

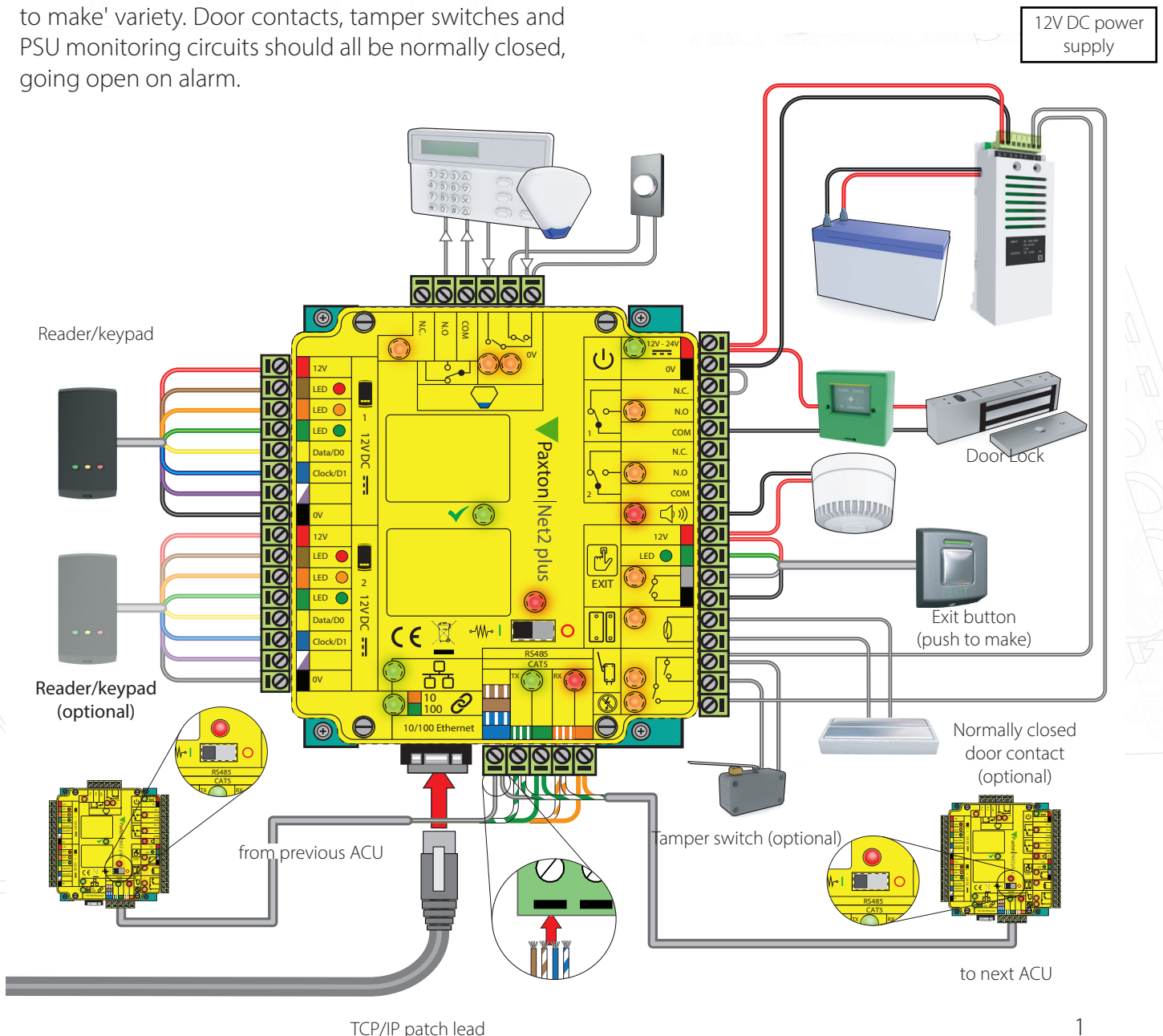
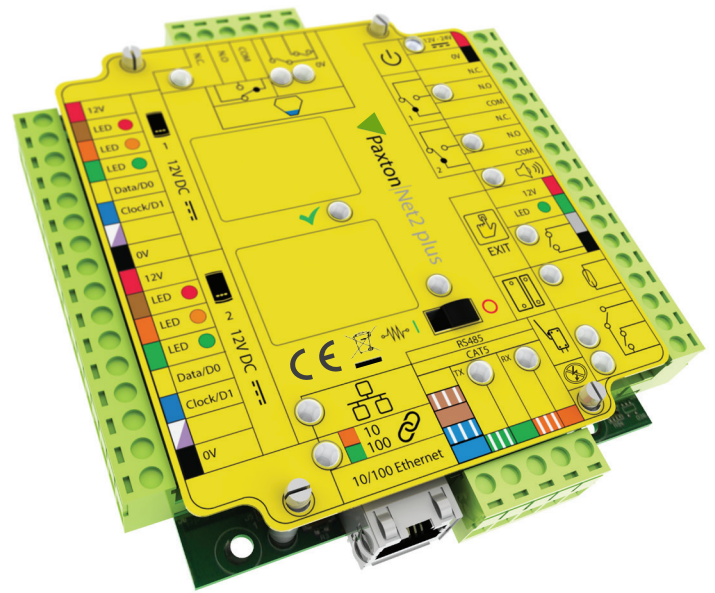
# Installing a Net2 access control unit

## Overview

The diagram below shows the general wiring layout for a Net2 plus ACU. Not all of the equipment shown needs to be installed on every door. For example, when using Timesheet it is only necessary to install a reader and the data connection.

The selection of ACU type and their method of connection to the Net2 server PC (TCP/IP, RS485, wireless, etc) can be combined in one system to meet the needs of any site layout.

Special attention should be paid to the installation of the lock to ensure correct operation, either fail open or fail closed. Exit buttons must always be of the 'push to make' variety. Door contacts, tamper switches and PSU monitoring circuits should all be normally closed, going open on alarm.



## Communication

By far the most common cause of problems with Net2 installations, is incorrect wiring of the data/network connection. When using an RS485 dataline, it is extremely important that the following simple rules are followed for each controller on the line and that the line is terminated correctly.



The data line must loop in and out of each controller using the same coloured cores for each unit. CAT5 colour codes are shown on the controller's wiring label. The controllers must be installed in one continuous daisy chain.



Any spare cores and the cable screen must be connected to the network screen terminal. This provides a common 0V reference for all of the controllers on the data line.



Termination resistors (120 ohm) must be linked across both data pairs 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 data converter. If the converter is located at a point along the data line, termination will only be required in the two ACU's at each end of the line.

## Net2 plus

A Net2 plus can connect to the Net2 PC using either a standard TCP/IP Ethernet RJ45 cable or an RS485 data line. This greatly increases the number of installation options available to the installer.

Net2 plus can also be used as the TCP/IP interface for a daisy chain of other Net2 plus or Net2 classic units.

A TCP/IP connection must first be detected using the Net2 Server Configuration utility in the same manner as a TCP/485 converter. When used on an RS485 data line, any required termination resistors are linked across the data pairs by a simple slide switch.

A dedicated Intruder Alarm connection is provided.

## Net2 nano

The Net2 nano is a wireless based access control unit. It connects to the central administration PC using Paxton proprietary and secure wireless technology (Net2Air). Net2 nano control units can be mixed with other Net2 control units and so can be added to existing Net2 installations. The unit has a dedicated 12V DC lock output (incorporating an integrated diode), an Alarm output and a separate voltage free relay. Exit buttons, door contacts, tamper switches and mains failure alarms can all be connected.

Control units communicate to the PC via a Net2Air bridge. These come in USB and Ethernet variants so a site may be covered by several bridge units at different locations.

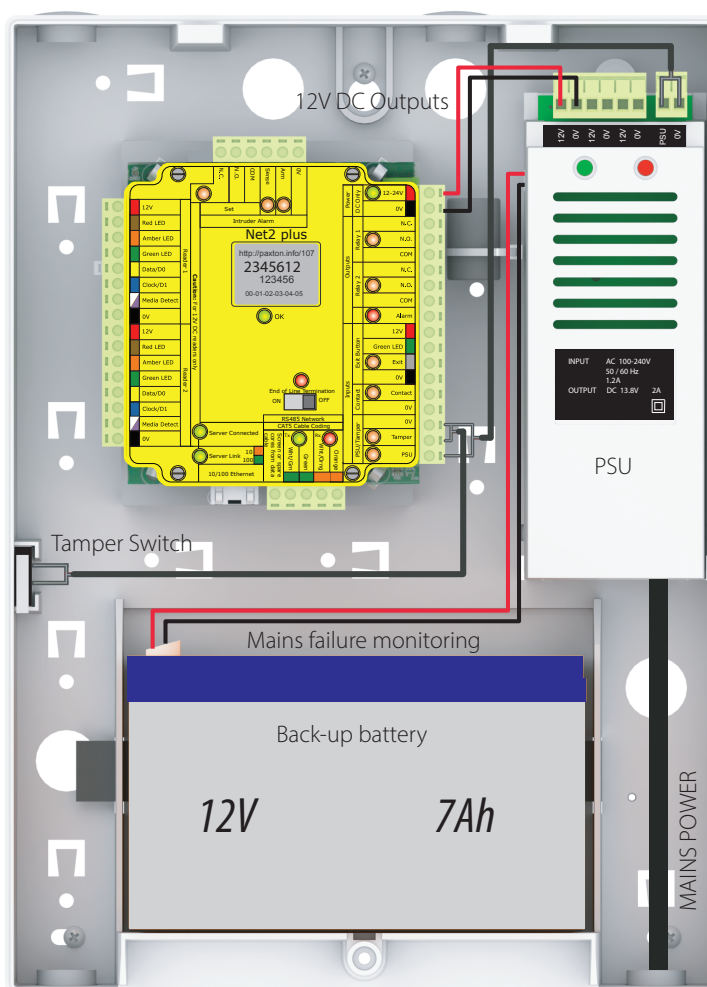
The Net2Air protocol is based on the standard known as IEEE 802.15.4. It operates at 2.4GHz and can co-exist with wireless LAN networks and other devices using this frequency.



## Installation of an ACU in a PSU enclosure

The best way to install a Net2 ACU is in the specially designed Paxton power supply enclosure. This unit contains a 2A 12V DC power supply, a charging circuit for battery back up and an enclosure tamper switch.

Alarm messages will be reported to the Net2 server if the lid of the ACU is opened (tamper) or if the mains supply to the unit fails (this alarm will only work successfully if battery back up is fitted).



## Links to online documentation

For further information about a specific ACU or advice on the communication methods available, please see the following:

Ins-30000 - Net2 classic quickstart guide < <http://paxton.info/48> >

Ins-30080 - Net2 plus control unit < <http://paxton.info/924> >

Ins-30075 - Net2 nano control unit < <http://paxton.info/710> >

AN1077 - Net2 plus - how does it work? < <http://paxton.info/1584> >

AN1095 - Net2 nano - how does it work? < <http://paxton.info/974> >

AN1040 - Installing a Net2 data line < <http://paxton.info/877> >

AN1006 - Installing remote sites using TCP/IP < <http://paxton.info/51> >

AN1096 - How to plan a Net2 nano installation < <http://paxton.info/975> >