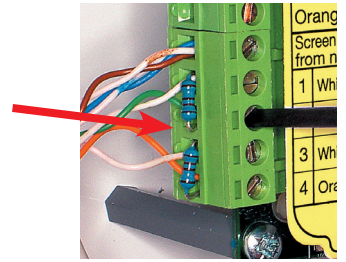
The data line must be wired in a single daisy chain. The data converter may be located anywhere along the data line. 120 ohm terminating resistors must be linked across each data pair at the beginning AND end of the line. This can be done on many units with a switch or jumpers. If not, free resistors are provided with the converter. The example below requires terminating at the RS485 converter and also the 3rd ACU at the end.
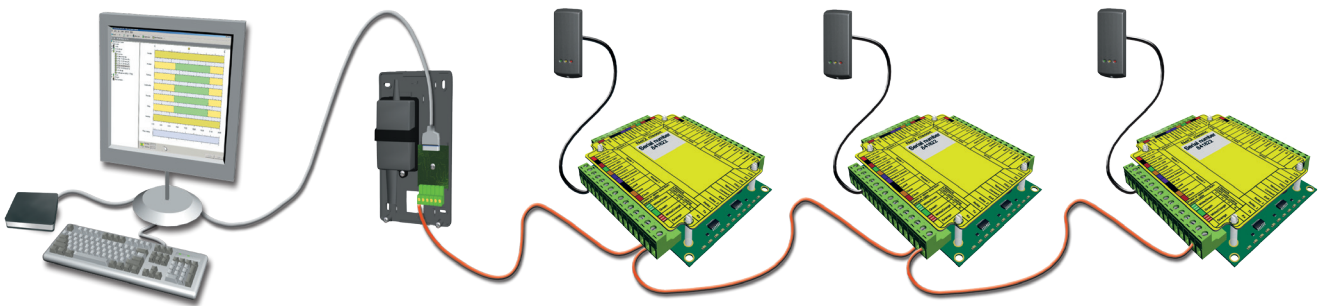
RS485 data line checks

Power down all TCP/IP, USB and RS232 converters (individual and Net2 plus).

✓ Check the resistance across each data pair is 60-80 ohms.

✓ Check that there are no data line to screen shorts.

✓ Check the screen of the data cable is continuous - this provides the 0V DC system reference.

Control unit installation

Wire the components to the Access Control Unit (ACU) as shown on the first page. This will include:

- Reader/Keypad
- Electric Lock
- Power supply
- Any other optional components

Press the exit button or in the absence of an exit button, short the 0V and exit terminals together. The lock relay LED will come on and the lock should release.

The reader's default indication has all the LED's on. Access granted is denoted with a single flashing Green LED, Access Denied is a single flashing Red LED.

PC Installation

The current specification for compatible PC hardware, network and operating systems is available on our website at the following link: http://paxton.info/720

1 - Net2 - Upgrading software.

Net2 software upgrades are available free of charge, either supplied on CD or from the Extranet. Net2 can be upgraded within the same revision or to the next full version (Note: It is not possible to upgrade directly from version v2 to v4 - you must first upgrade to v3.)
Upgrades can be run directly over the current installation; there is no need to uninstall the previous version.
It is recommended that an end user advise their installer before carrying out an upgrade.
Ensure the PC specification meets any new requirements.

2 - Readers/keypads not working.

- Software settings - Confirm that the settings of the reader or keypad are correct.
- Connections - Check the wiring of the connectors. Where possible, test this reader on the other port.
- Extended Cable - Belden 9540 should be used. (100 m maximum) Twisted pair alarm cable should
   not be used. To confirm that an extended cable is not at fault, wire the reader direct into the reader port.
- Supply voltage - Confirm that the voltage is within specification. (see table)
- User token - Confirm that the user token used for testing is OK by presenting it to a known working reader.
- Interference - Confirm whether the reader works when tested 'in hand' and not mounted on the wall. Ensure
   that readers are not mounted back to back or there is no interference from other local RF devices.

3 - Cannot detect ACU via TCP/IP.

1 - Ensure the TCP/IP interface has been detected in the Net2 Server Configuration Utility, and responds to a
    PING from the utility. A static IP address must be used for the interface.
2 - Restart the Net2 server.
3 - Make sure that the PC firewall allows the Net2 TCP/IP ports through. (See TCP/IP documentation)
4 - If the interface is responding, try a loopback test (See TCP/IP documentation)
5 - The Net2 data line should be checked for resistance readings, screen continuity, and screen shorts.

4 - Cannot detect ACU via a Serial Port comms converter.

1 - Confirm the comms converter is connected to the correct serial port and powered. A USB to Serial converter
    or PCMCIA card should not being used.
2 - Restart Net2 Server.
3 - Check the Net2 data line for resistance readings, screen continuity, and screen shorts.
4 - In the Configuration Utility, manually select the serial port and then restart the server.
5 - Test serial port.

5 - Net2 Workstations.

Net2 Workstation software allows more than one Net2 operator to connect into the same Net2 system at any one time. Connections can be established over most TCP/IP networks, including VPN through the Internet. Net2 Workstation software is included on the Net2 CD and is an option during installation. No addition license is required. Net2 Workstation software must be the same version as that running on the Net2 server.
Workstation software can also be installed on the server machine allowing it to view other Net2 servers on the network. Once Net2 software has been loaded, run the installation again choosing Workstation.
It is recommended that the number of concurrent connections be limited to five.

6 - Moving a V4 database to a new PC.

Ensure the new PC meets the minimum specification. All of the files containing the site-specific information in a Net2 system are stored in a single folder. The default location for this information is C:\Net2 Access Control.
 - **On the old PC.** Using the Net2 Server Configuration Utility, go to the Database tab and click the Create Copy button. This creates a copy of this existing database into a Zip file.
- **On the new PC.** Load the Net2 software onto the new PC. The version must be the same on both machines. Copy the Net2Database.zip file into C:\Net2 Access Control. Using the Net2 Server Configuration Utility, go to the Database tab and click Import Copy, browse to the Net2Database.zip in the C:\Net2 Access Control folder and click OK. Once completed, run the Net2 application to confirm all details have been transferred correctly. Disconnect the Net2 data line from the old PC and connect it to the new PC.
- **Custom Settings.** The settings held in the Configuration Utility are not transferred with the database. Details of any TCP/IP nodes, custom Wiegand configuration, etc. will need to be input manually on the new PC.

7 - ACU not responding or fails to be detected (Data line resistance check).

First power down the converter (RS232 or TCP/IP) and disconnect any ACU's that do not have a flashing OK LED. Using a Multimeter, measure the resistance across the White/Green and Green pair at one end of the network. A resistance of between 60 and 80 ohms is required. Repeat the test for the White/Orange and Orange pair. This is vital for a stable and trouble free installation.

8 - Fire alarm integration - Net2 Professional software must be used.

A voltage free normally closed contact from the fire alarm system should be wired across an ACU input (Contact/PSU/Tamper/Exit). The software for that ACU is then configured via the Fire Alarm Tab in the doors screen to select all the doors that this trigger signal will open.
Fail open locks will be required on fire doors. Break glasses should be installed to drop the lock power manually.

Software installation

Door name: Name the ACU.
Door open time: Set the door open time.
Unlock the Door during: Permanently unlocks the door while this timezone is active. - Should be set to 'At No Time' for normal user operation.

Reader 1: Settings for Reader 1 and Keypad 1 on the ACU.
Reader 2: Settings for Reader 2 and Keypad 2 on the ACU.
Alarm: Contains settings for the different types of alarm.
Codes: Valid codes can be viewed, added and removed. (Can only be viewed when a keypad is active).
Events: Shows the events for the control unit selected.

Name: Each reader can be named individually if required.
Reader type: Set the reader type, if applicable.
Keypad type: Set the keypad type, if applicable.
Token data format: Select the data type being used on the system. (New formats can be created).

Reader operating mode: Set the operating mode.
Timed operating modes: A different operating mode can be configured within a time window.

Reader action: Set the action required when access is granted.

Specifications		
Features	Min	Max
Number of Cards		10,000
Number of PIN's		10,000
Access Levels		250
Time Zones		64
Maximum door open time	1 sec	99,999 sec
Number of Codes		50
Doors per ACU		1
Reader ports per ACU		2
Readers per port		2
Keypads per port		2
ACU per data line	1	200
Data lines per PC	1	50
Data retention after total power loss	9 hours	
Events stored in ACU with no server connection		2,454
Electrical	Min	Max
Voltage	11V DC	15V DC
PCB Current (depending on activity)	110 mA	350 mA
Relay switchable voltage		24V DC
Relay switchable current		4 A
Alarm output current		1 A
Combined reader port output current		500 mA
Environment	Min	Max
Operating temperature - Battery limits	0 °C	+ 55 °C
Waterproof		No

Dimensions	Width	Height	Depth
	103 mm	118 mm	23 mm

CE