



A X E Z E

15 Tips to install an Axeze Network System

The following tips are a guide only. We understand that you may not want to read our Installation Manuals, so here are some quick tips to ensure smooth installation of the Axeze network system. We hope these 15 tips are of a help to you.

1. **Plan the layout** of the network system (One controller per network for busy networks, or several Controllers per network for quiet networks).
2. Provide yourself with a chart showing the controllers, their Id's, access permissions etc.
3. **Calculate the number and type of Axeze controllers** you require for the job.
4. Have a pen and sticky note paper or tape ready to record the ID on the Controller, and record it on your chart.
5. Check that you have a screw driver for the small terminal blocks
6. Check you have the **Network Planning Form** where you planned the Controllers Id's/Networks and locations.
7. Take the all of the **hardware, planning sheets etc.** (You can download the software at the site, or you can prepare everything before you go, if using more than one controller per network, set the Controller ID.)
8. Check that you have your **Group Access Planning Sheet** and **Group Members Planning Sheets**.
9. **Cabling:** The Axeze KEN network utilises an RS-485 multi drop network on two wires. The units on the network are connected in daisy chain fashion via quality twisted pair cable such as Belden. The cable should be installed in accordance with standard data cabling practices with the emphasis on keeping a minimum distance of 200mm from 240-volt cabling. Where the data cable must cross 240 volt cables it should do so at right angles. Shielded cable should be used for segments that pass through known hostile RF environments.
10. **Cable Length:** The RS485 standard indicates a maximum cable length of 1200mtrs but this can only be achieved at low data rates. As the data rate (baud) increases the useable length decreases. Because the Axeze network transmits data at 9600 baud, for reliable network communications it is recommended that you use an RS-485 repeater if the cumulative cable length of a network exceeds 1000mtrs. If you require an RS-485 repeater contact your Axeze supplier for more information.
11. **Ground Connection:** The ground connection on the Axeze units should not be made without first testing potential difference (PD) between the grounds. Large currents could flow in this connection if there is a potential difference (PD) between the grounds. If a PD of more than 4V exists between the ground connections at different access points then an "Isolating repeater" should be used between the two access points irrespective of the number of access points on the segment or the cable length. The PD between all access points should be checked on any network that is powered from more than one Mains Distribution Box. We recommend that you use separate networks in accordance with **Ethernet network** standards so that this is not an issue
12. **Terminating resistors:** The first unit, normally the converter (ANC) and the last unit on the network should be terminated with a 120 ohm 0.5 watt resistor across the A and B connections. If a repeater is used a terminating resistor is required on both the input and the output of the repeater unless they are built into the repeater.
13. **Anti-noise Bias:** The converter pulls the A line to +5V via a 1k resistor to +5 volts and the B line down to GND also via a 1k resistor. This, in unison with the terminating resistors, places a small bias on the network that prevents small interference signals from changing the state of the receiver inputs. This is known as Anti-noise bias. **Termination resistors must be fitted otherwise the network will not function correctly.**
14. **Power Supply:** Each Controller will require a **power supply**. Choose a supply that will maintain the input voltage to the Axeze Controllers between 10VDC and 16VDC at all times (Note: The reader requires about 50mA average current and the voltage will be at its lowest when the strike is energised). If more than one Controller shares a common power supply, care should be taken in choosing the gauge of the wire used. Calculations should be based on the number of strikes likely to be energised at the same time. This could be all strikes if fail safe strikes are used.
15. **Battery backup** should be considered for all installations where continued operation during a power outage is required, particularly where fail safe strikes are used. An interruption of the power supply will also reset the internal clock and consequently off-line logging will not be correctly dated and time stamped. The latest controllers (KEN-OL2) have a super-cap backup on their Real Time Clocks (RTCs) and Axeze Studio can ensure real time alignment.

Tip 1: Gainsborough Trilock: Electric strikes operate with most door latches, however we recommend 15JJ latch - use any handle to suit the 15JJ.

Tip 2: Ethernet setup – We believe you know what you are doing but if you need help, contact Axeze.

For Video Clips on installation, User Manuals, Datasheets and Wiring Diagrams please go to www.axeze.com.au