zencontrol

Room controller

Room controller

- The room controller provides a new way to install lighting

- Zero commission base builds (standard features)

- Installed in the field

Room controller, RCM

The zencontrol room controller provides power distribution and automatic grouping via its 10 channel output. With support for up to three input power circuits the room controller can supply up to 3 x 16 A.

Includes

- DALI 2.0 power supply

- DALI 2.0 application controller

- Ethernet 10 / 100

- 10 room control outputs

- 10 DALI relays (240V 10A max. AC1)

- 10 SELV switch inputs
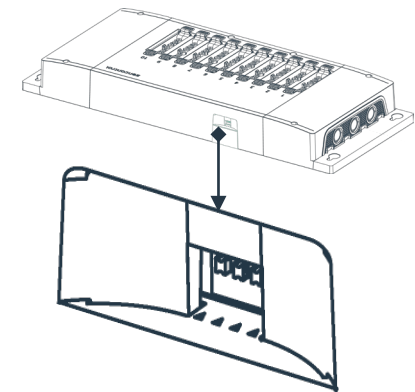
- 2 volt-free SELV relays

- RS232 interface

New builds with zencontrol
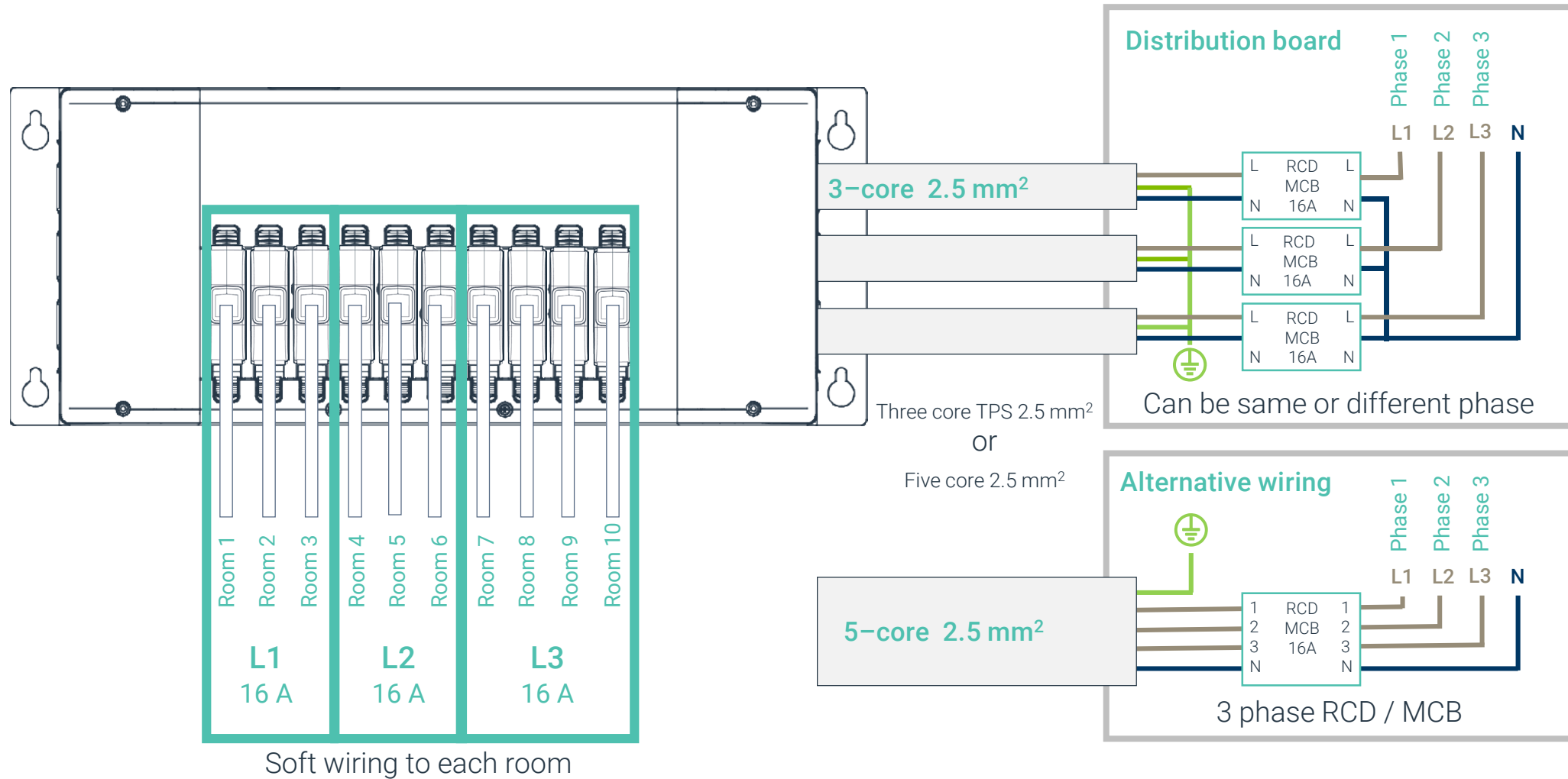
Out of the box

- 30 minute time out on sensors

- Room areas automatically grouped by output

- Devices addressed & setup

- Sensors work in presence mode

- Switches and sensors work together in a room automatically

- Switch has on/off and dimming control

Before installation, dip switch settings can be adjusted to change between

- Absence and presence

- 4 time settings

- Standard single profile, or smart building profile

Room controller wiring

3-core 2.5 mm²

Three core TPS 2.5 mm²

or

Five core 2.5 mm²

5-core 2.5 mm²

Room 1
Room 2
Room 3
Room 4
Room 5
Room 6
Room 7
Room 8
Room 9
Room 10

L1
16 A

L2
16 A

L3
16 A

Soft wiring to each room

Distribution board

Phase 1
Phase 2
Phase 3

L1   L2   L3   N

L   RCD   L
MCB
N   16A   N

L   RCD   L
MCB
N   16A   N

L   RCD   L
MCB
N   16A   N

Can be same or different phase

Alternative wiring

Phase 1
Phase 2
Phase 3

L1   L2   L3   N

1   RCD   1
2   MCB   2
3   16A   3
N   N
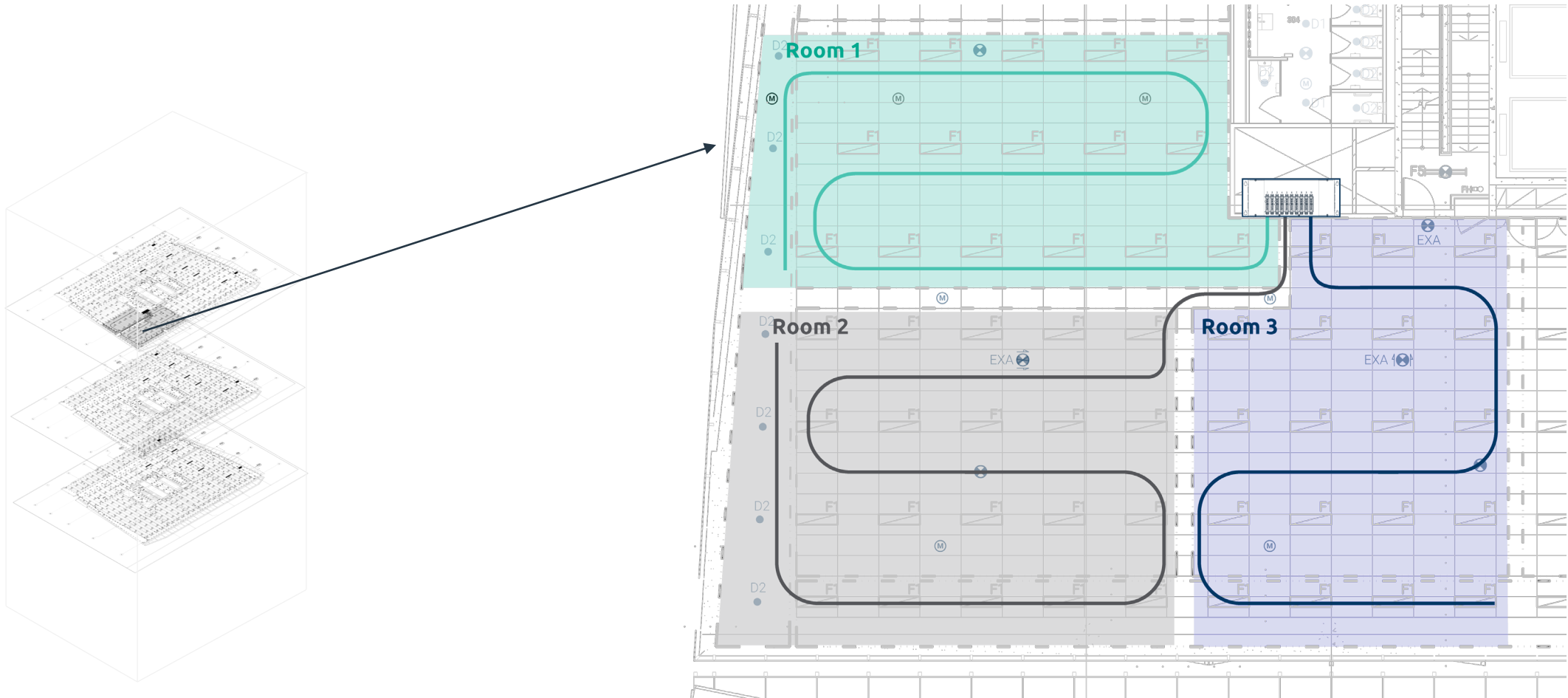
3 phase RCD / MCB

Room wiring

Each room is wired independently
to the **Room controller**

Wiring for automatic grouping for
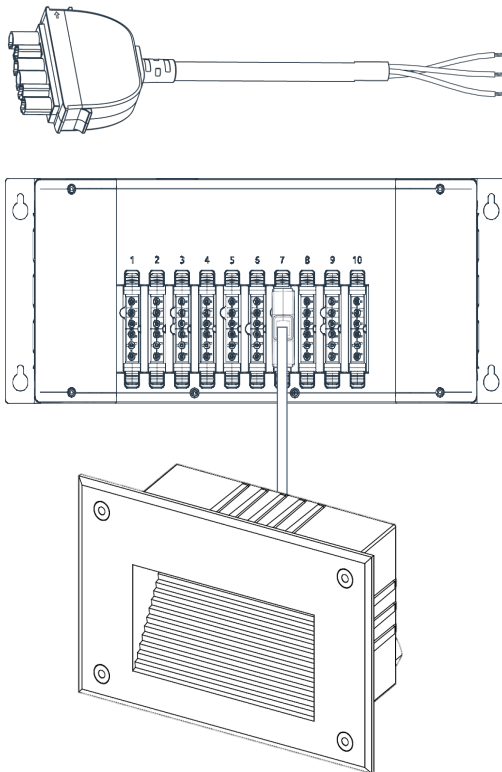daylight harvesting
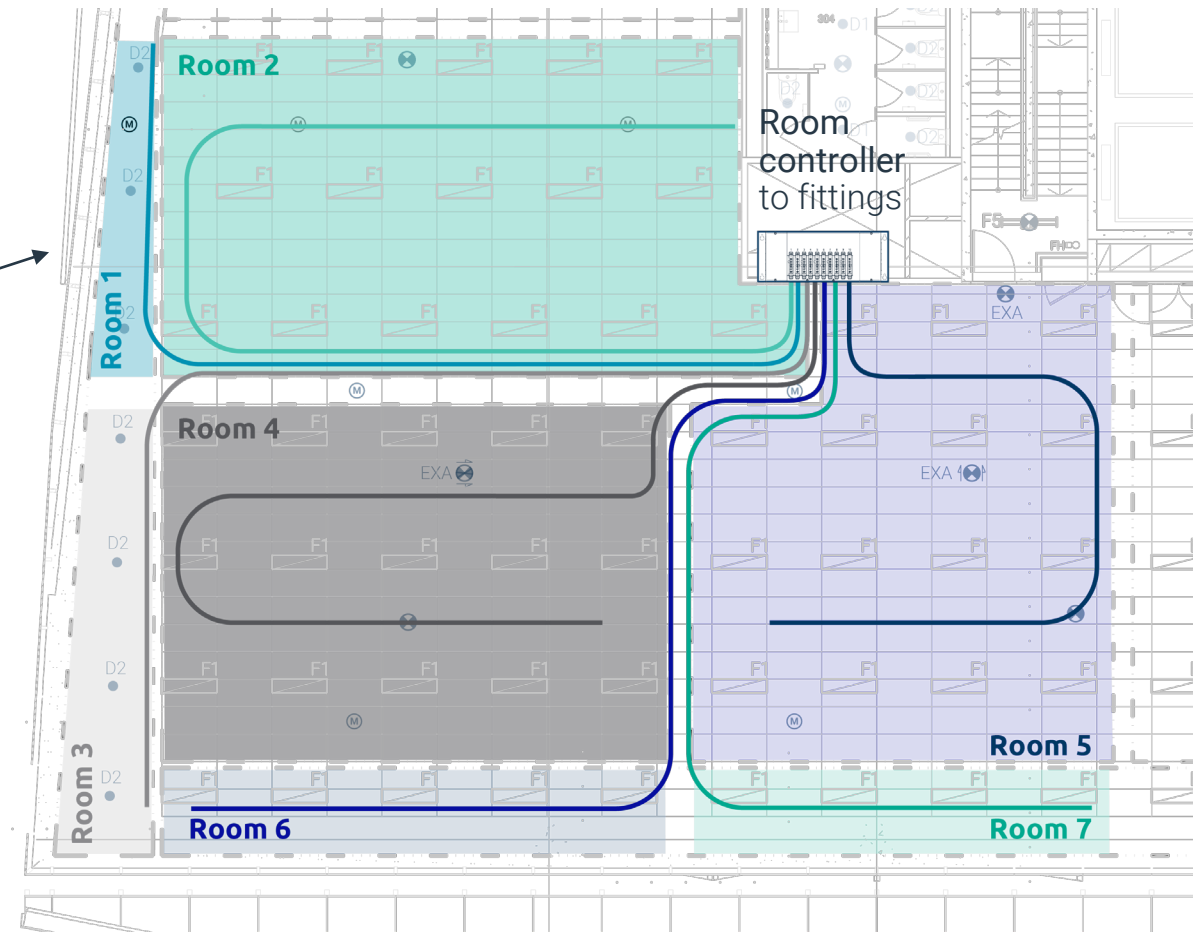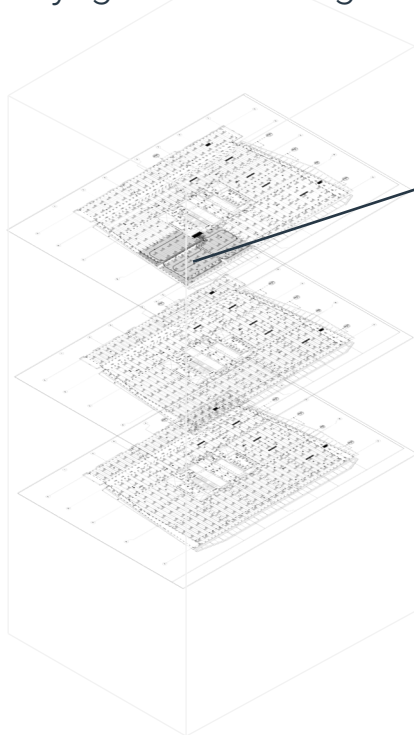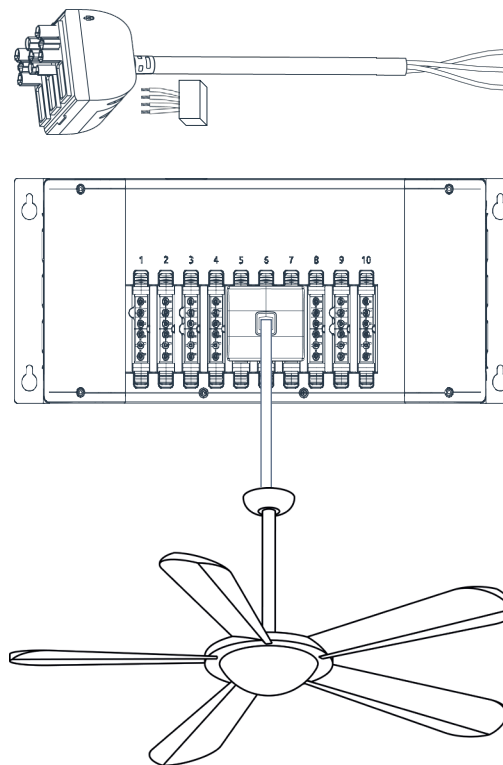
Room wiring

Alternative wiring

Optional accessory wiring
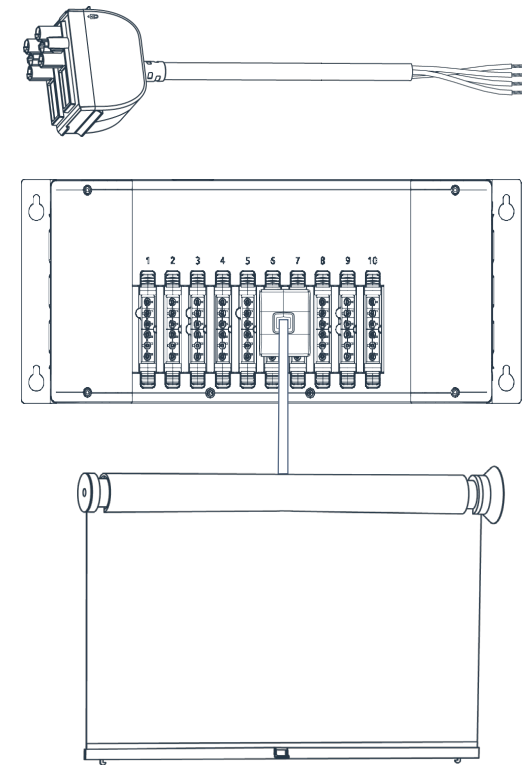
Non-DALI loads

Fan control

AC fan control motors up to 240 V 1A. 3 speed

Blind / motor control
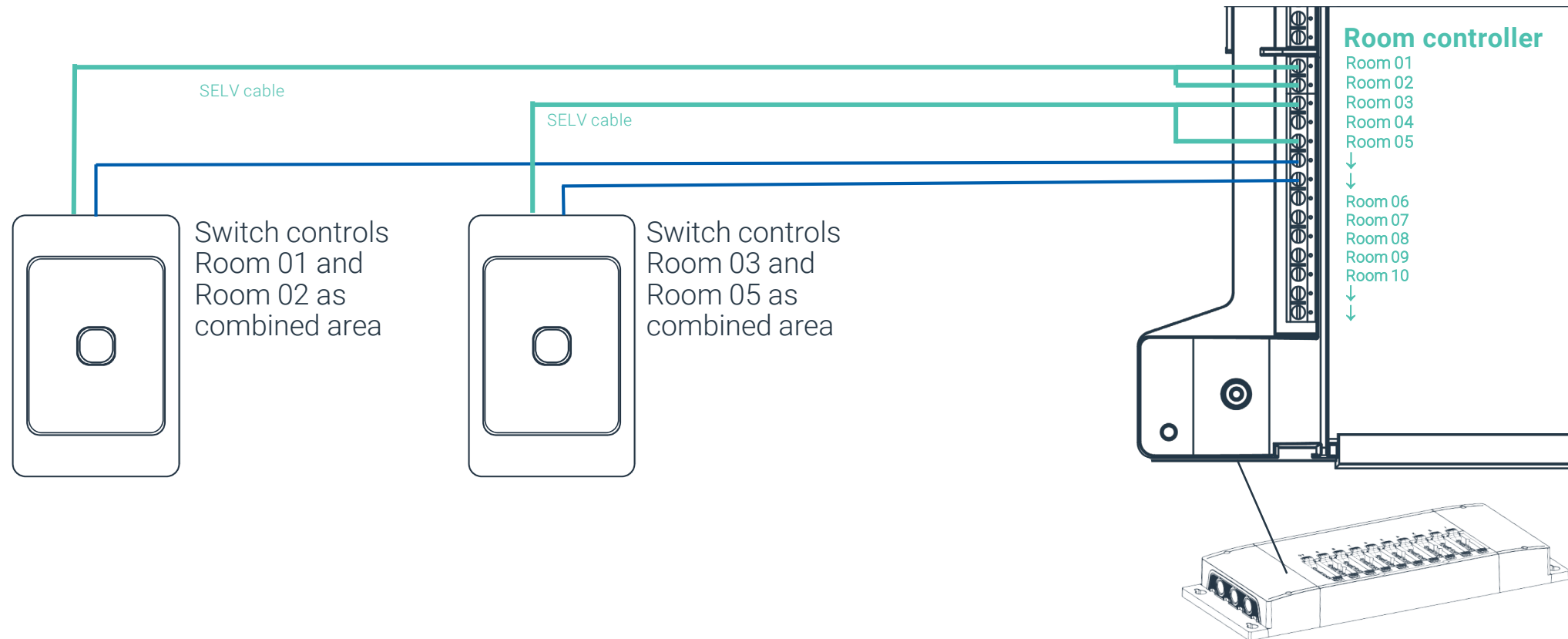
AC blind control motors up to 240 V 1A
(Available on *zc-blind* only)

Optional switch wiring

Group rooms together to operate as combined area

SELV cable

SELV cable

Switch controls
Room 01 and
Room 02 as
combined area

Switch controls
Room 03 and
Room 05 as
combined area

Room controller
Room 01
Room 02
Room 03
Room 04
Room 05
↓
↓
Room 06
Room 07
Room 08
Room 09
Room 10
↓
↓

Optional simple corridor hold

By default the two SELV relays are setup in Room 01 and Room 02 respectively. These will act as DALI relays in the room, when the room is on the output will also turn on.

If the output is wired to the corridor room, then when Room 01 or Room 02 are occupied the corridor (Room 03) will also be held on.

Room controller

Rx

Tx

↓

12V

I / O -

I / O +

I / O -

I / O +

Room 01

Room 02

Room 03

Room 04
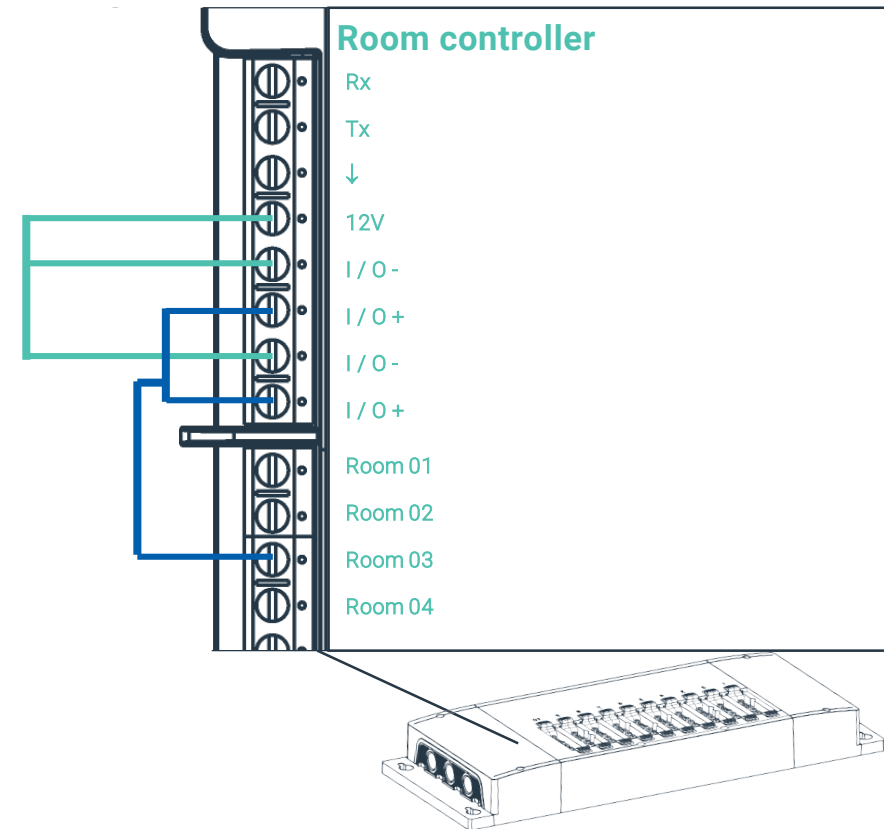
Automatic DALI relays

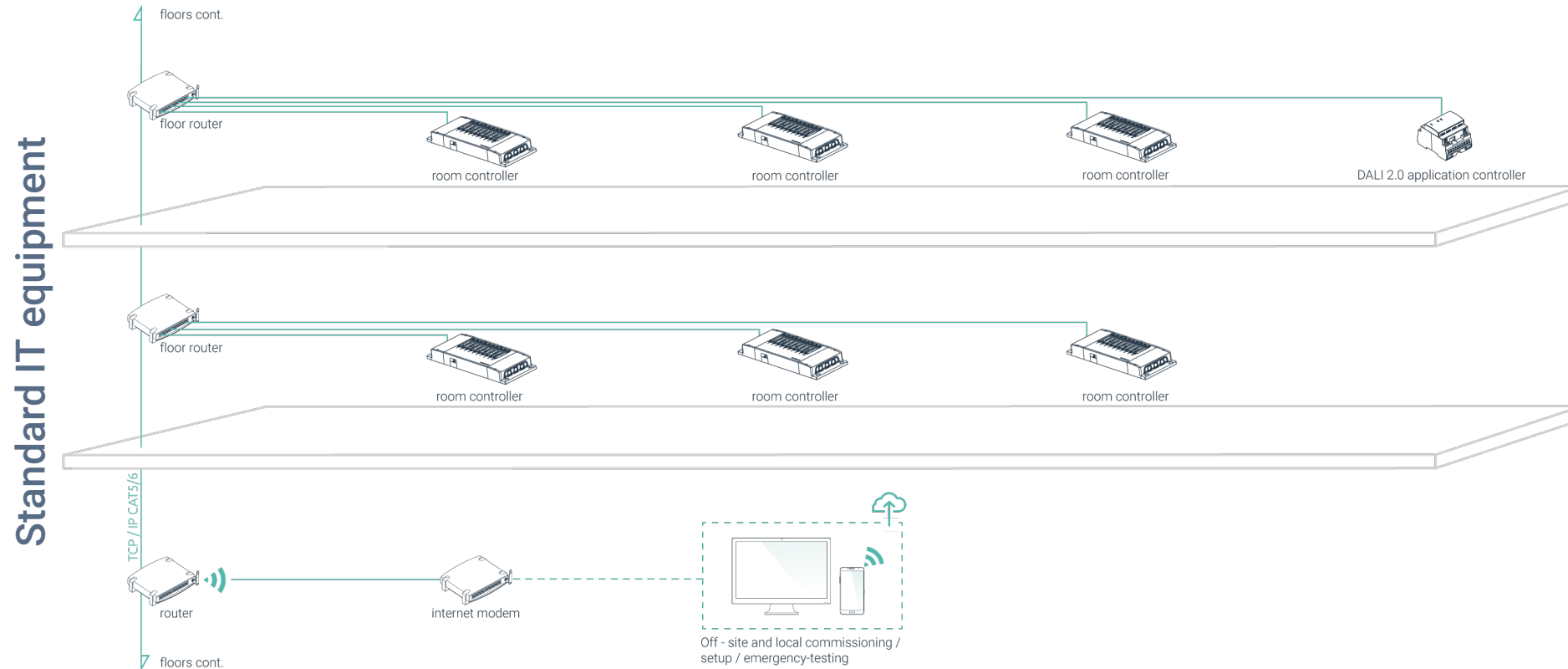The RCM will automatically turn rooms with no DALI devices into DALI relays (240V 10A max)

DALI relays will be assigned into the previous room which will allow automatic control with DALI switches and sensors

Allows for the addition and setup of non-DALI lighting easily

Room 1 Room 2 Room 3 Room 4 Room 5 Room 6 Room 7 Room 8 Room 9 Room 10

DALI

DALI

sensor

luminaire

automatically converted

lamp

sensor

luminaire

switch
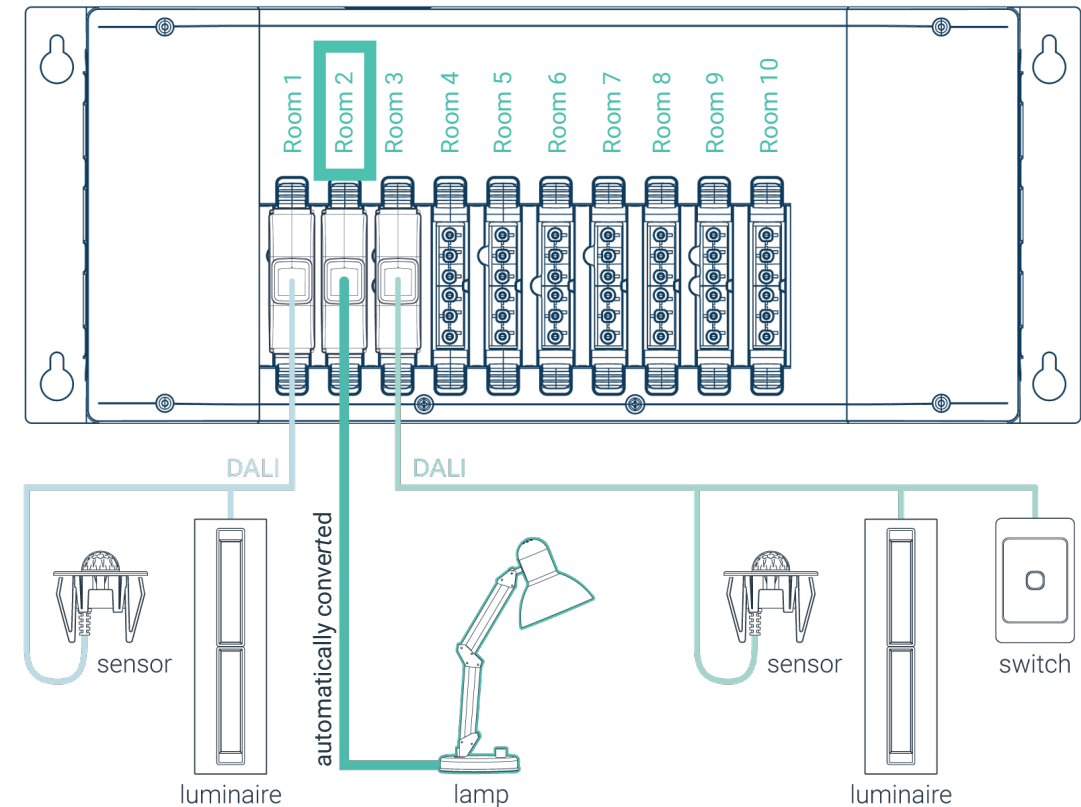
Building backbone

Fast 10/100 TCP/IP interfaces need to be connected to all RCMs and DALI 2.0 application controllers

floors cont.

floor router

room controller   room controller   room controller   DALI 2.0 application controller

Standard IT equipment

floor router

room controller   room controller   room controller

TCP / IP CAT5/6

router   internet modem

Off - site and local commissioning /
setup / emergency-testing

floors cont.

DALI fault protection

Problem

- Typically, a DALI fault, that shorts a line will cause a control failure on the entire DALI line

- A DALI short will leave the entire line in a failure state until the installer fixes the issues

- Some conditions which can cause this failure
    - Poor wiring
    - Broken device
    - Bad firmware or product

- A DALI short is sometimes hard to find
    - Where is the fault (up to 300 metres of cable)?
    - What device is causing it (up to 128 devices to isolate)?

Solution

- Our RCM has smarts built in which can identify a DALI short

- The RCM can isolate the room with the fault
    - Allows all other rooms to continue to function
    - Reduces the fault finding time (the area is broken down into rooms)

- The RCM periodically checks that the fault has been rectified and re-enables the room when the fault is fixed

Through life maintenance

Problem

- Faults or failures of light fittings occur from time to time

- Most systems require a technician to fix or replace the light fittings
  In some cases they require both a technician and an electrician

- Most systems will not control the repaired lighting until the technician has recommissioned the device

- With most systems re-commissioning is expensive

Solution

- Buildings using RCM's are easier to maintain

- When a light fitting is replaced, the system will automatically
  - Address the replaced fitting
  - Assign the fitting to the room
  - Setup the new fitting to work with sensors and switches in the room

- For most installations the users and tenants will see the device as working correctly as soon as it is replaced

- No commissioning is required to get to this state

- Multiple devices can be replaced at once

Work-station control

Problem

- Giving users individual control is difficult, costly and time consuming

- Users want to control lighting and blinds to their own requirements

- A switch is not always present

Solution

Room control + USB interface

- Installing a zencontrol USB interface into a room can give users control of lighting devices and blinds in that room

- Simple wiring on DALI line.

- Does not require IT commissioning or setup (excluding installing the software)

- Works out of the box

Features

- A user can create custom switches and scenes on their computer

- Rearranging or moving computers does not require extra commissioning

- Move to another room and control the new room