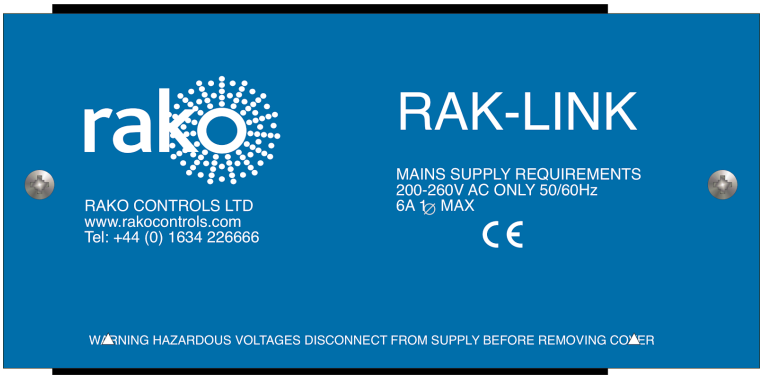
Instruction Manual

RAK-LINK

Wired RAK Connection Unit



2024
Version 3.2.4

For programming information: Wired System Programming Guide

For general System information: Wired RAK Application Sheet

Contents

1 What is the RAK-LINK?

The RAK-LINK is an essential component of any Rako Wired network.

The purpose of the RAK-LINK is to provide power to the Wired network and communicate between the Wired network and the RAK8-MB units. Up to 32 circuits can be mapped to a single RAK-LINK (4 RAK8-MB units); multiple RAK-LINKs may be used should more circuits be required.

The RAK-LINK supports up to two CAT5 or CAT6 cables via the punch-down connector and has three RJ11 ports that can connect Rako Wired accessories.

The power supply on the RAK-LINK is capable of powering up to 40 Rako Wired devices via the connections to the punch-down connector.

NB
The RJ11 ports are not suitable for connecting multiple devices and must be used solely for single Rako Wired accessories.

For a specific calculation of power requirements, please refer to the RAK-LINK diagnostics application sheet.

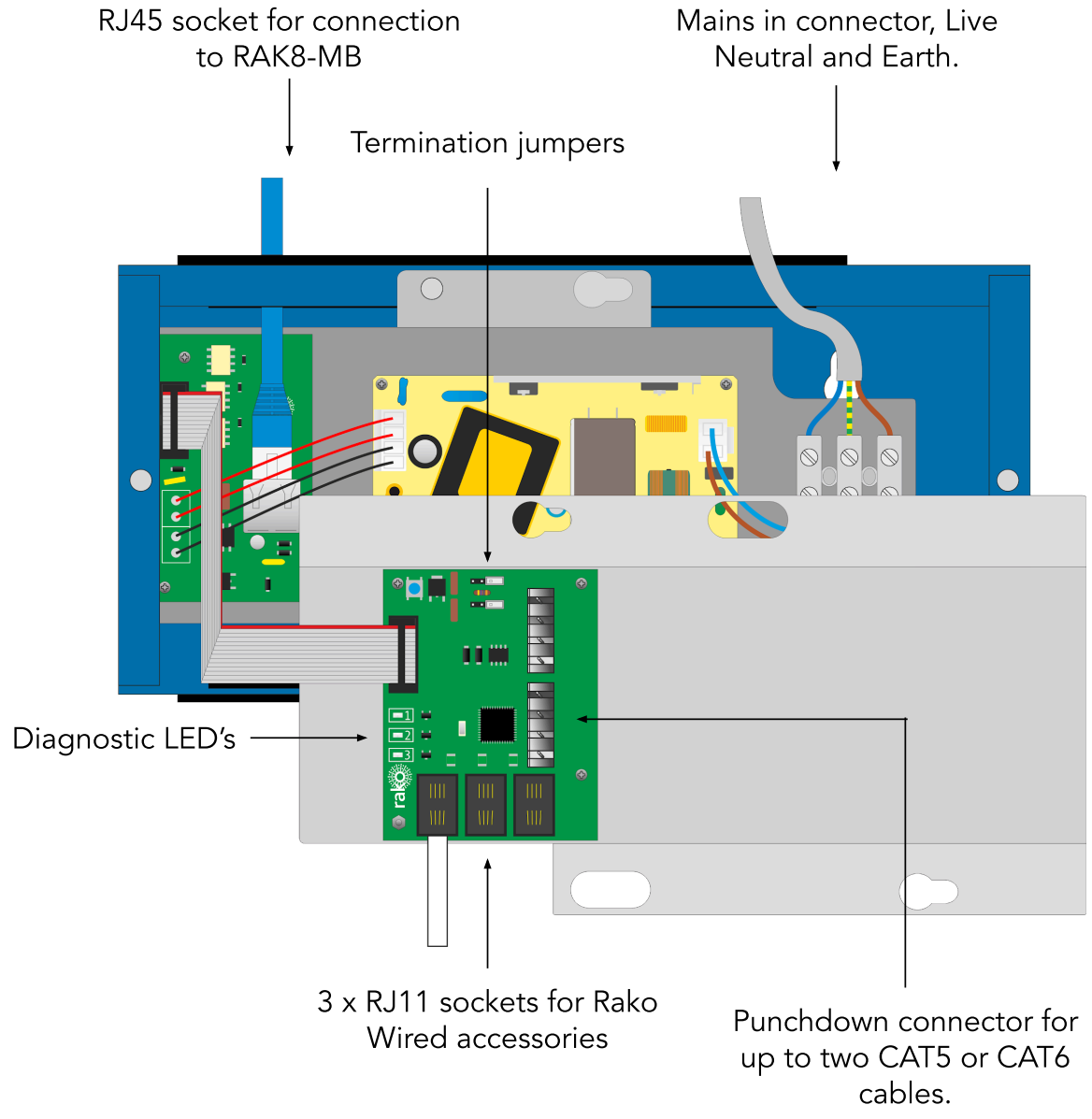
2 Installation of the RAK-LINK

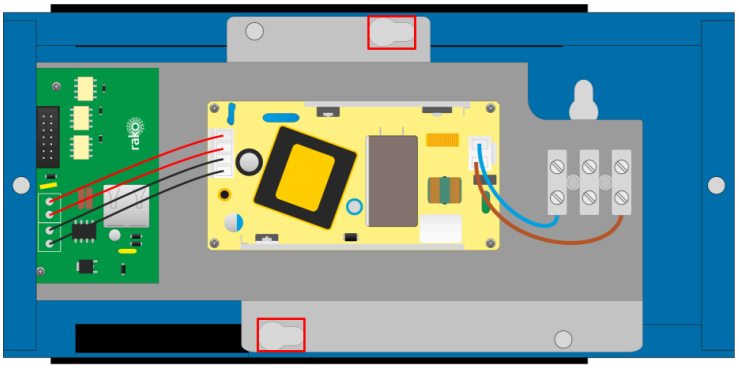
⚠WARNING

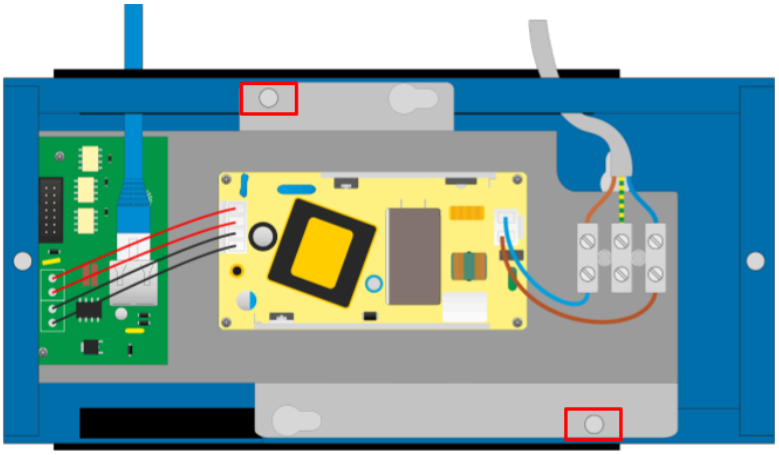
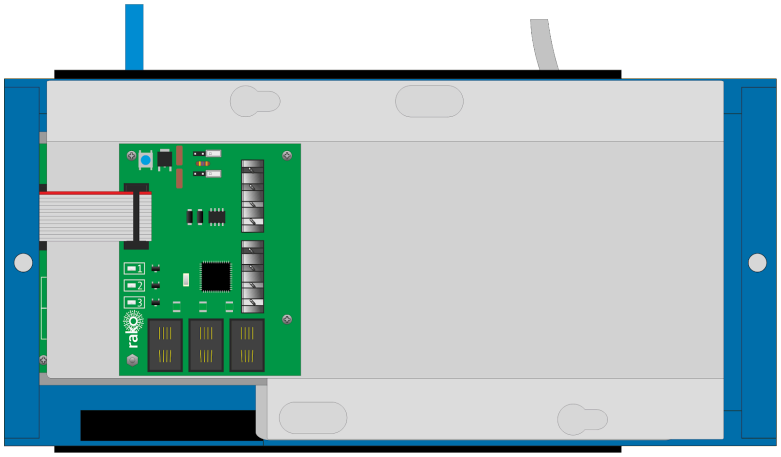
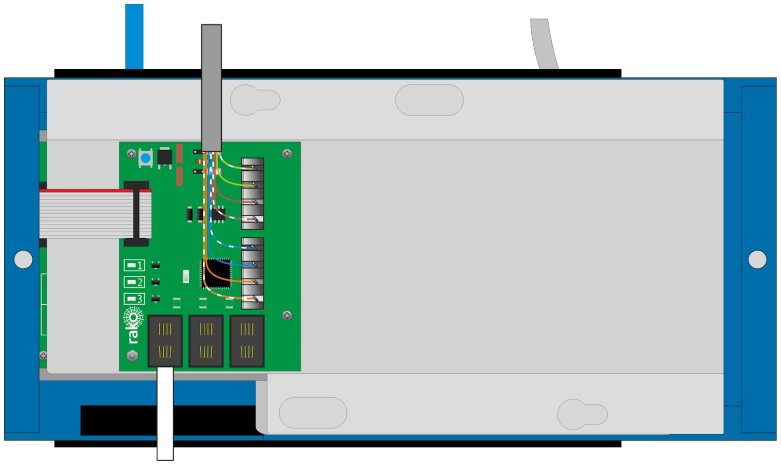
Installation should only be carried out by a competent electrician.

The connections to the RAK-LINK, as shown below are:

1. Mains AC connection to power supply
2. RJ45 patch lead to RAKs
3. Krone connector punch downs and RJ11 sockets to Wired network
4. Optional 3 x RJ11 sockets for Wired accessories



Step 1		Remove the front cover and remove the plastic knockouts to allow cables to pass in and out of RAK-LINK.
Step 2		If RAK8-MB units are being used, slot the RAK-LINK housing into the RAK8-MB metalwork using the plastic rails. Screw RAK-LINK to the wall and prepare the mains supply cable.
Step 3		Remove the top tray by disconnecting the ribbon cable and screws Fix the lower tray into the wall-mounted metal housing using the screws indicated in the diagram.

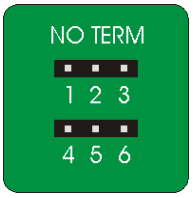
Step 4		Wire the mains supply into the terminal block. Insert the RJ45 cable that links the RAK-LINK to a stack of RAKs. Prepare two remaining screws to be slotted into the top tray
Step 5		Reattach the ribbon cable between the top and bottom board Slot the top tray into the bottom tray and screw down
Step 6		Punch down the CAT5 to the Wired network to complete installation. If required, connect up to three Wired accessories (for example the WK-HUB) to the RJ11 ports

3 Terminating the RAK-LINK

The final step in the installation process is to terminate the RAK-LINK. The termination that is required depends on the nature of the installation and the position of the RAK-LINK within the System.

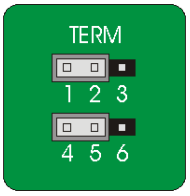
No Term - Both Jumpers removed

Used when the RAK-LINK is not at the end of line. This is usually identifiable by two cables being punched down to the RAK-LINK.



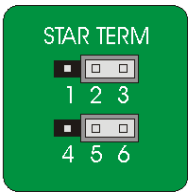
Term - Jumper fitted across 1+2 & 4+5

Used when the RAK-LINK is end of line in a daisy chain configuration.



Star Term - Jumper fitted across 2+3 & 5+6

Used when the RAK-LINK is end of line in a STAR wire configuration.



4 Programming the RAK-LINK

The RAK-LINK is programmed using the Rasoft Pro programming software. A WK-HUB or WA/WTC-Bridge is required for any programming of a Wired System.

For more information on how to program a RAK-LINK please refer to "Wired System Setup Guide"

Thank you for choosing Rako Controls; we hope that you are pleased with your system. Should you require further assistance, please contact us via our website, www.rakocontrols.com, or by calling our customer support helpline on 01634 226666.

Appendix 1: RAK-LINK diagnostics

Requires ISSUE B circuit board and firmware version 0.4.6

RAK-LINK Blue LED Status			
Number	Colour	Indicates	Uses/example
	Blue	Device activity	• Device in setup • Network looping poll
2 	Blue	Power/ CAN bus activity	• Solid Power detected • Flashing CAN Bus Transmitting or receiving
3 	Red	CAN Diagnostics	• CAN warning • CAN error

Red LED Status	Troubleshooting (Potential causes)
Warning: RED LED Fast flash	Continuously checked
Cause: Incorrect voltages measured on the RAK-LINK data lines. The System may still function.	• One or more data line(s) have been shorted to a power line. • RAK-LINK put into setup mode with no network attached. • The network is very busy (LED 2 will also be flashing fast).
Warning: RED LED Slow flash	Continuously checked
Cause: Power supply detected to be below 12V	• Power Supply failing. • Power is supplied from another source.
Error: RED LED solid	Checked on power-up and attempted transmission
Cause: CAN Transmission failure. The RAK-LINK has repeatedly failed to transmit a message.	• RAK-LINK put into polling mode with no network attached or CAN bus shorted together.

Once the fault has been cleared, power cycle the RAK-LINK to clear the LED diagnostics.

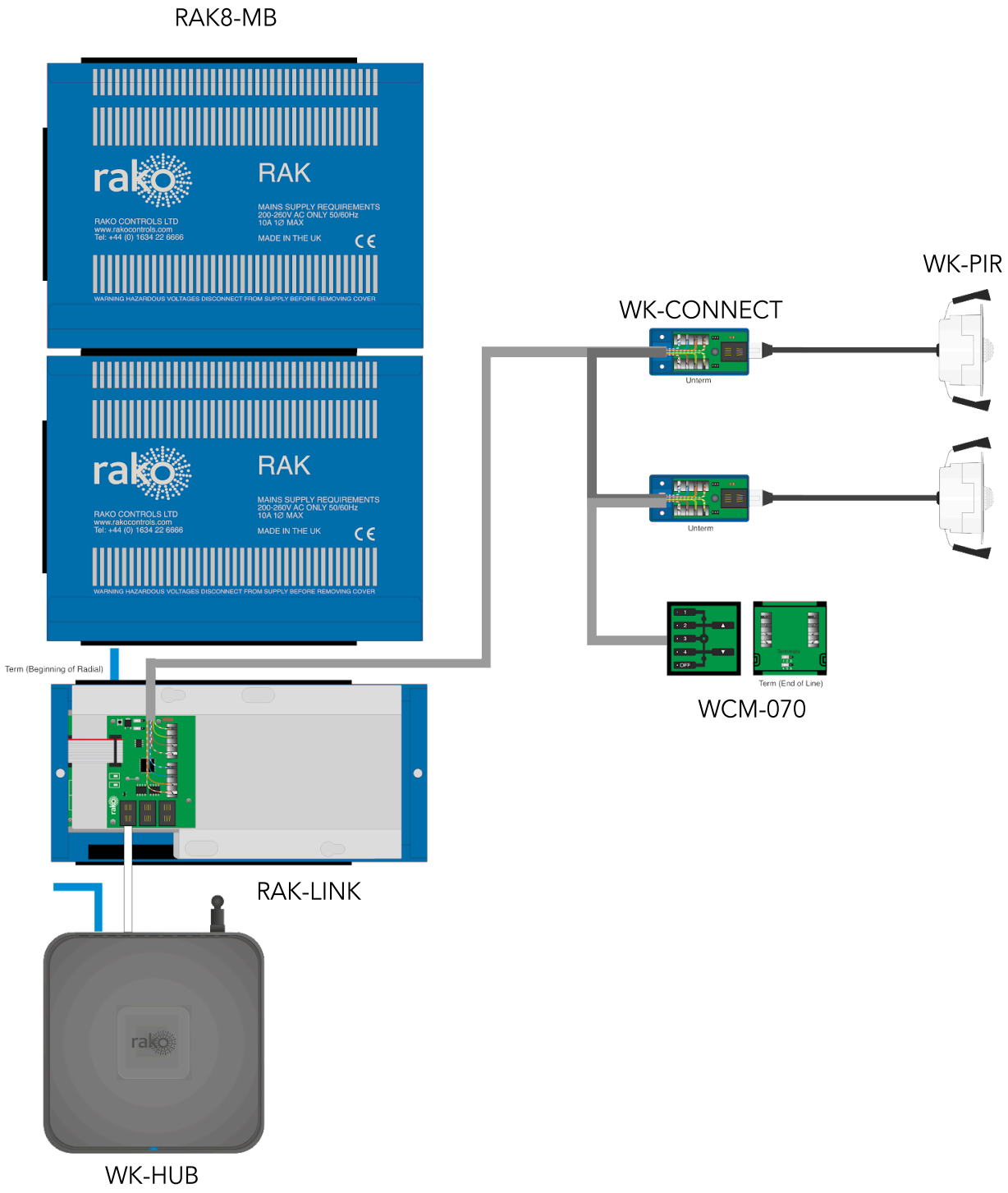
NB

Caution should be exercised while using this table for diagnostic purposes. The suggested possible cause is the most likely of many possible outcomes but is not a guaranteed solution.

Appendix 2: Example Systems diagram

Radial Wired System

The diagram below shows a RAK-LINK in a Wired radial System.



STAR Wired System

The diagram below shows a RAK-LINK in a Wired STAR System.