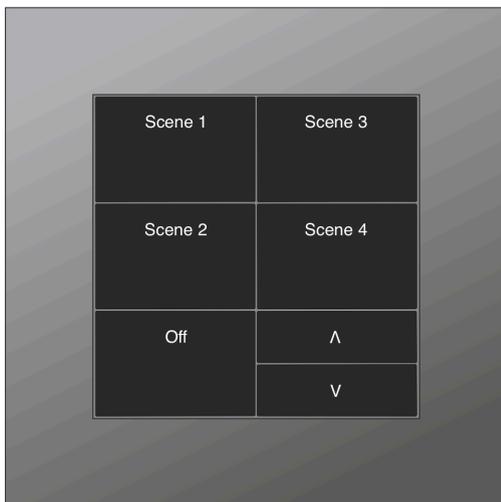




# Instruction Manual

# WK-MOD

## Wired Modular Keypad



2024  
Version 2.0.0



For programming system programming information: [Wired system setup guide.](#)

For a general overview: [Wired RAK application sheet.](#)

## Contents

[1 What is the WK-MOD?](#)

[2 Installing the WK-MOD](#)

[3 Terminating the WK-MOD](#)

[4 Programming the WK-MOD](#)

[4.1 Adding the WK-MOD as a Device](#)

[4.1.1 The Mapping Section](#)

[4.1.2 Keypad layout](#)

[4.1.3 Button action](#)

[4.1.4 Keypad Layout Editor](#)

[Appendix 1: Troubleshooting the Wired Network](#)

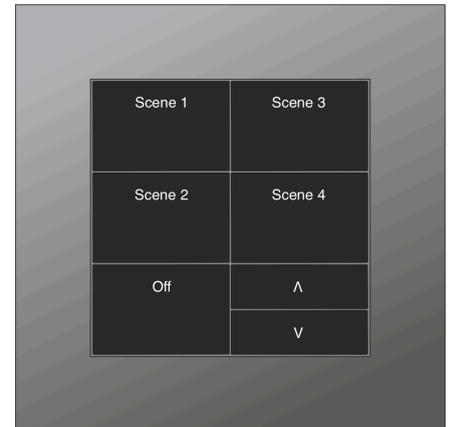
[A1.1 WK-MOD Diagnostics](#)

[Appendix 2 - Wiring Examples](#)

[A2.1 - Radial Wiring](#)

[A2.2 - STAR Wiring](#)

[Appendix 3 - Surrounds \(HS-MOD-xx\)](#)



## 1 What is the WK-MOD?

The WK-MOD is a modular keypad used in a Rako Wired network, it is available in a wide variety of button configurations, as well as fully customisable button positioning and sizes should it be required.

The WK-MOD requires a RAK-LINK to operate as part of the system.

Through Rasoft Pro, commands can be assigned to the buttons to perform actions, such as switching a Scene for a Room or closing Blinds.

Commands include:

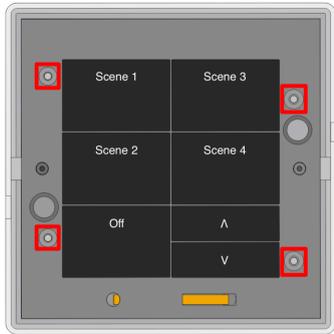
- Scenes 1 to 16
- Toggles for individual Channels or Rooms.
- Fade Up/Fade Down for individual Channels or Rooms
- Levels (0-100%)
- Multiple commands on a single input
- Press and hold
- Press and release
- Whole House commands

## 2 Installing the WK-MOD

### **⚠ WARNING**

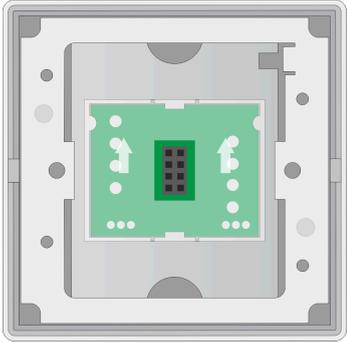
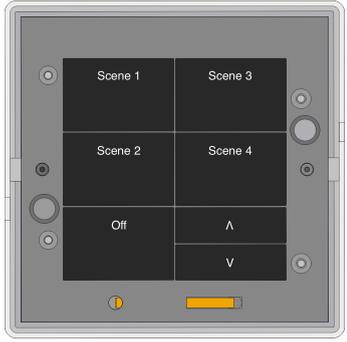
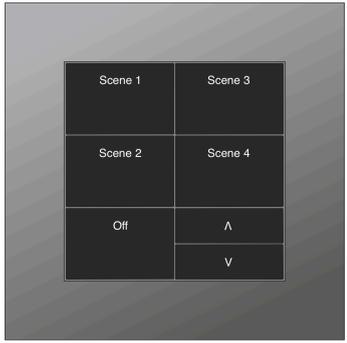
Installation should only be carried out by a competent electrician.

The WK-MOD has four visible screws on the "Front" section as shown below:



These must not be adjusted. Adjusting these may damage WK-MOD

<p>Step 1</p>	The diagram shows a cross-section of a cable with a blue jacket and yellow conductors. A blue arrow indicates a 70mm length of insulation to be removed. Below, a side view shows a utility knife cutting the insulation, with the text 'Remove 70mm of insulation'.	<p>Prepare cable(s) in the backbox (minimum 35mm backbox depth) ready for connection.</p> <p>Strip the CAT5/CAT6 cables</p> <p>Remove the front section of the WK-MOD and set it aside.</p>
<p>Step 2</p>	The diagram shows the back of the WK-MOD with a green circuit board. Two blue cables are shown being inserted into the board's ports. Colored wires (yellow, green, blue, red) are connected to the terminals on the board.	<p>Punch down the cable(s) matching cable colours to connection colours as shown on the circuit board.</p> <p>There may be either one or two sets of cables to punch down.</p>

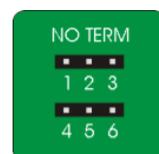
<p>Step 3</p>		<p>Terminate the WK-MOD as required. See "Terminating the WK-MOD" section of this manual.</p> <p>Screw the grid containing the back section into the back box.</p> <p>The back section of the WK-MOD is now installed and is ready for the front section.</p>
<p>Step 4</p>		<p>Clip the front section of the WK-MOD into the grid.</p> <p>Push each corner firmly into position to ensure a good connection.</p> <p><b>NB</b> If the wired network is powered then the backlit LEDs on the keypad will illuminate.</p>
<p>Step 5</p>		<p>Attach the magnetic surround to the assembly to complete installation.</p> <p><b>NB</b> If the surround is not sitting flush with the wall/grid try loosening/tightening the screws securing the back section into the backbox.</p>

### 3 Terminating the WK-MOD

It is important to terminate WK-MOD correctly otherwise the wired system will not function. The termination that is required depends on the nature of the installation and the position of the RAK-LINK within the system.

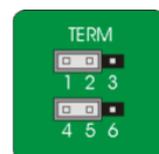
#### No Term - Both Jumpers removed

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



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

Used when the WK-MOD is "end of line" in a daisy chain configuration.



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

Used when the WK-MOD is "end of line" in a STAR wire configuration.



## 4 Programming the WK-MOD

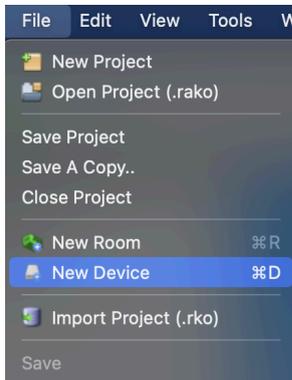
The WK-MOD is programmed using the Rasoft Pro programming software and a WK-HUB.

The following instructions assume:

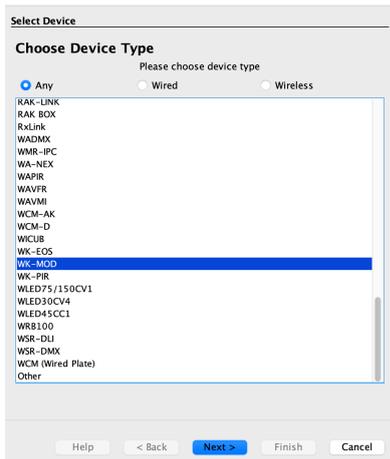
- A Project File has been created
- Rooms have been added to the project file
- The WK-HUB has been configured
- The Wired Network is showing no errors on the switches and RAK-LINK

### 4.1 Adding the WK-MOD as a Device

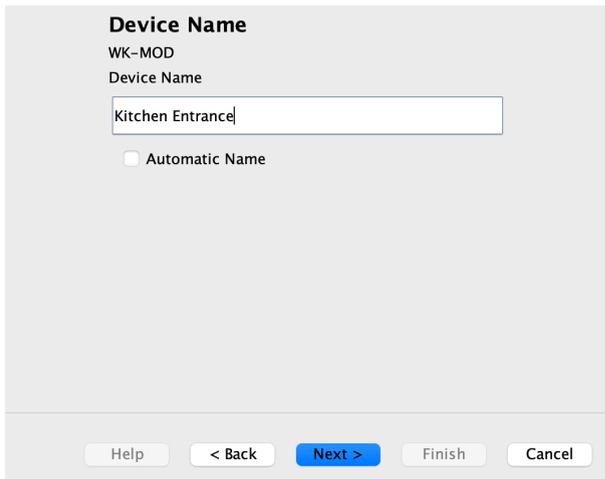
- In Rasoft Pro, go to File > New Device



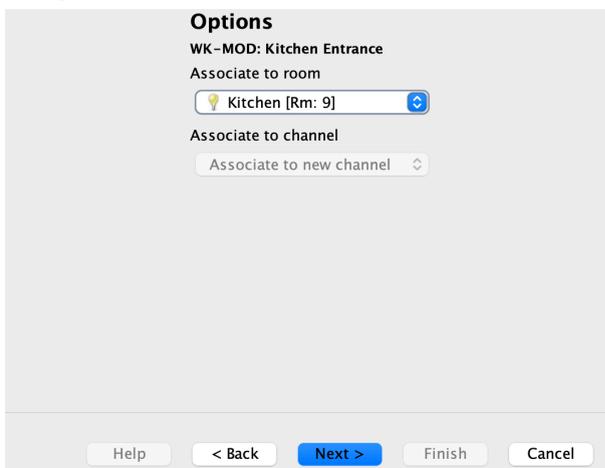
- Select the WK-MOD in the Device List, select "Next"



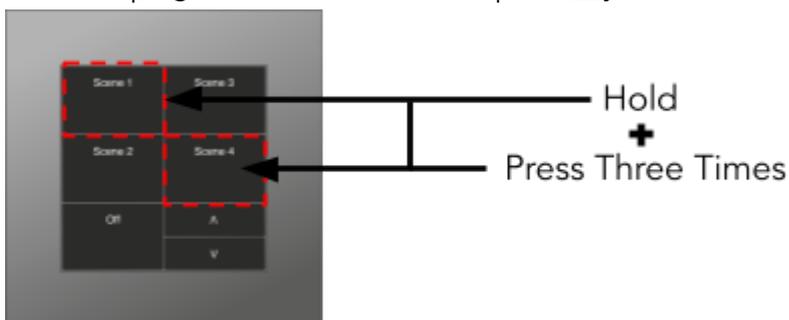
- Give the WK-MOD a suitable name, select "Next"



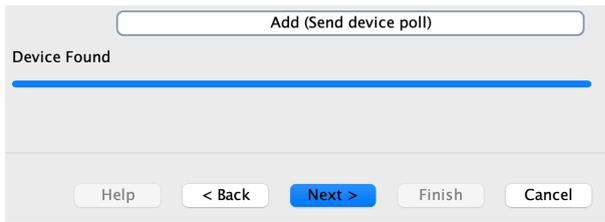
- Assign the WK-MOD to a Room, select "Next"



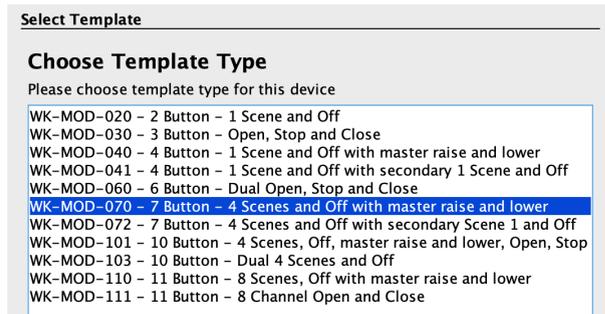
- Put the WK-MOD into setup mode, press and hold any button on the WK-MOD, whilst keeping this button held down press any other button three times.



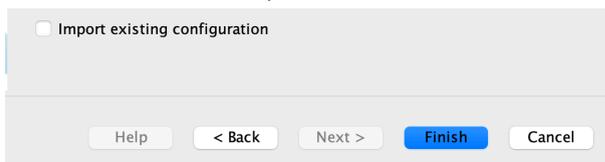
- The backlit LEDs will begin to cycle to indicate the keypad has entered setup mode, the setup window will show "Device Found" when the device has successfully gone into setup mode, select "Next" to finish the pairing process.



- Select a template, the button configuration will be printed on the box, if it is a custom button layout, this can be configured within the WK-MOD menu after the setup wizard has completed.



- Once a suitable template has been selected, select "Next"

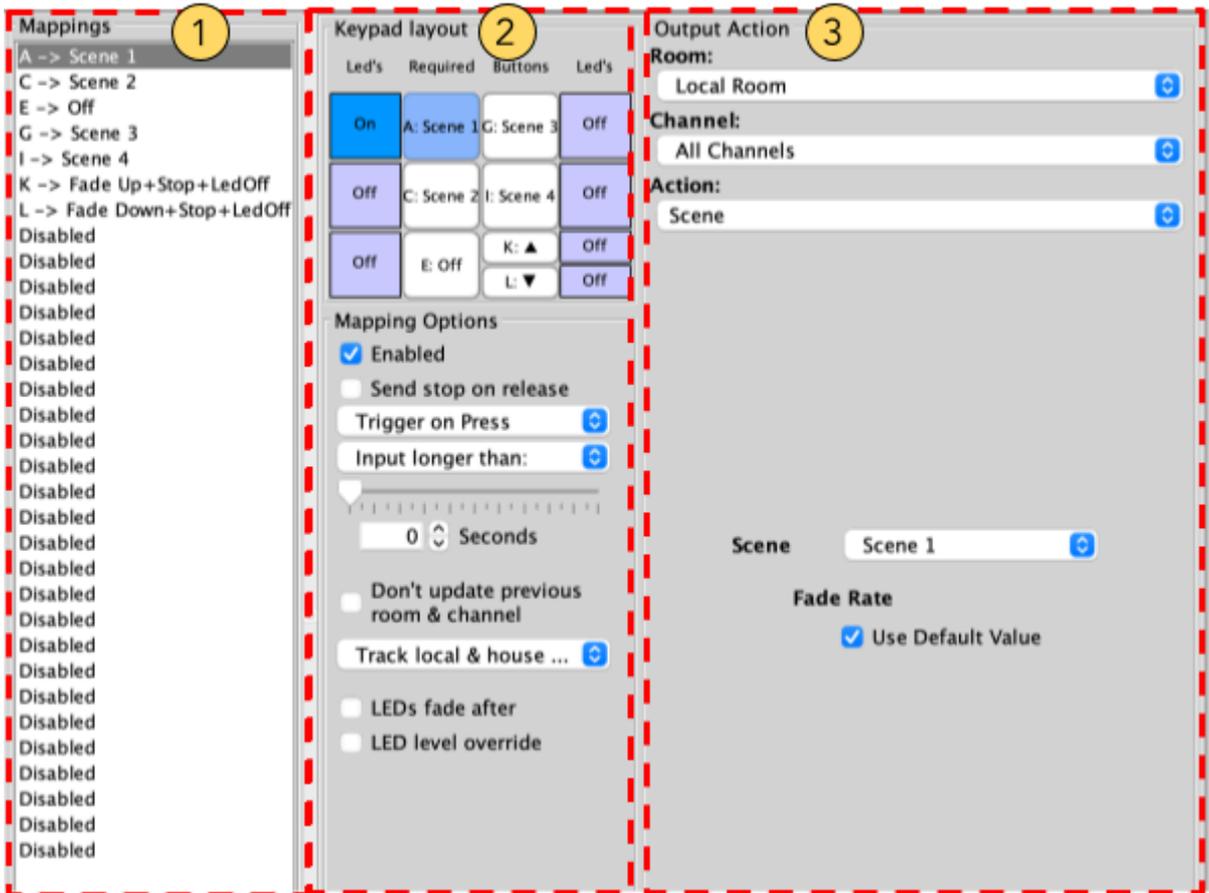


- The WK-MOD will appear in the Device list once successfully set up.



#### 4.1 Configuring the WK-MOD

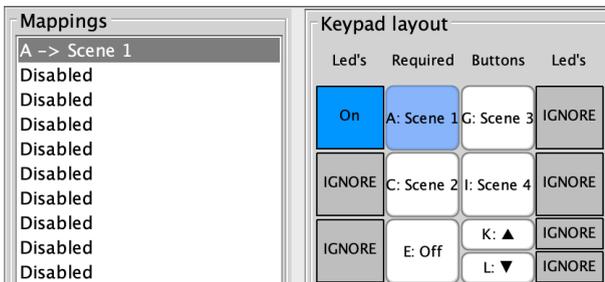
Once the WK-MOD has been assigned in Rasoft Pro, it can be configured further in the Device editor.



#### 4.1.1 The Mapping Section

All programmed inputs for the Device must first have a mapping. The purpose of a mapping is to program a button to perform a specific command. Each input has its own letter to represent its input, there are up to 12 on the WK-MOD.

New mappings can be created by selecting a disabled field and selecting the corresponding input letter in the next column:



Active mappings can be copied or pasted into disabled mappings; this is typically used when re-using similar functions of an existing mapping to save time, such as a toggle function.



*Mapping right-click options*

**NB**

Ensure only a single letter is used for each mapping, otherwise, the mapping will not function unless all inputs are pressed at the same time.

**4.1.2 Keypad layout**

The inputs for the mappings are selected in the Keypad layout section, as well as additional input options:

Function	Description
Send Stop On Release	When the button is released, a 'Stop' command will be triggered.
Trigger on press	Trigger the output command when the button is pressed.
Trigger on release	Trigger the output command when the button is released.

**4.1.3 Button action**

The output actions of the buttons inputs are set up in the button action section, the following options are available:

Function	Description
Room	The Room number of the output command.
Channel	The Channel number of the output command, can be All Channels or a single Channel.
Disable map	When enabled, the button input will have no output command.

Scene	If a Scene is being triggered, select a Scene between 1-16.
Fade-Up/Fade-Down	Commonly used to manually dim lighting up and down, as well as the opening/closing of blinds.  <u>NB</u> 'Send Stop on Release' should also be checked when using this option.
Motor Stop	Used to stop 3rd party motors that are configured within the HUB.
Ident	This option is not recommended, as the command will make a load flash momentarily and provides no practical function for daily use.
Toggle	The Toggle function will alternate between two commands, either a Level command and Off, or a Scene command and Off.  <u>NB</u> Do not map more than one Toggle to a single button on the inputs; this will result in sporadic switching due to toggles getting out of sync.
Level	Sets the lighting Level to a percentage of brightness between 0-100%.
Tunable White	Set the temperature output.
Macro	Trigger an internal Macro on the Device; this is not the same as triggering a Macro on a HUB.  <u>NB</u> Macros can be created on the 'Macro' tab above the button configuration.

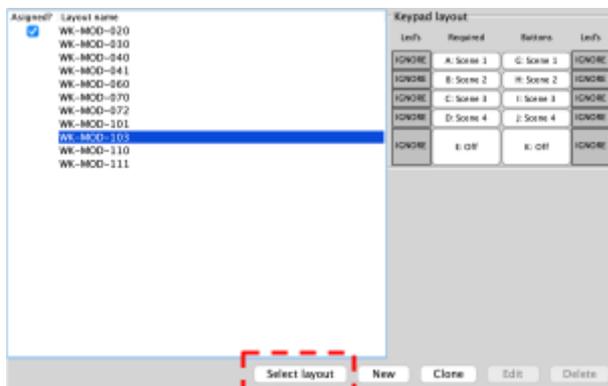
### 4.1.4 Keypad Layout Editor

The WK-MOD has fully customisable button layouts, which can be configured in the WK-MOD Device menu.

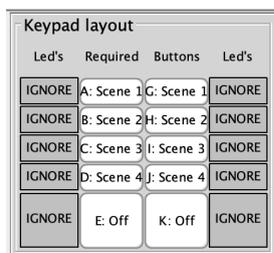
The Keypad Layout Editor is found by selecting the tab above the mappings window:



- Existing templates can be loaded into the mapping page which will change the button layout.
- Highlight the desired layout name and choose 'Select Layout'



- The layout will now be loaded on the 'Button Config (Mapping)' page.



For information on how to program the Wired System using Rasoft Pro - See the [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](http://www.rakocontrols.com), or by calling our customer support helpline on 01634 226666.



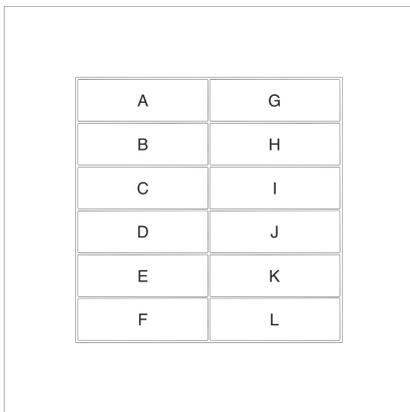
## Appendix 1: Troubleshooting the Wired Network

Sometimes cabling problems or incorrectly punched down cables mean a degree of fault finding needs to be done on the Wired network. The WK-MODs use backlit LEDs to provide fault codes, which can be combined with the guides below to resolve problems.

[RAK-LINK diagnostics](#) - For fault finding, "Daisy Chain" and "STAR" configuration.

[RAK-STAR diagnostics](#) - For fault finding, "STAR" configuration.

### A1.1 WK-MOD Diagnostics

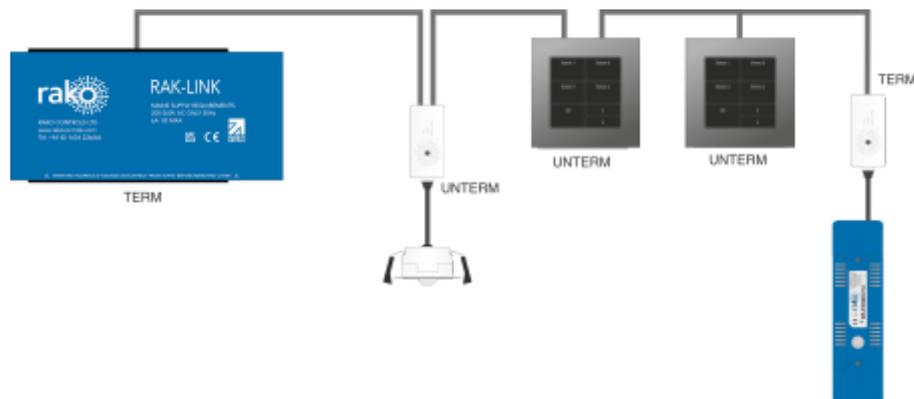


Letter	Indicates	Uses/example
G	CAN Transmission Failure	Cannot communicate with CAN bus.
I	CAN Short	CAN bus shorted together.
E	Low power	Supply to the keypad has dropped below 12V. The keypad may still work below this.
A	Bootloader	Keypad has not booted firmware. Required state for firmware upgrade - can be entered via Rasoft/holding button down on startup.
I & either K or L (K = Over L = Under)	Over/Under Voltage indicator	Over/Under voltage identifier. Used in conjunction with 'D' and 'F'. 'On' indicates overvoltage 'Off' indicates undervoltage.

## Appendix 2 - Wiring Examples

### A2.1 - Radial Wiring

A Radial system consists of one or more Wired Devices connected in a loop-in/loop-out arrangement. The end of line points should be terminated in the 'Term' configuration.

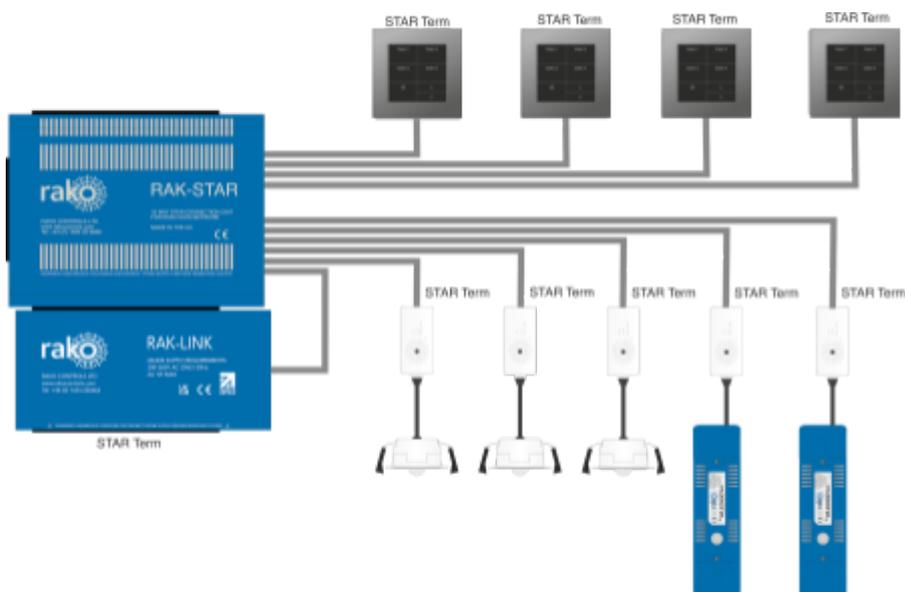


### A2.2 STAR Wiring

A STAR Wired system has individual runs from one or more RAK-STAR units to the Wired Devices, every end of line in a STAR system should have the STAR termination.

#### **NB**

More than one Device can be connected to a leg on a STAR system, Devices in the middle of a loop in/loop out should be set to TERM, and the end of lines should be set to STAR.



### Appendix 3 - Surrounds (HS-MOD-xx)

To complete the installation of the WK-MOD a HS-MOD-xx is required as shown above. This is available in a variety of finishes including:

- Satin Chrome (Silk) surround kit - HS-MOD-SC
- Polished Chrome surround kit - HS-MOD-PC
- Antique Brass surround kit - HS-MOD-AB
- Polished Brass surround kit - HS-MOD-PB
- Matt Bronze surround kit - HS-MOD-BM
- Matt White surround kit - HS-MOD-WH
- Matt Black surround kit - HS-MOD-MB