Grenton

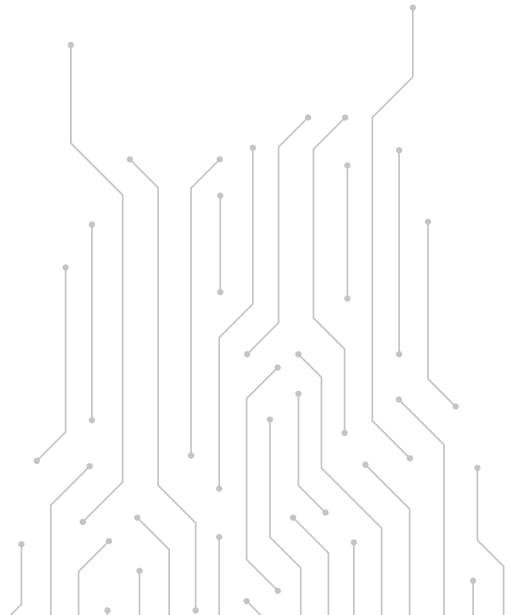
Installation guidelines

2025

Table of contents

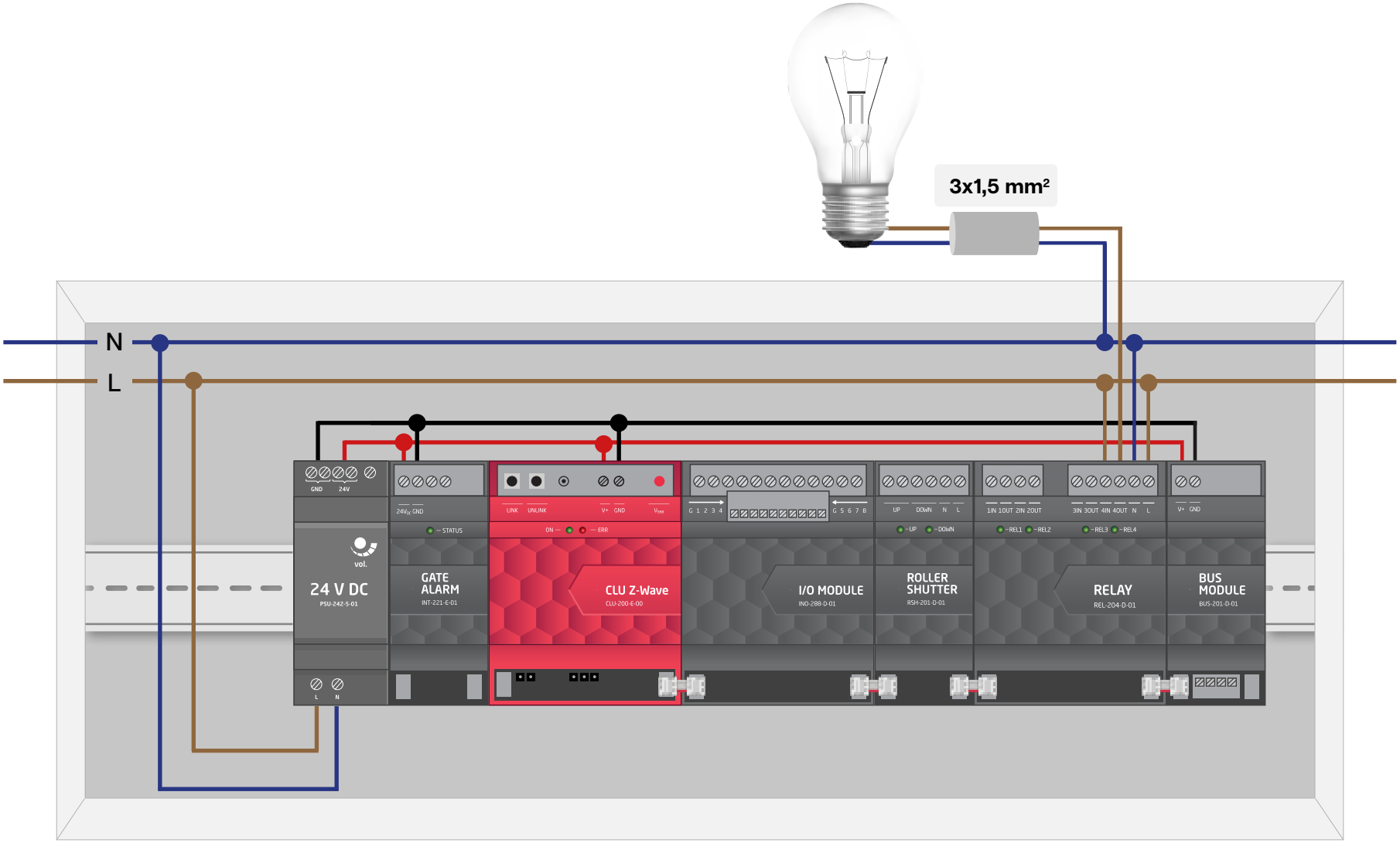
Table of contents

Building wiring



Electrical installation - 230V AC lighting

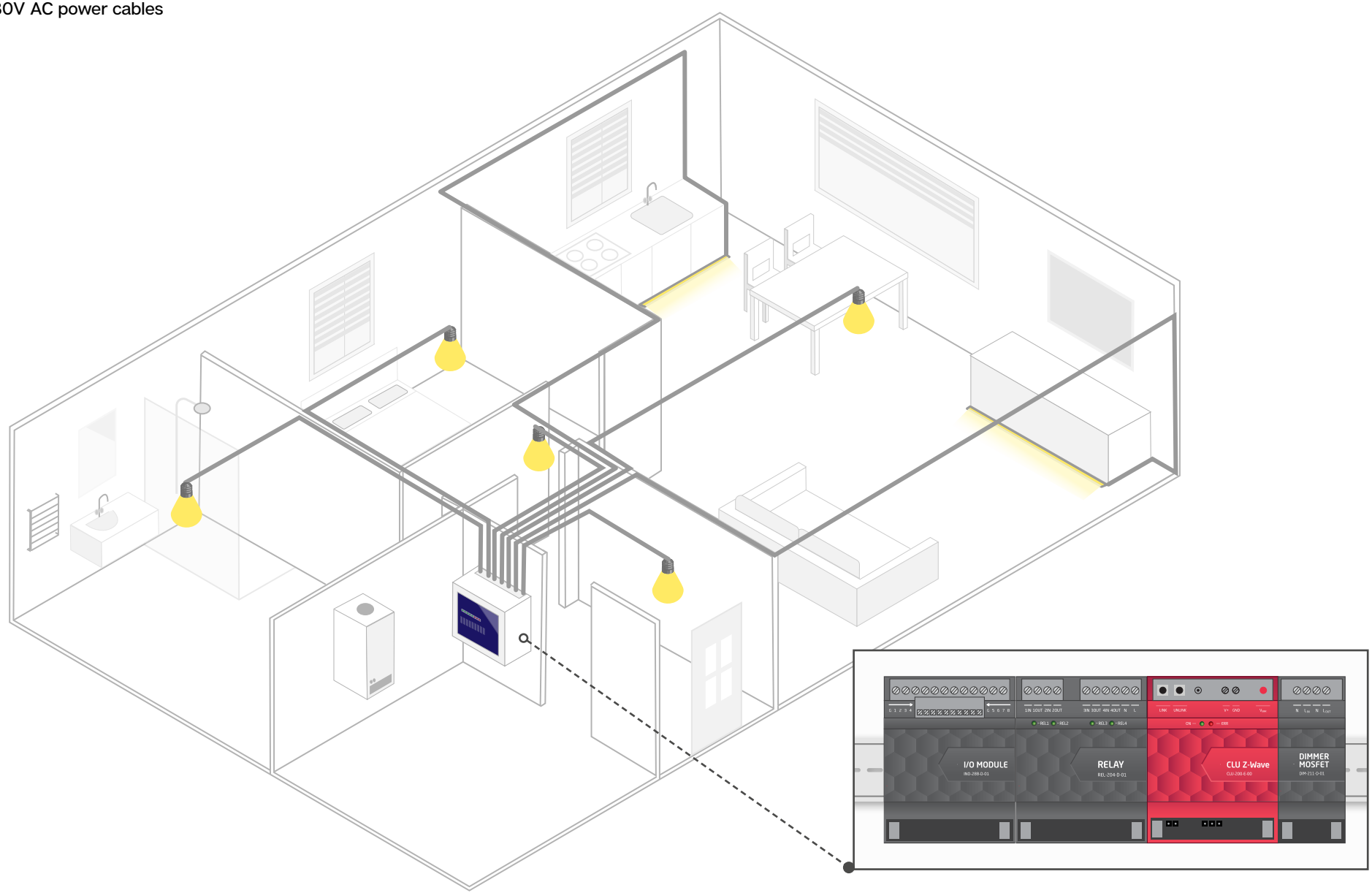
230V AC power cables



back to Table of contents

Electrical installation - 230V AC lighting

230V AC power cables

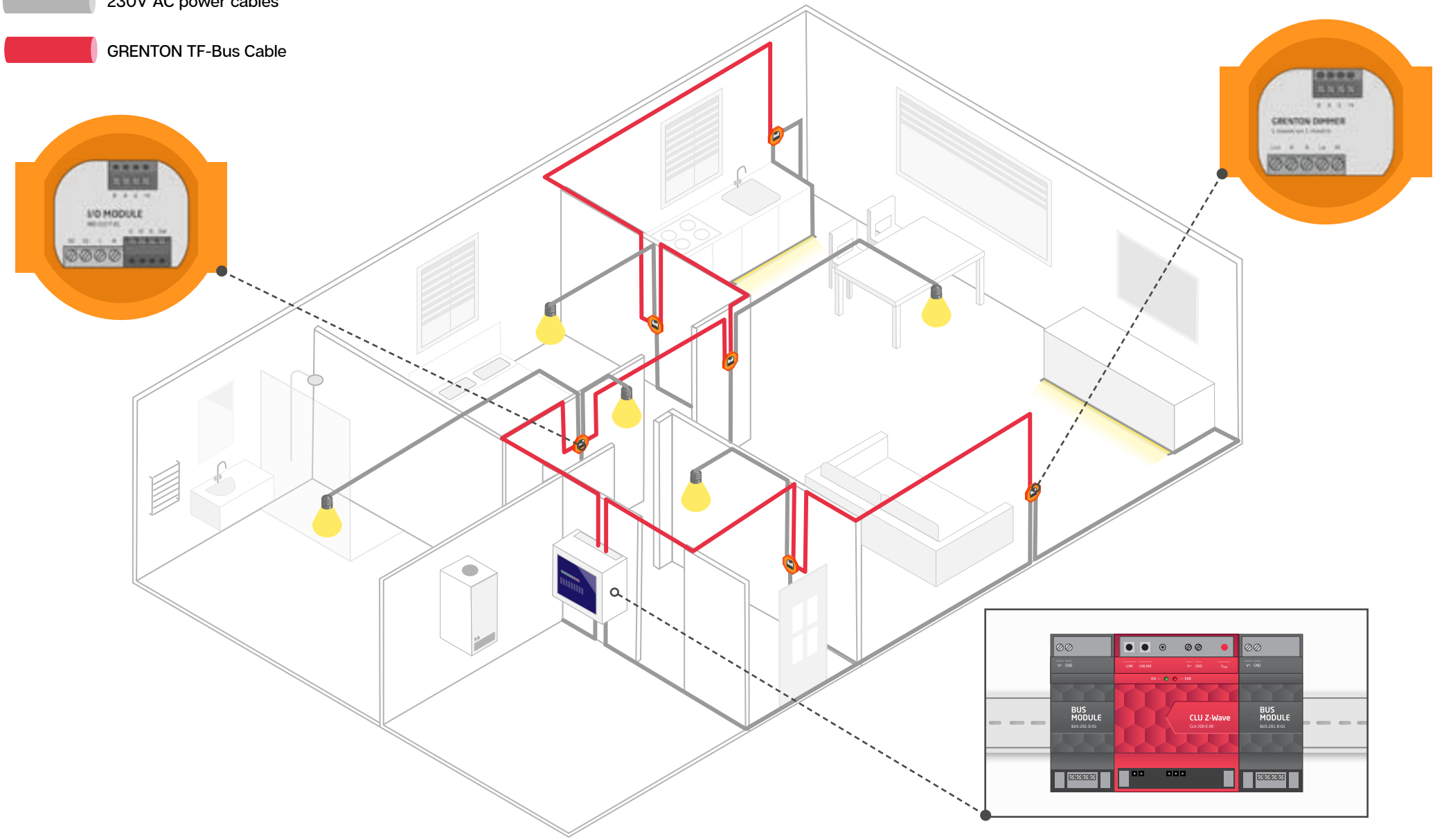


back to Table of contents

Electrical installation - 230V AC lighting

230V AC power cables

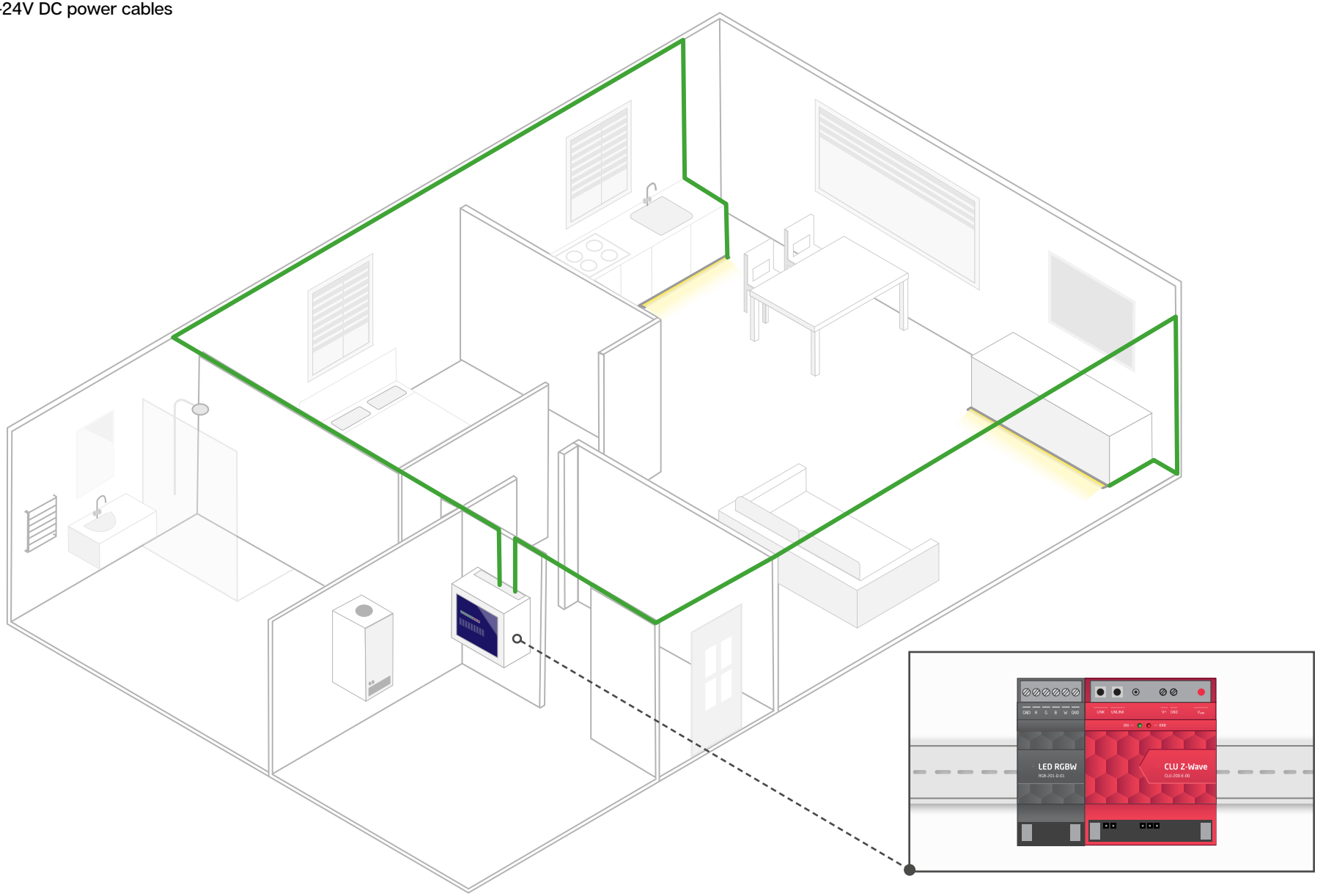
GRENTON TF-Bus Cable



back to Table of contents

Electrical installation - 12-24V DC lighting

12-24V DC power cables



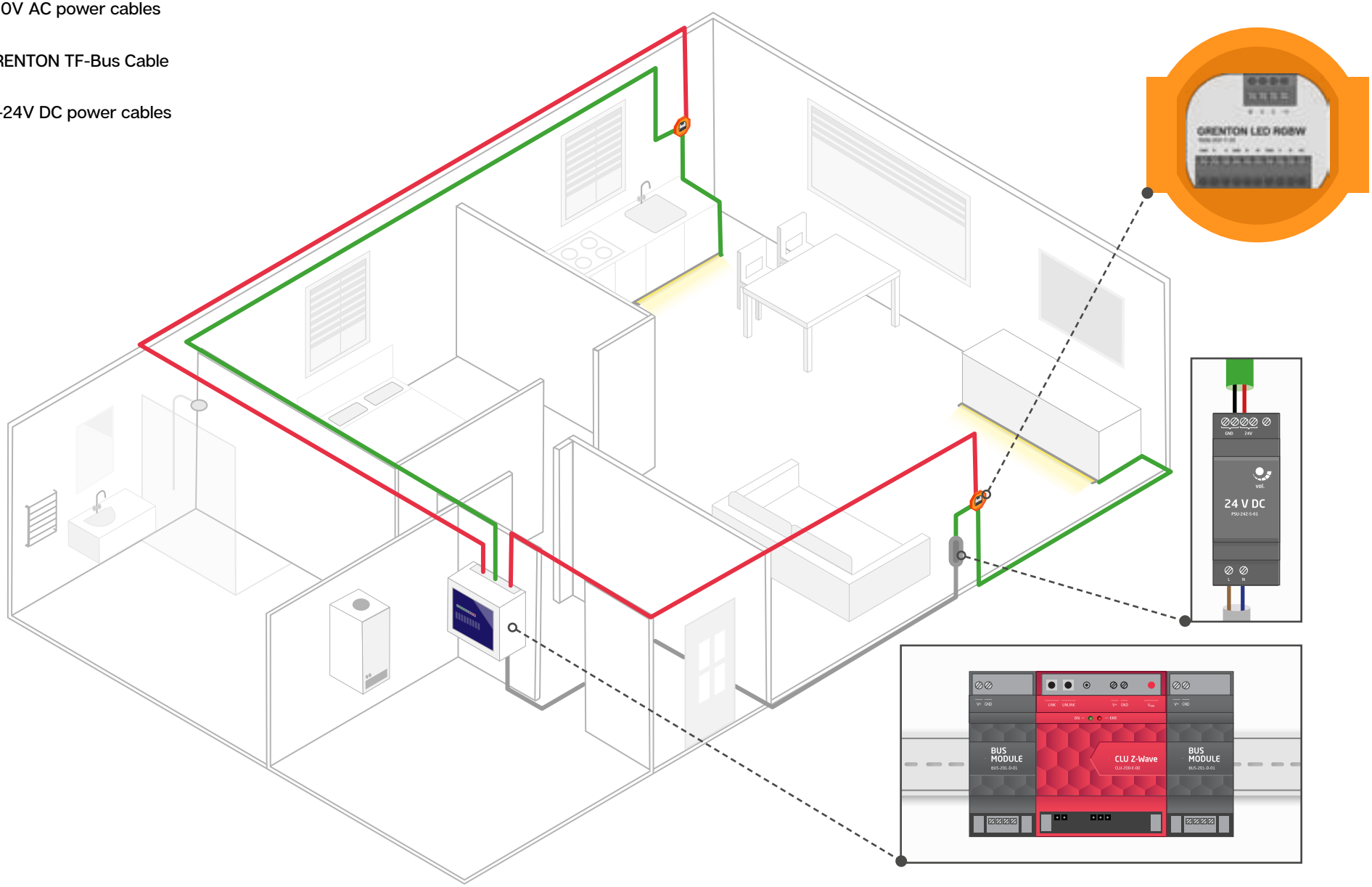
back to Table of contents

Electrical installation - 12-24V DC lighting

230V AC power cables

GRENTON TF-Bus Cable

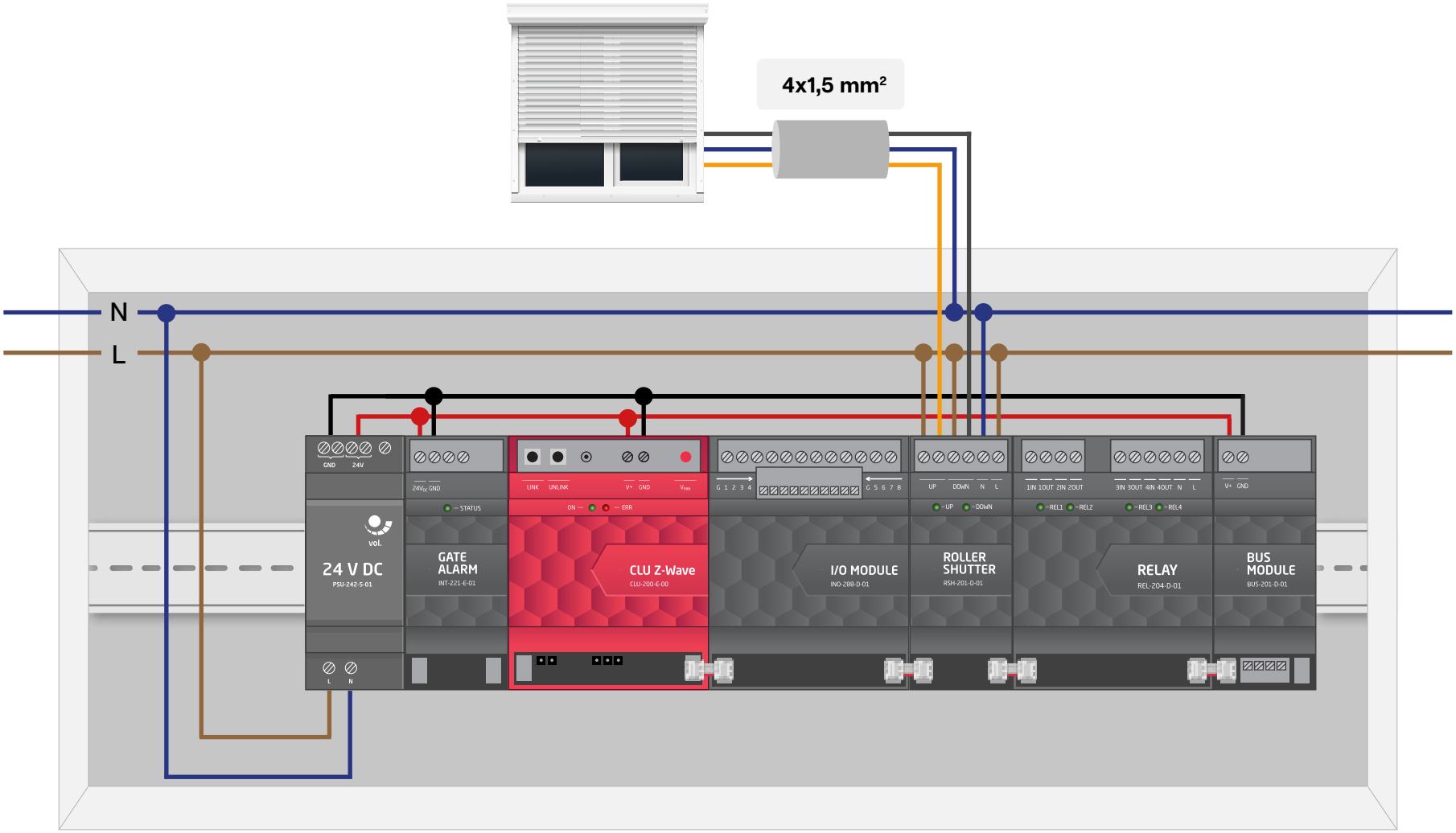
12-24V DC power cables



back to Table of contents

Electrical installation - roller shutters

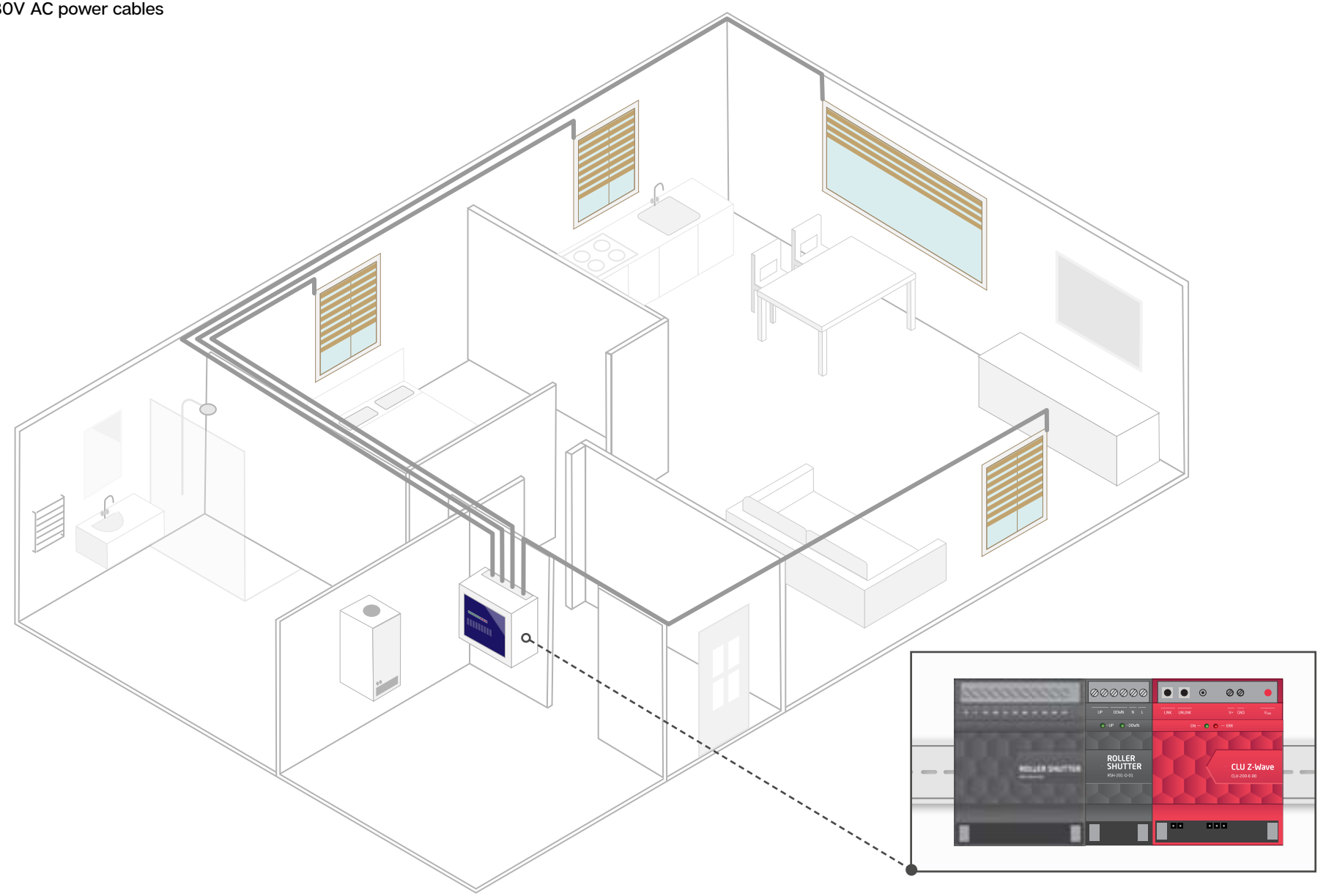
230V AC power cables



back to Table of contents

Electrical installation - roller shutters

230V AC power cables

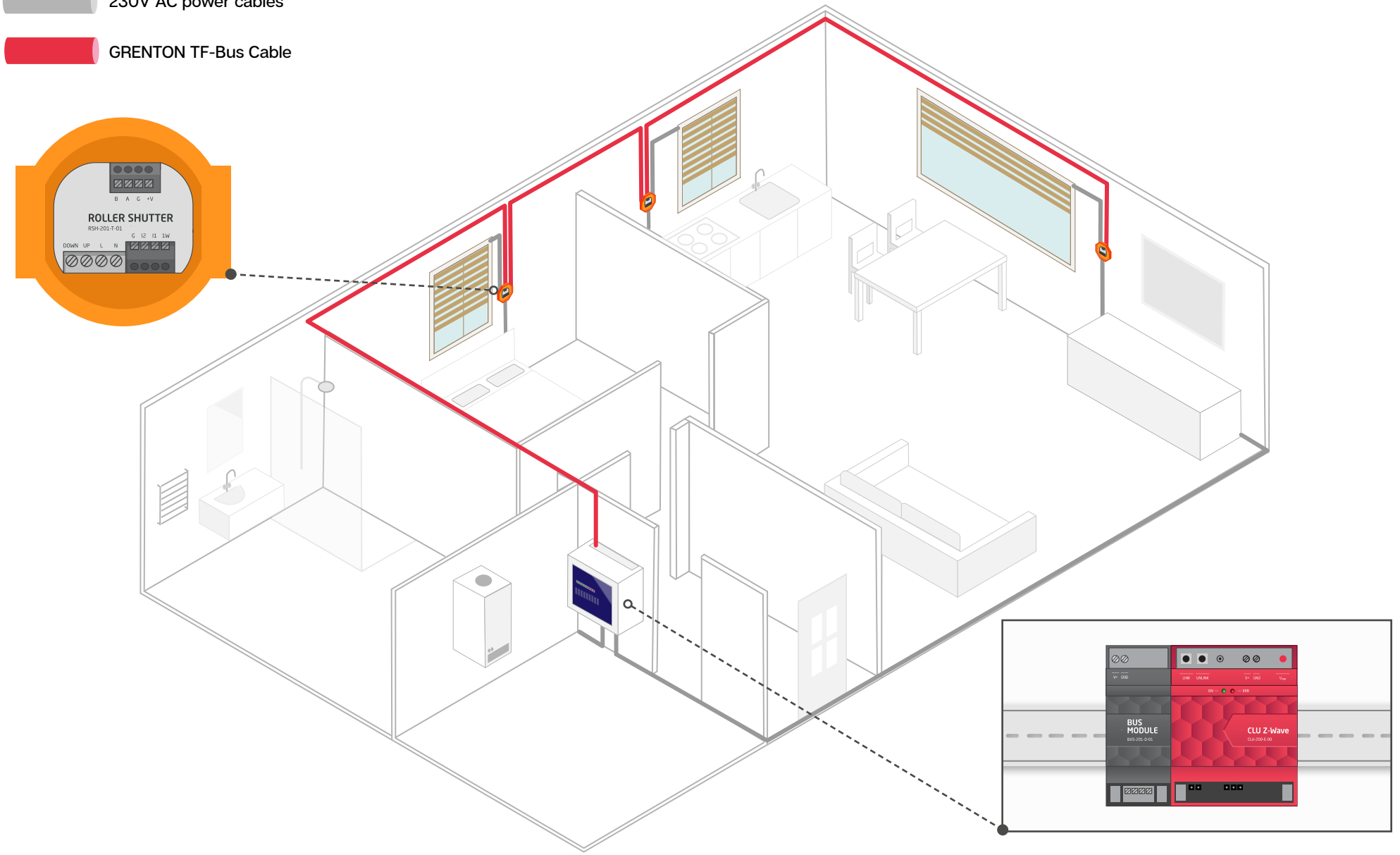


back to Table of contents

Electrical installation - roller shutters

230V AC power cables

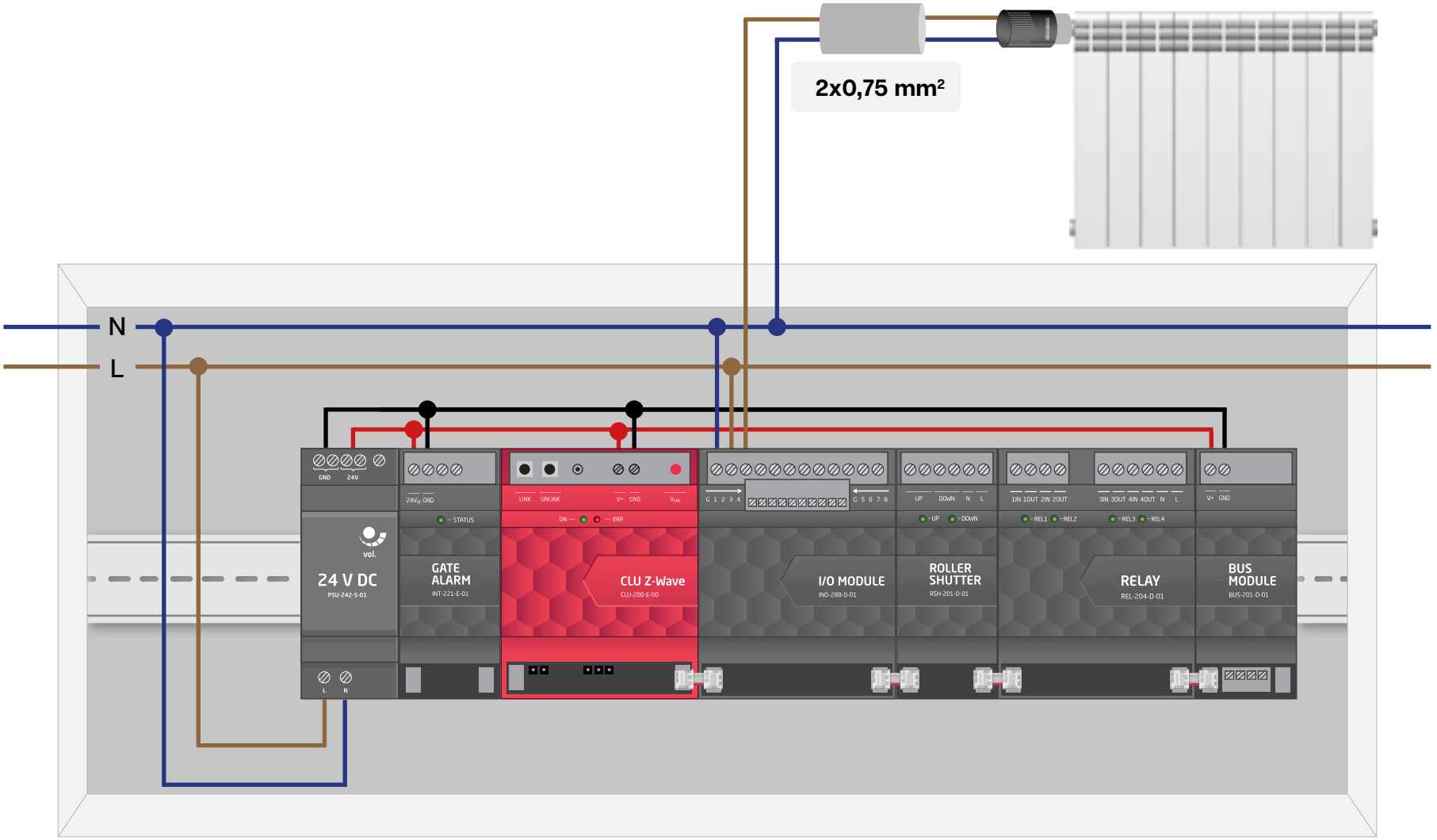
GRENTON TF-Bus Cable



back to Table of contents

Electrical installation - heating

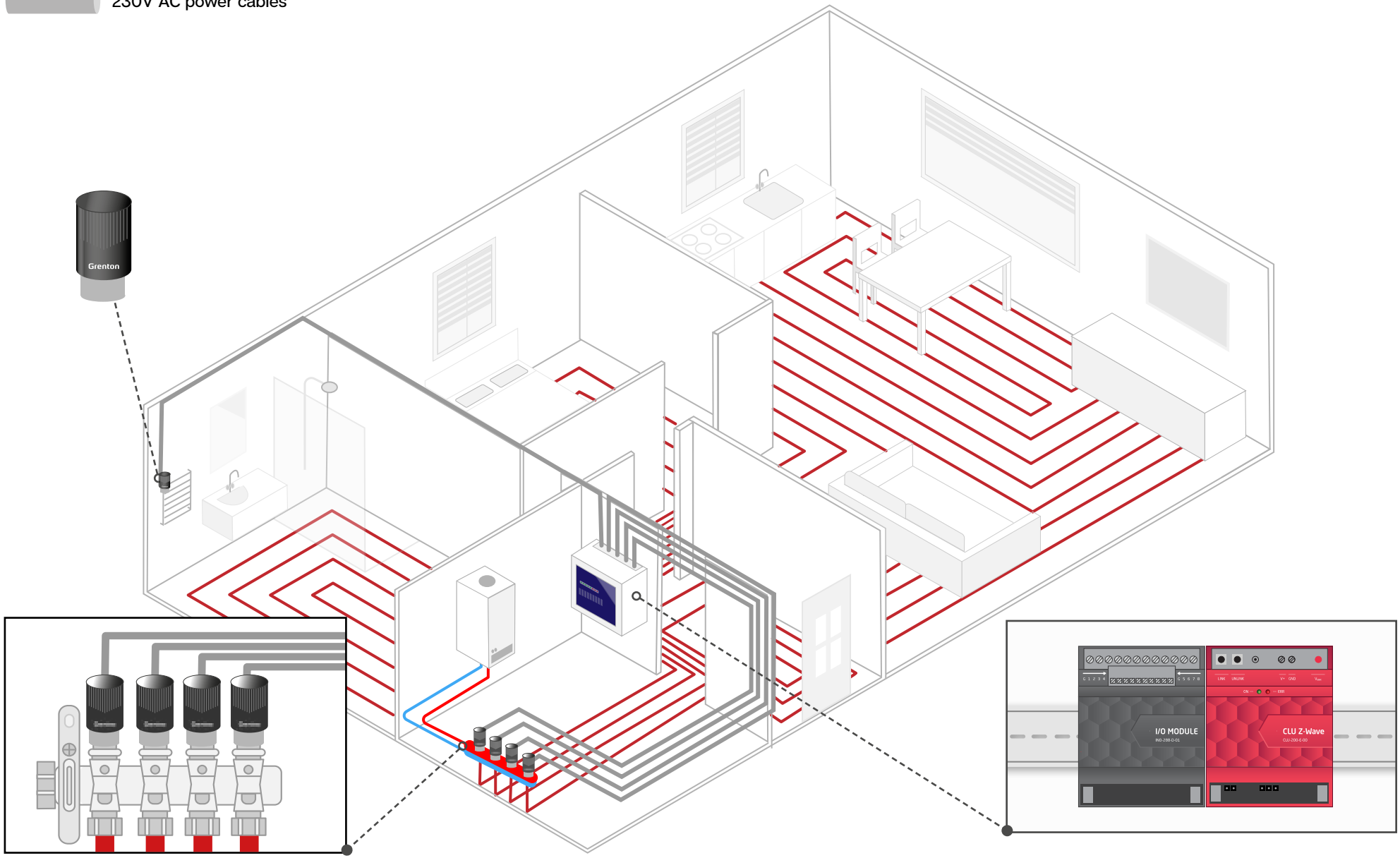
230V AC power cables



back to Table of contents

Electrical installation - heating

230V AC power cables

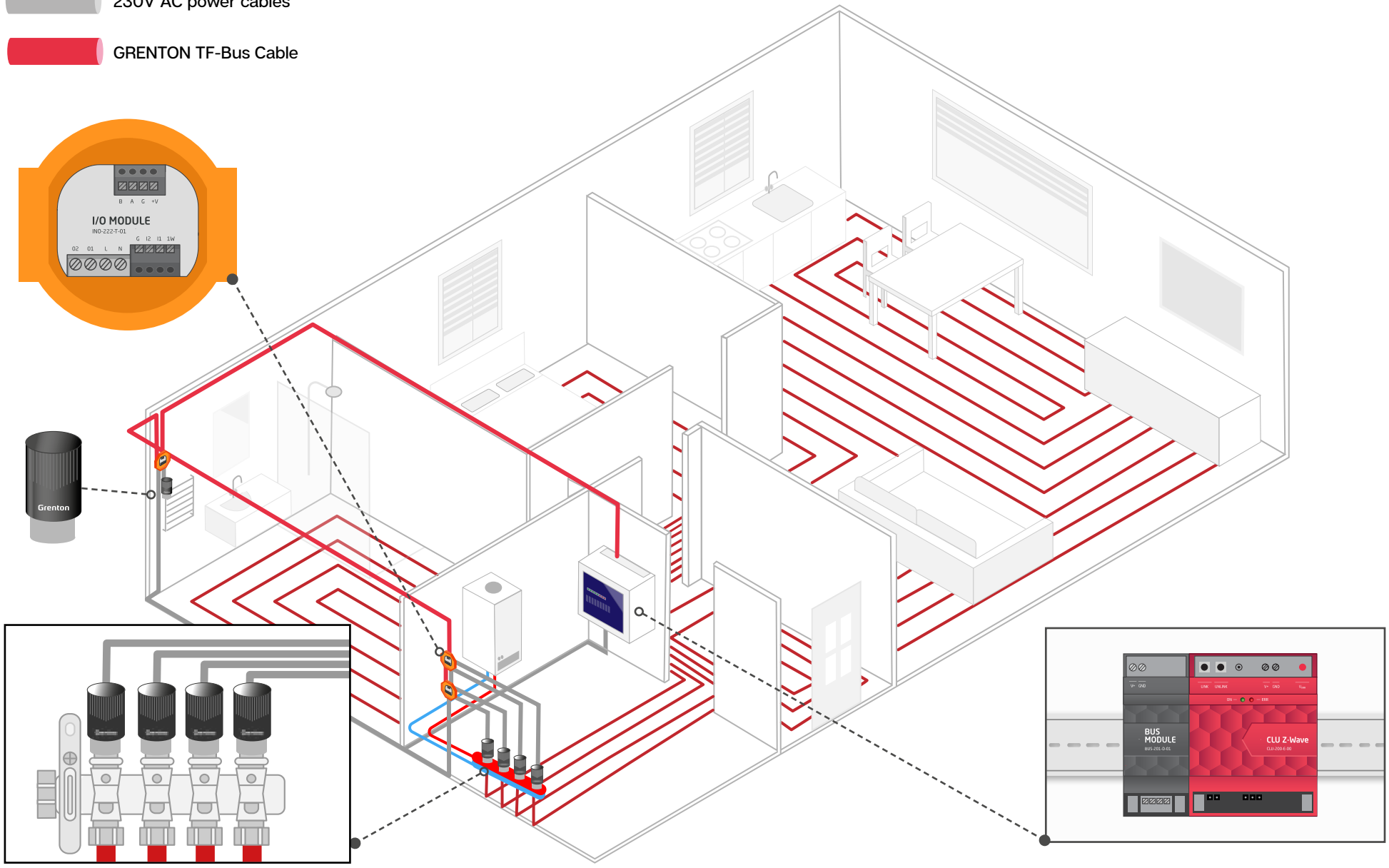


back to Table of contents

Electrical installation - heating

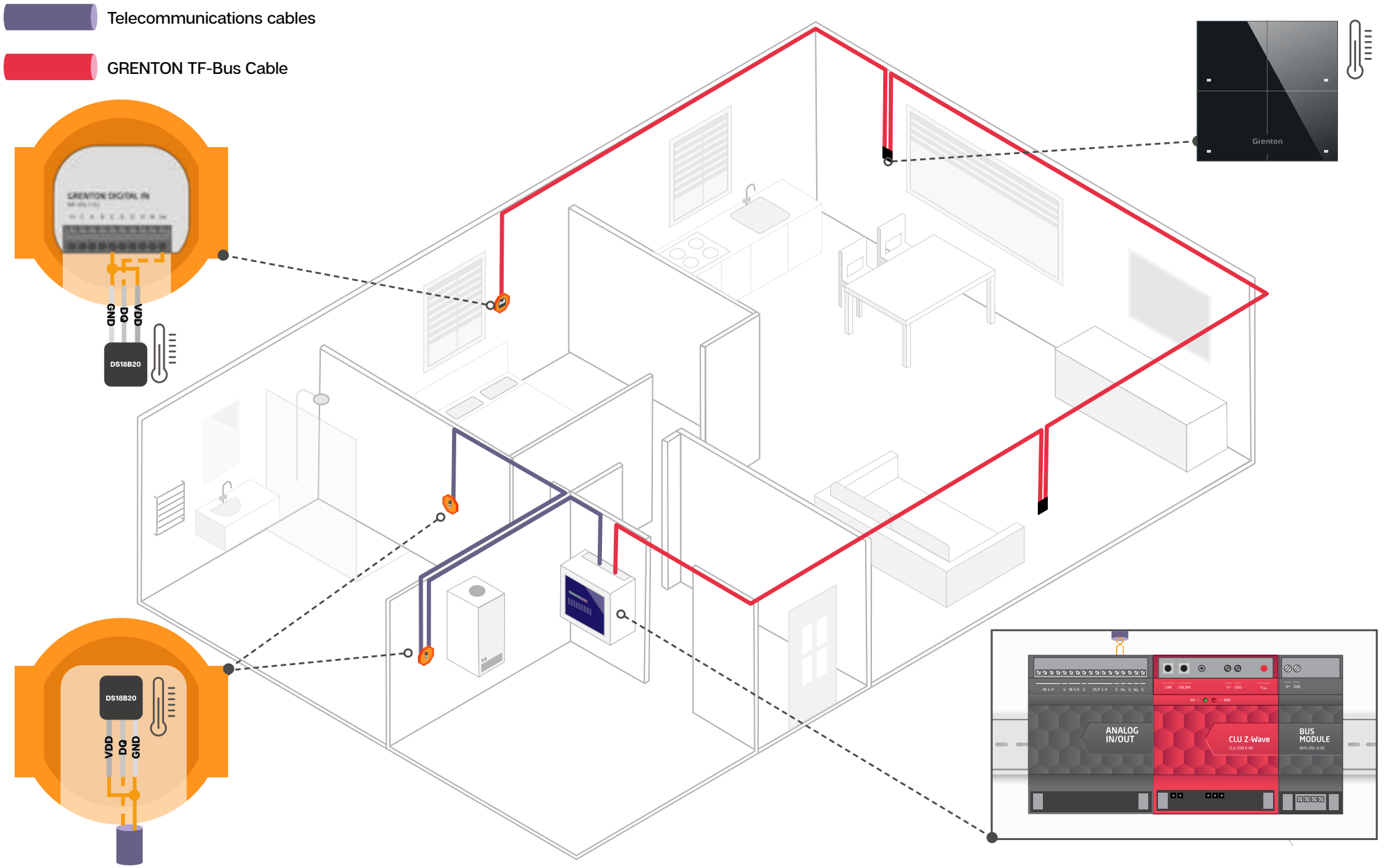
230V AC power cables

GRENTON TF-Bus Cable



back to Table of contents

Electrical installation - heating: temperature measurement

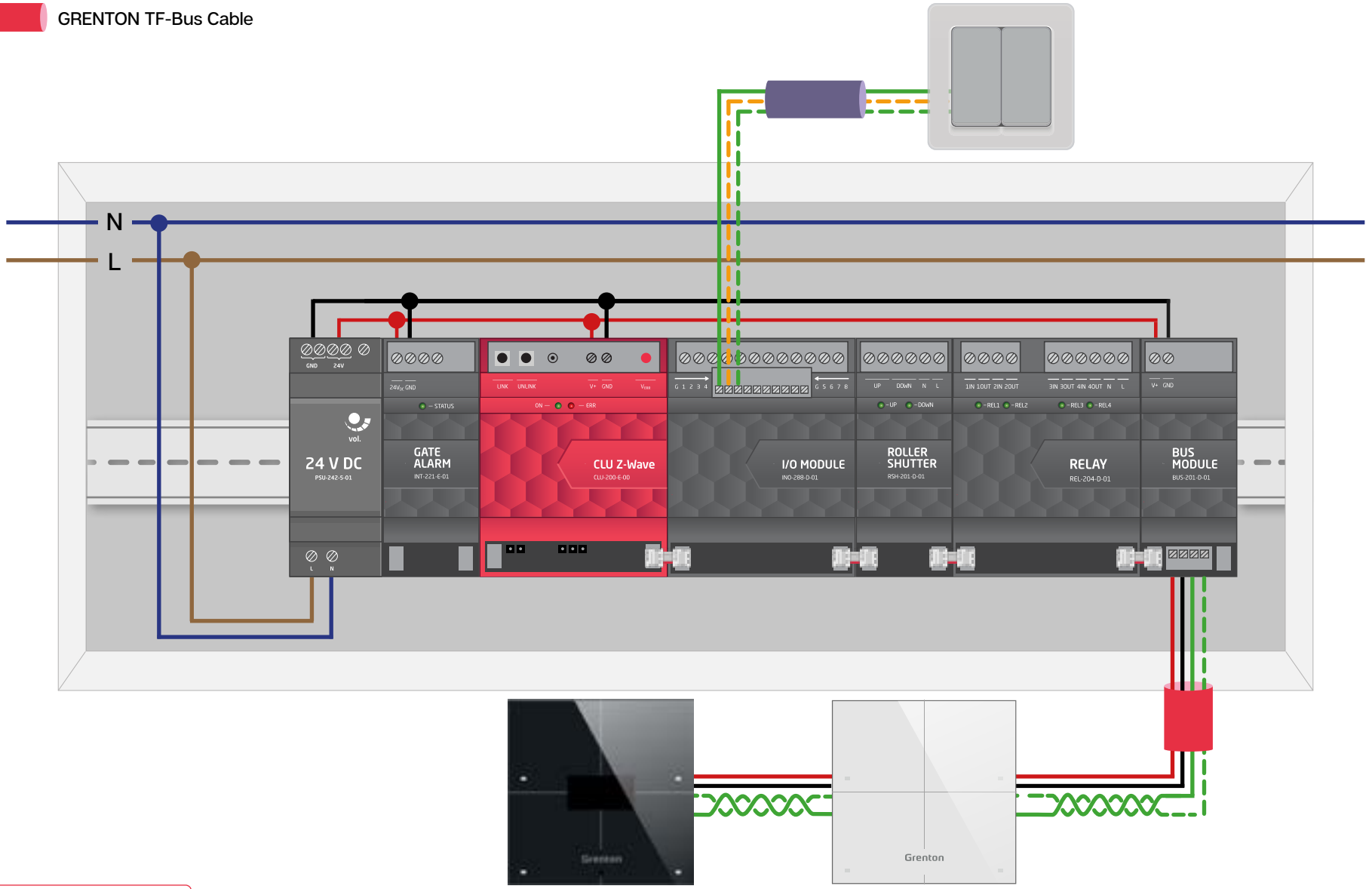


back to Table of contents

Electrical installation - touch panels and switches

Telecommunications cables

GRENTON TF-Bus Cable

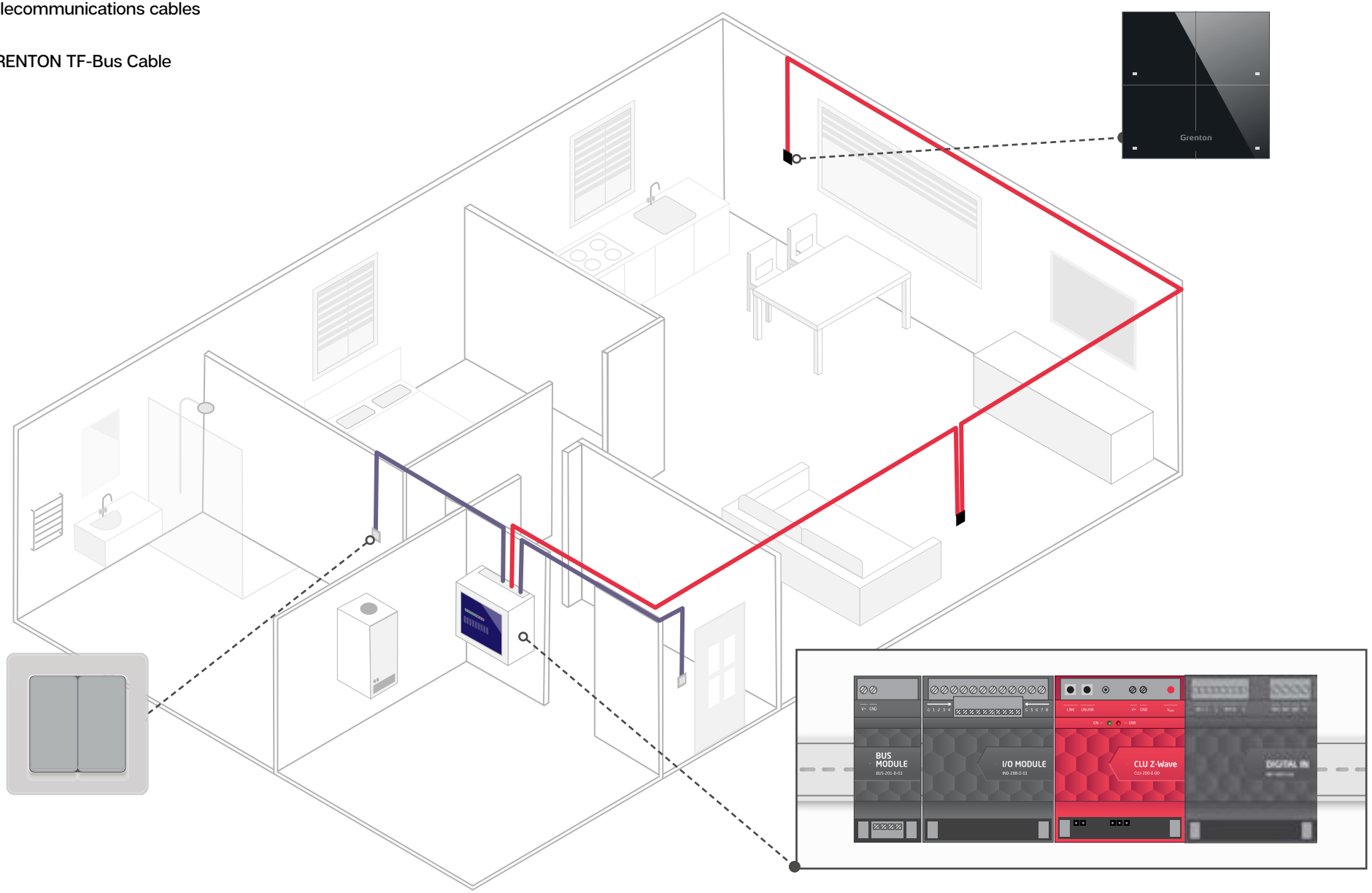


back to Table of contents

Electrical installation - touch panels and switches

Telecommunications cables

GRENTON TF-Bus Cable

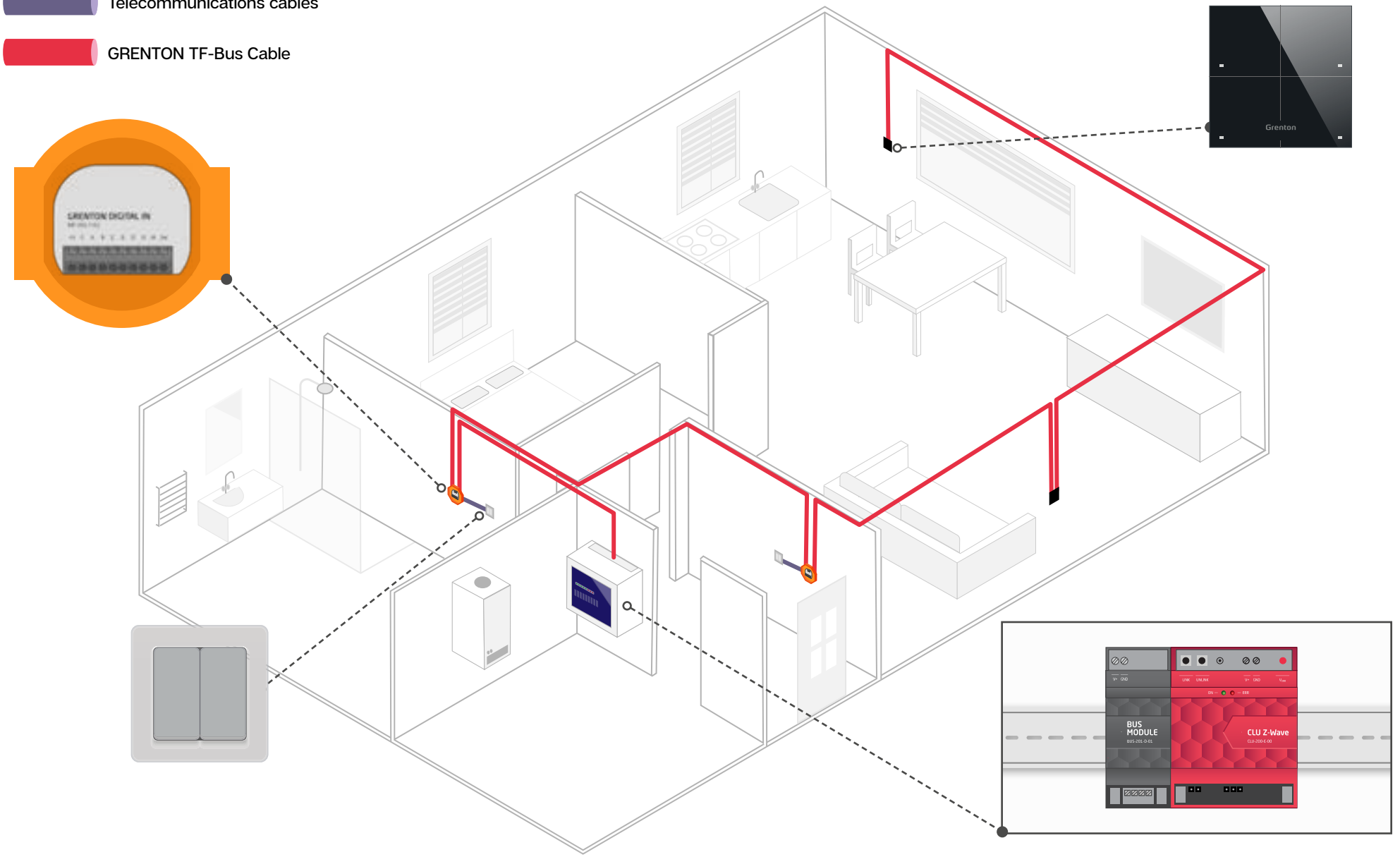


back to Table of contents

Electrical installation - touch panels and switches

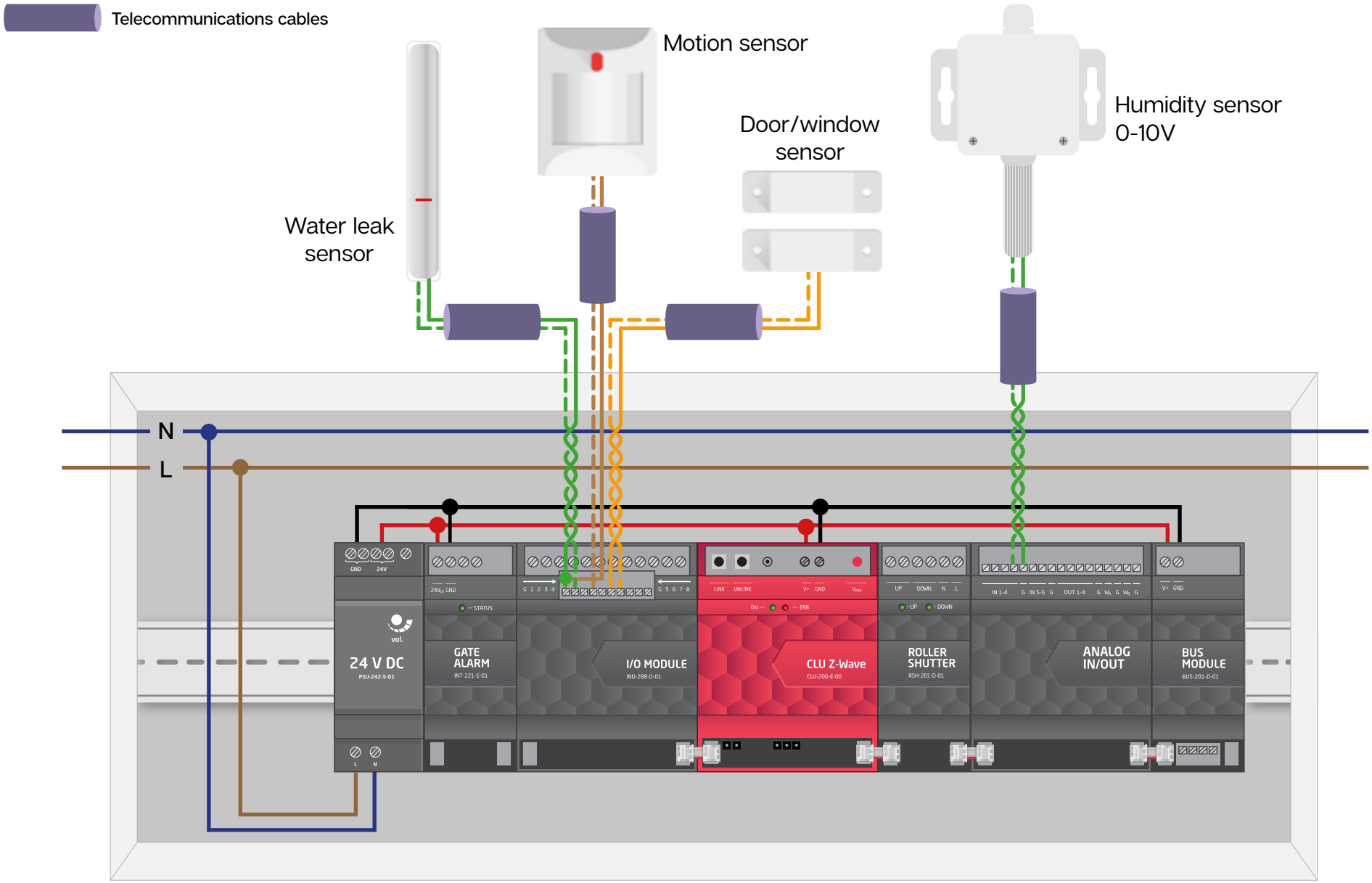
Telecommunications cables

GRENTON TF-Bus Cable



back to Table of contents

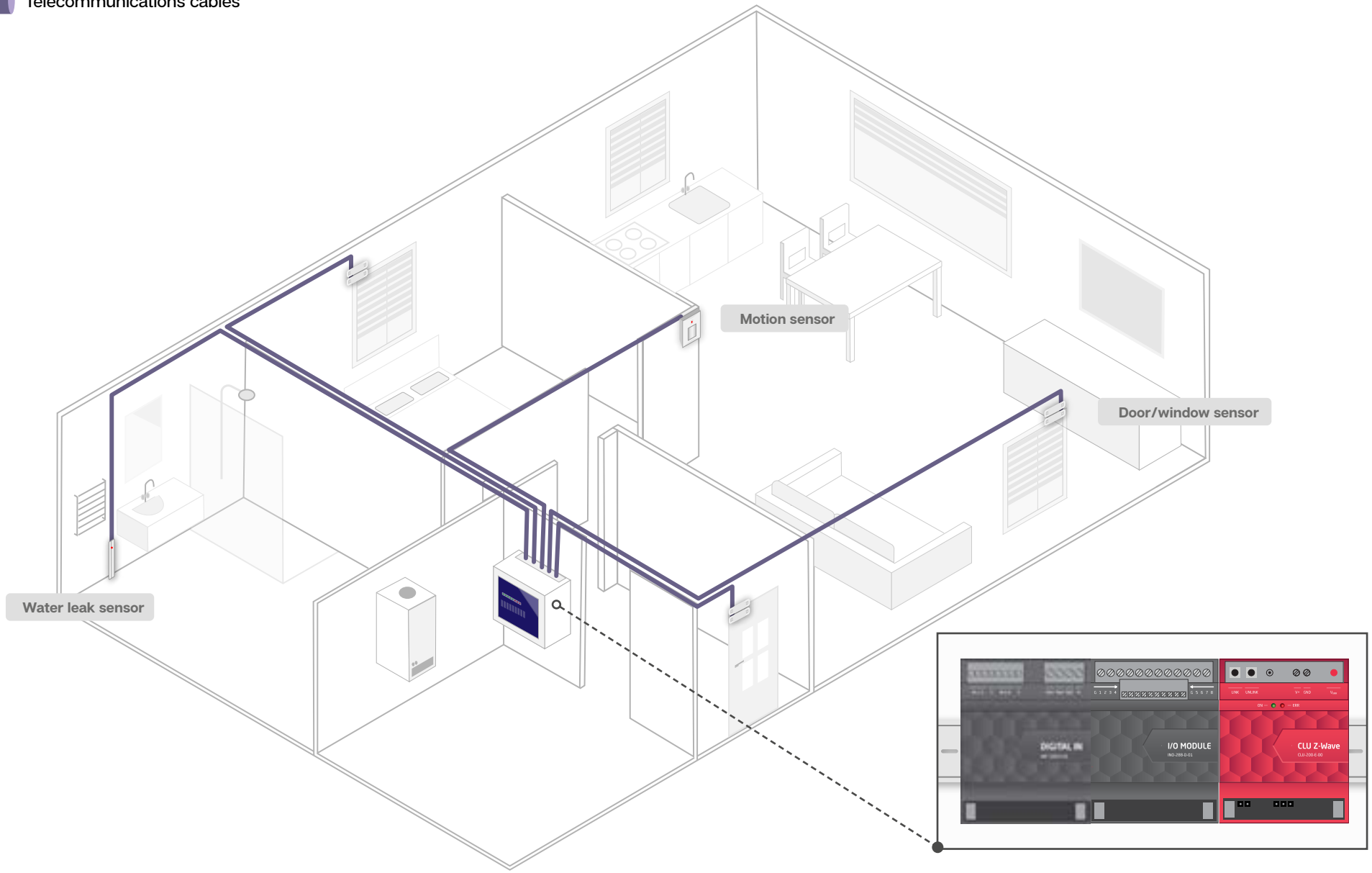
Electrical installation - sensors



back to Table of contents

Electrical installation - sensors

Telecommunications cables

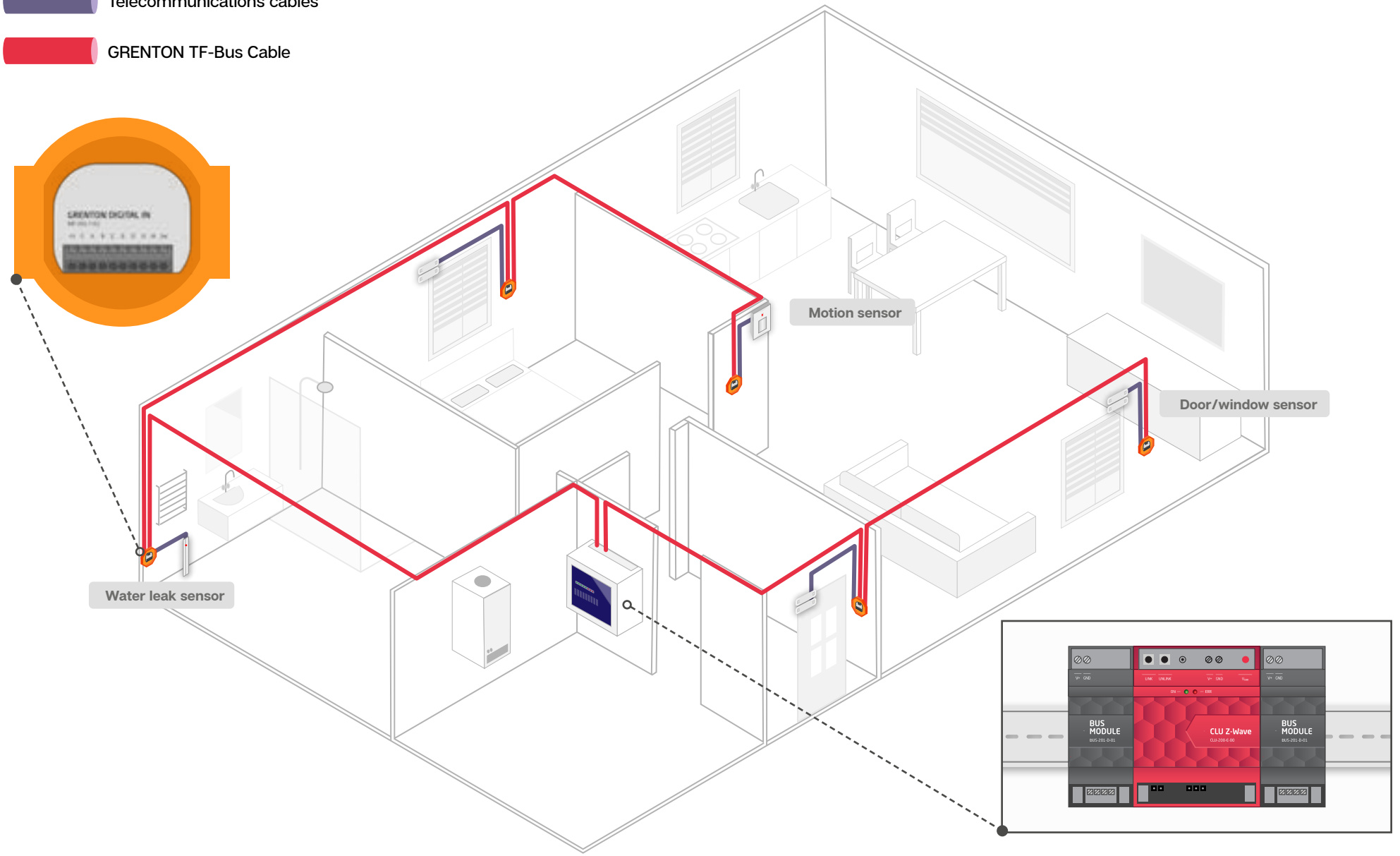


back to Table of contents

Electrical installation - sensors

Telecommunications cables

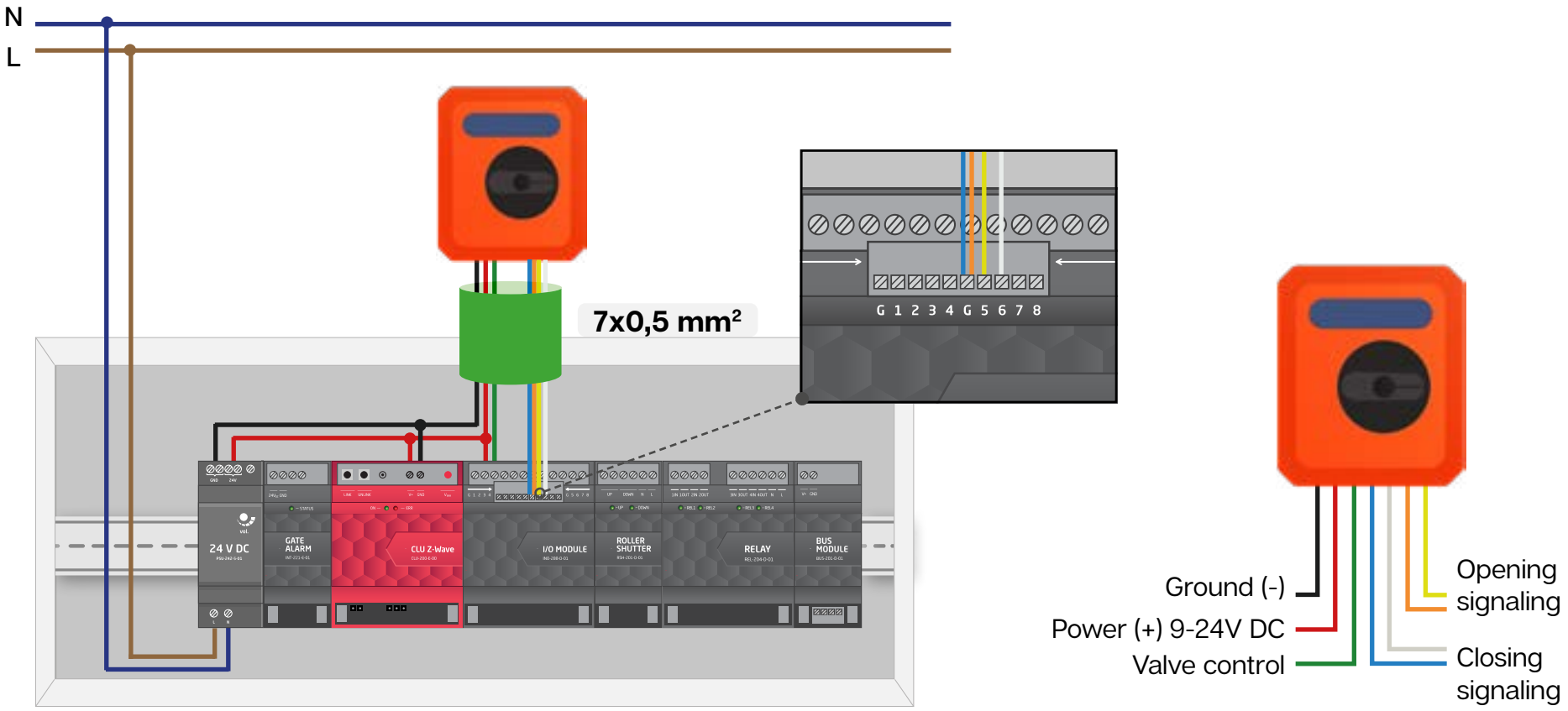
GRENTON TF-Bus Cable



back to Table of contents

Electrical installation - Grenton water valve 24 V DC, 7-wire

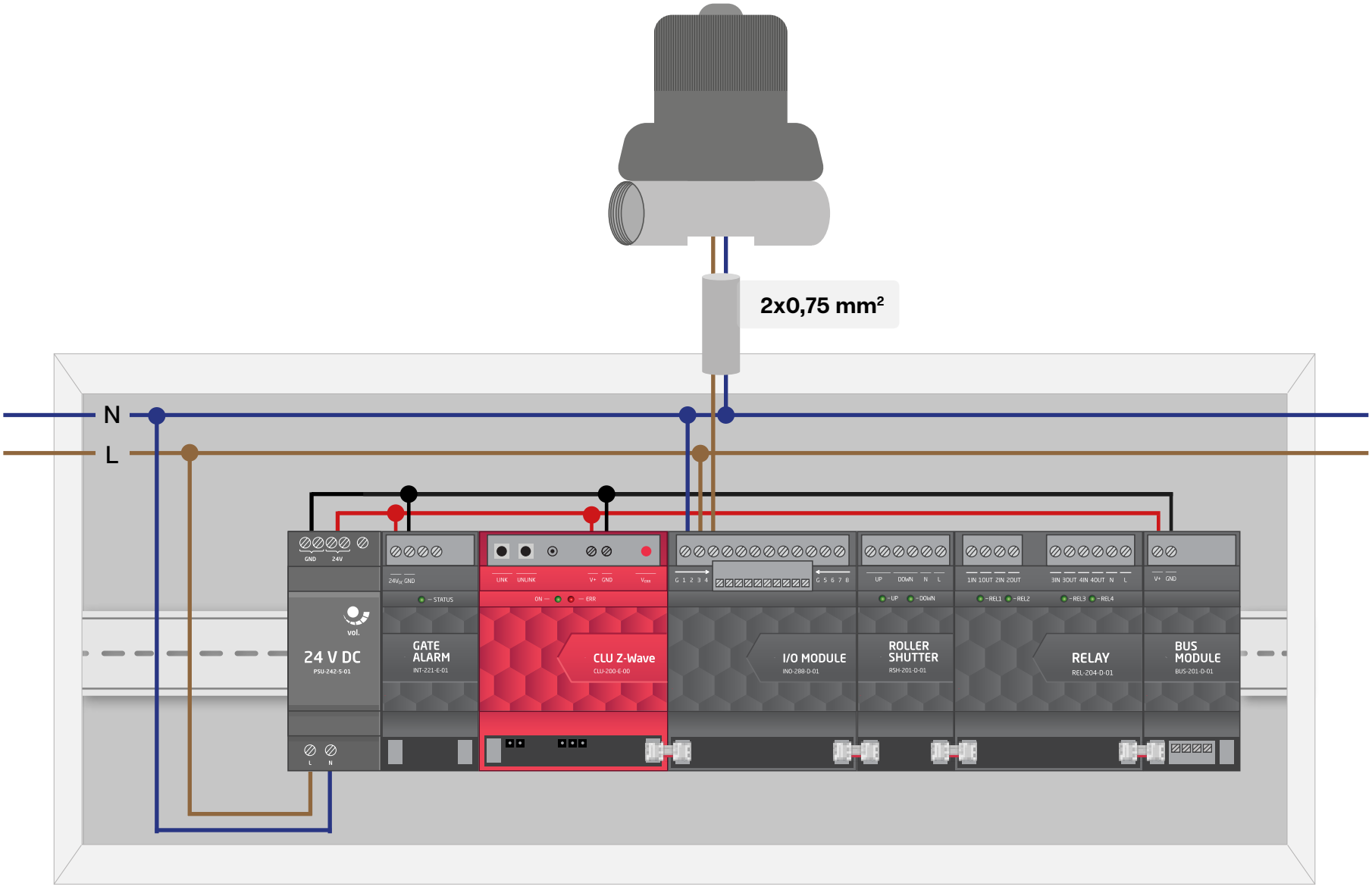
12-24V DC power cables



back to Table of contents

Electrical installation - water valves

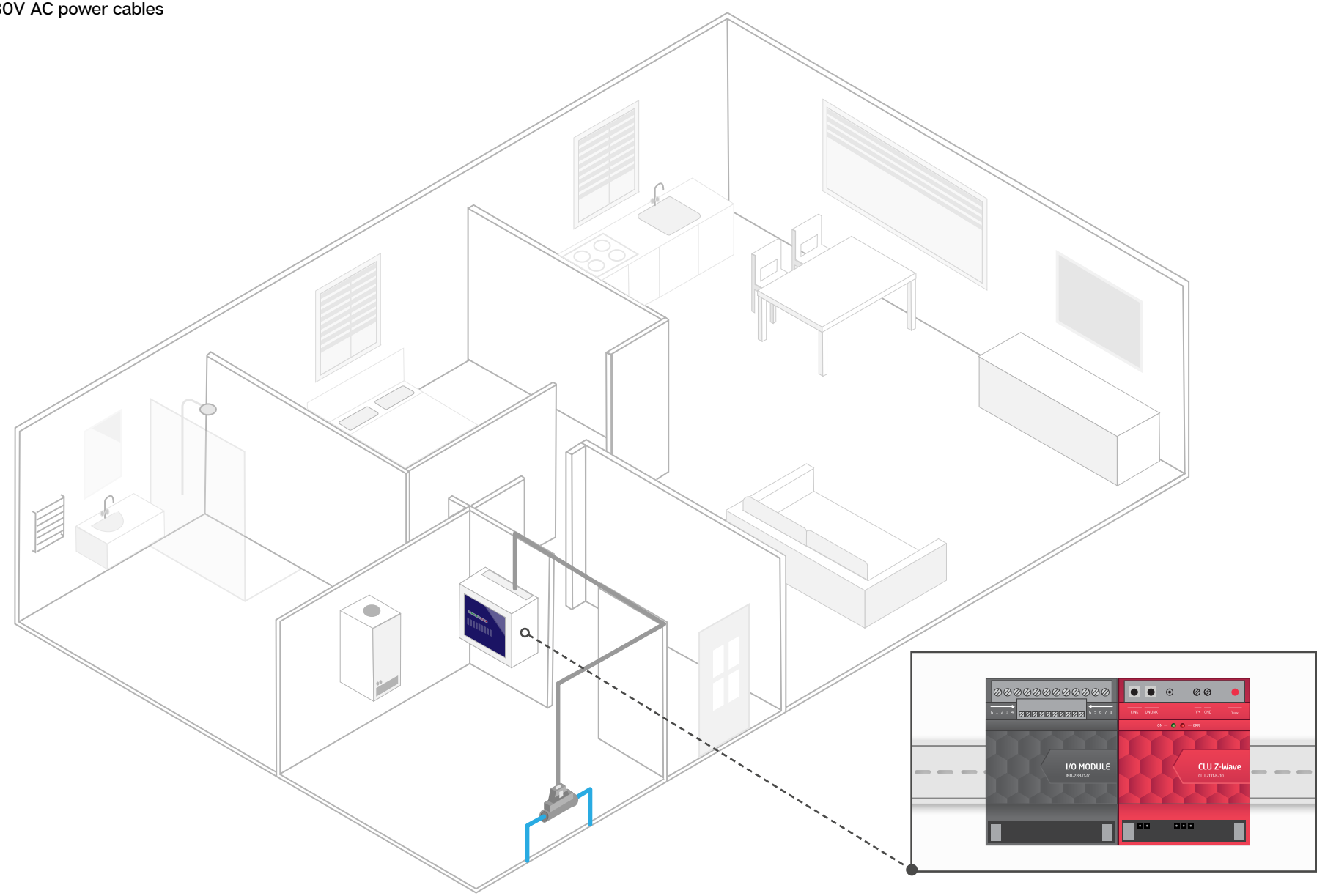
230V AC power cables



back to Table of contents

Electrical installation - water valves

230V AC power cables

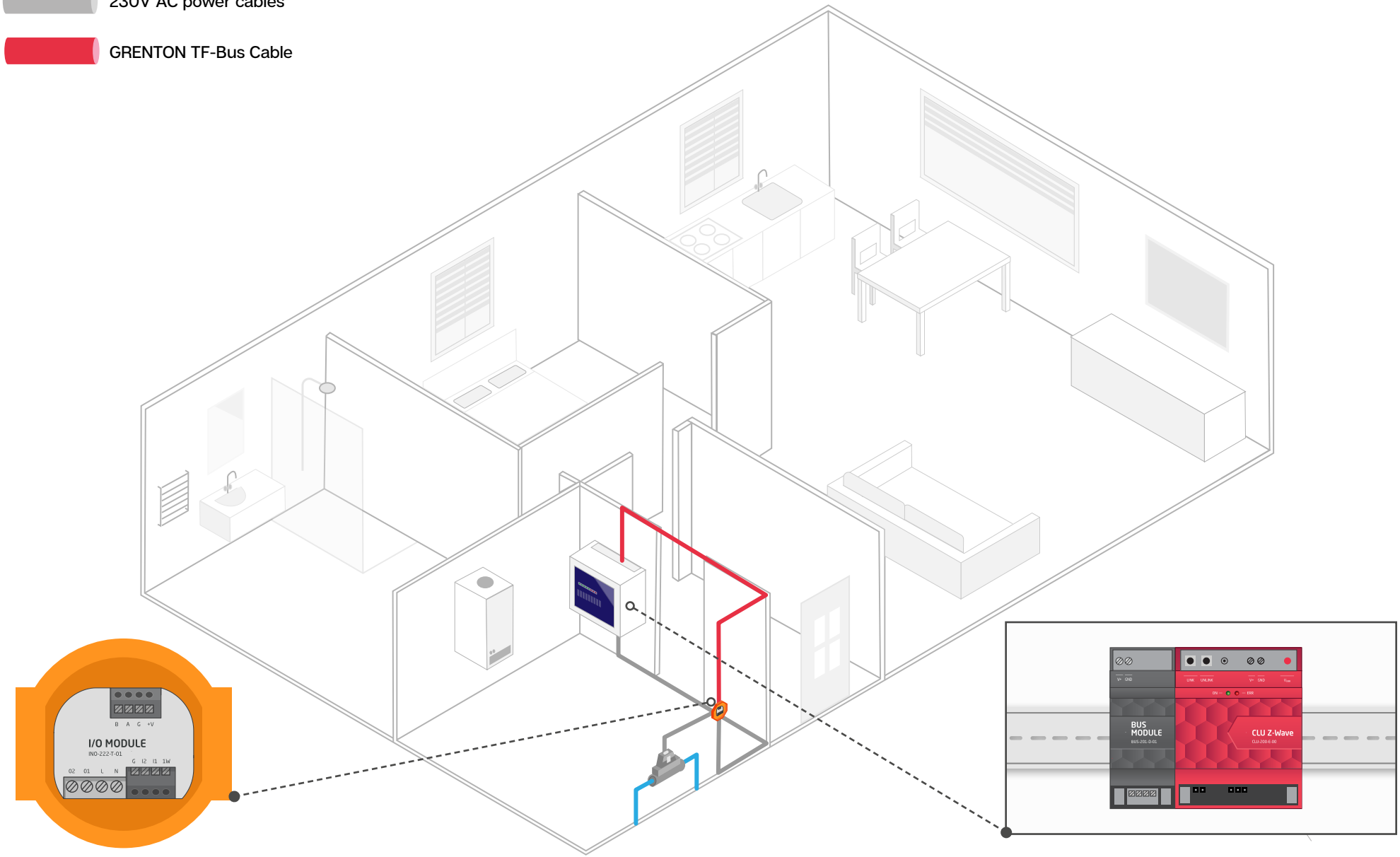


back to Table of contents

Electrical installation - water valves

230V AC power cables

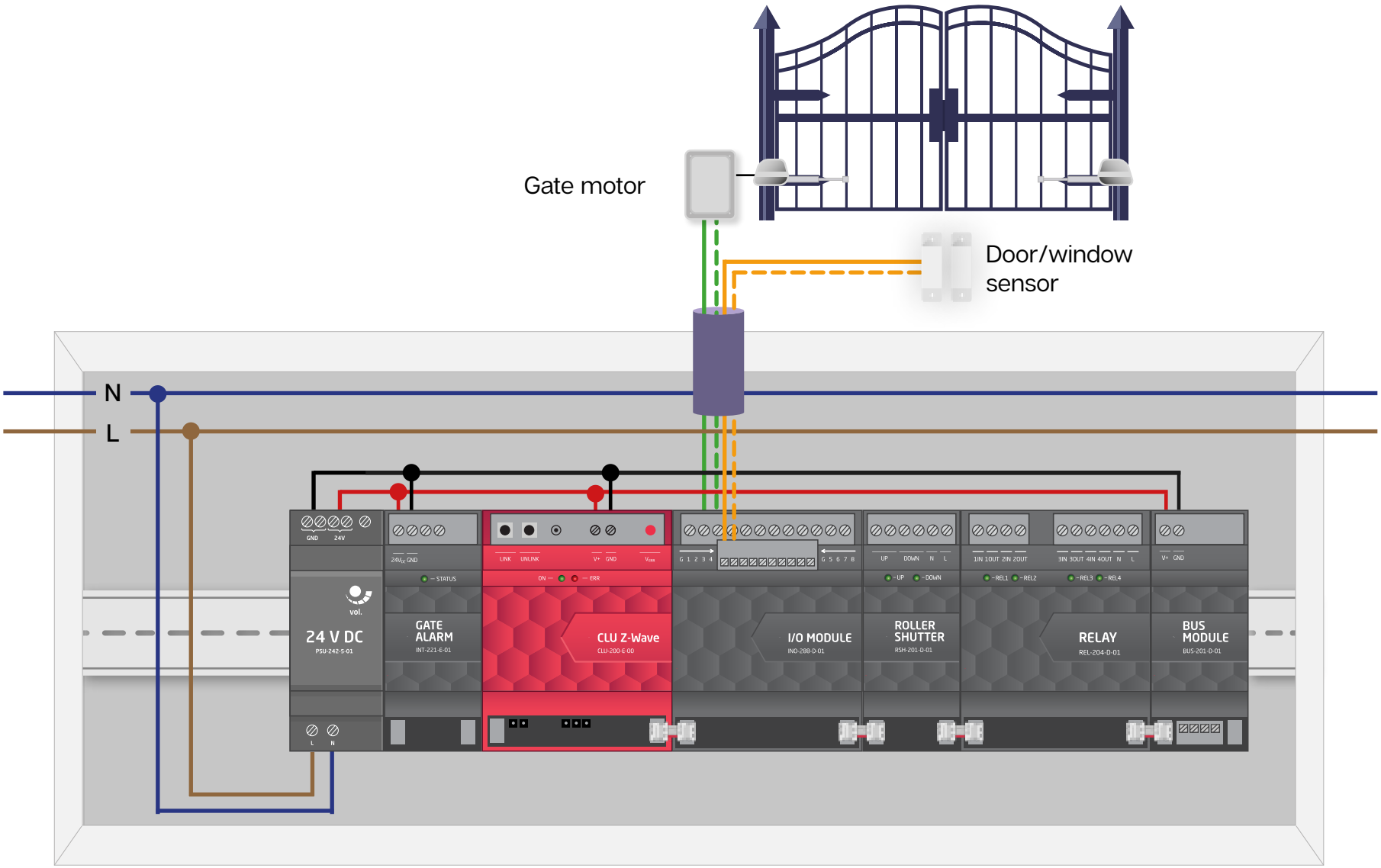
GRENTON TF-Bus Cable



back to Table of contents

Electrical installation - gates

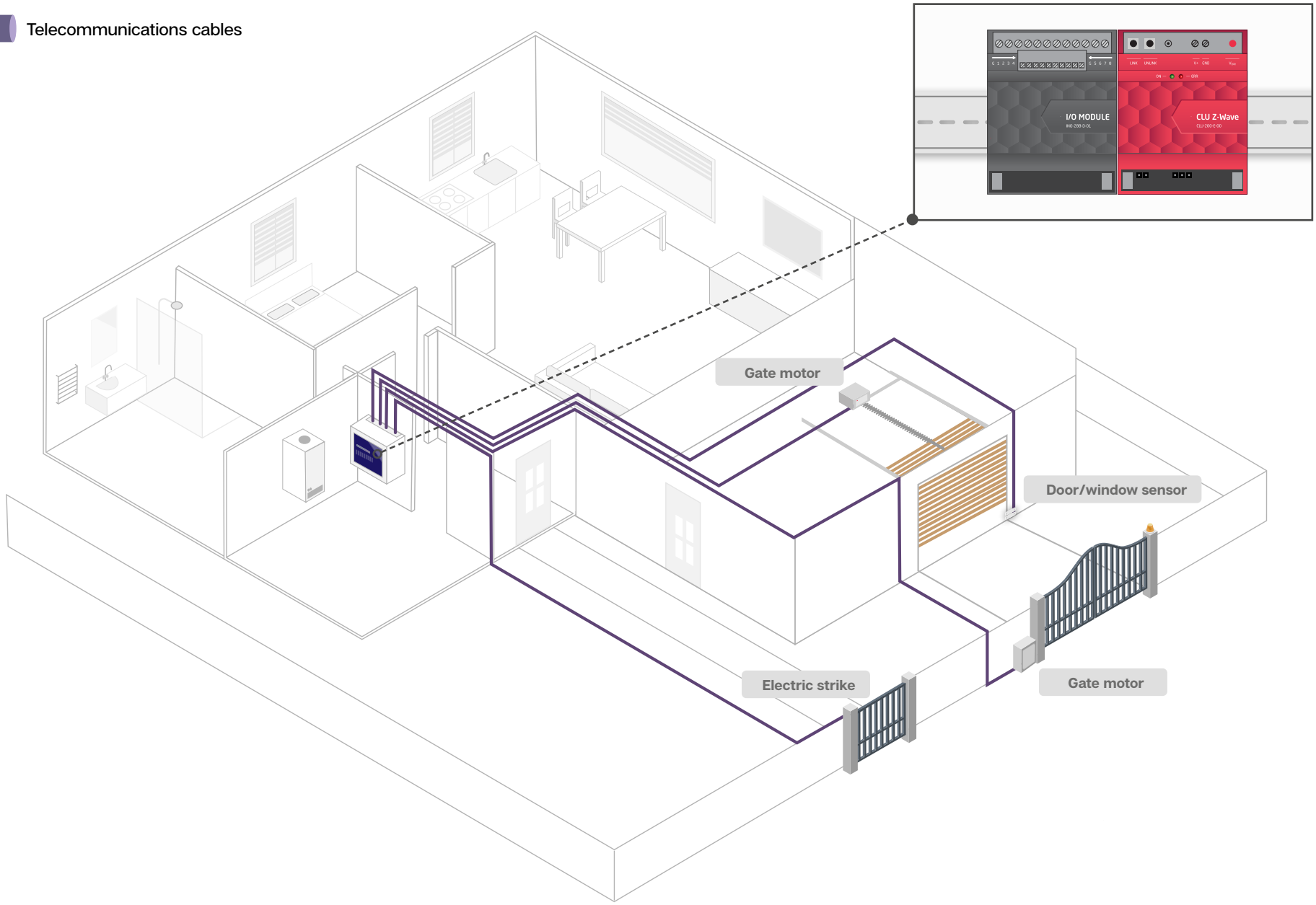
Telecommunications cables



back to Table of contents

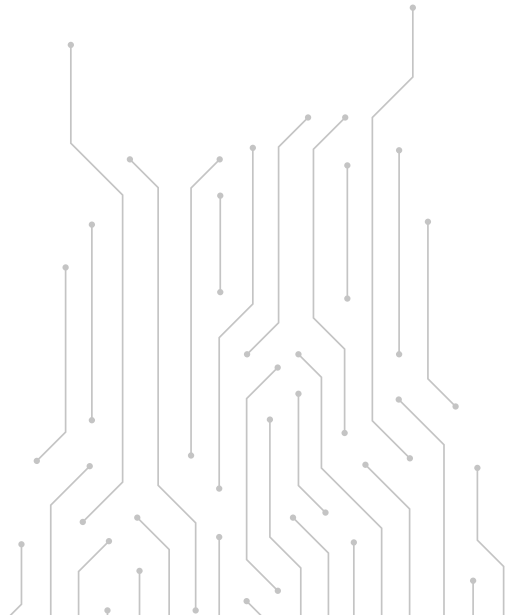
Electrical installation - gates

Telecommunications cables

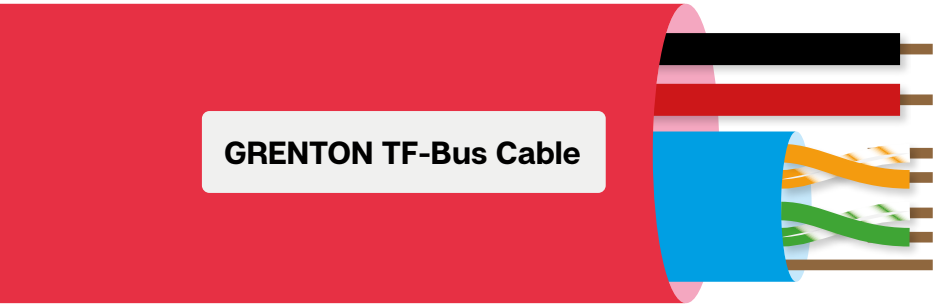


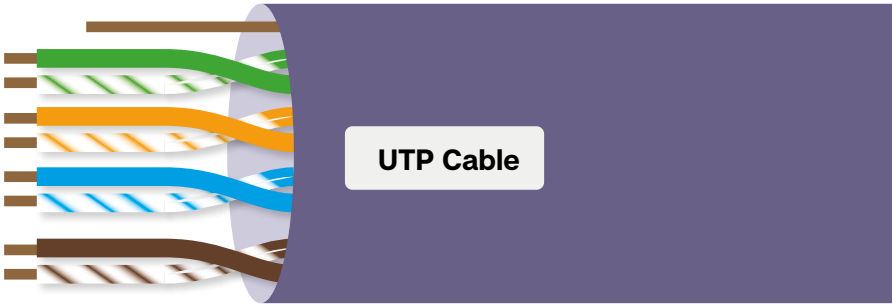
back to Table of contents

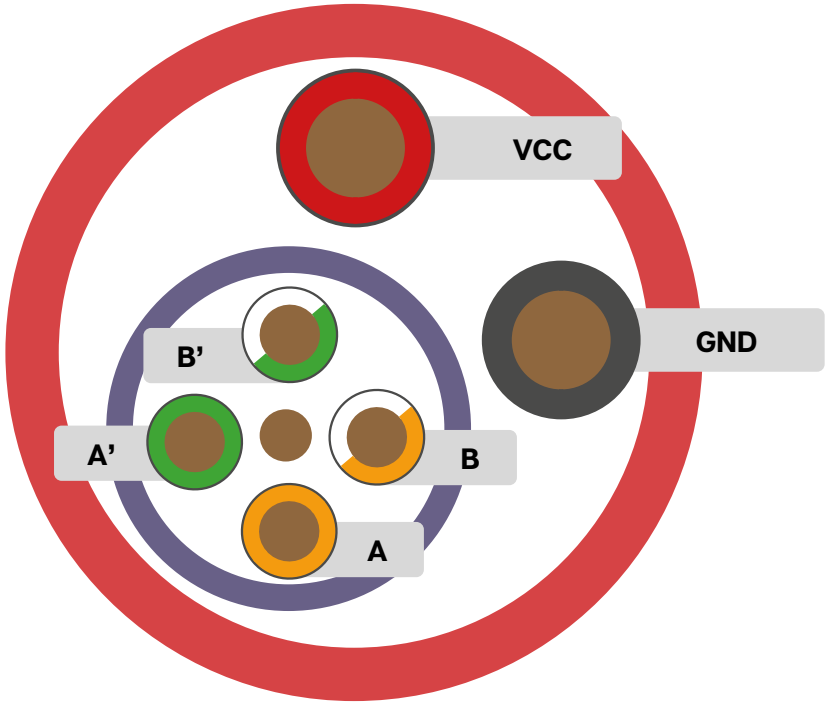
Grenton TF-Bus

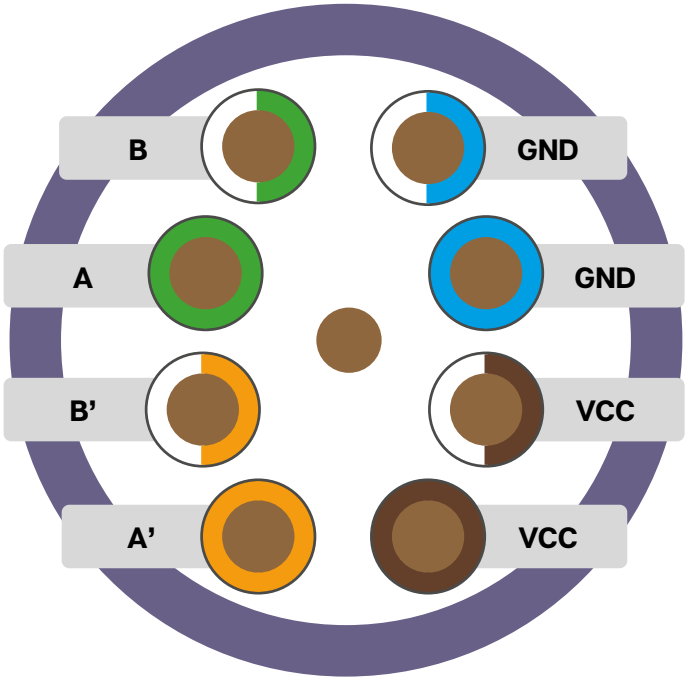


Bus cable - requirements





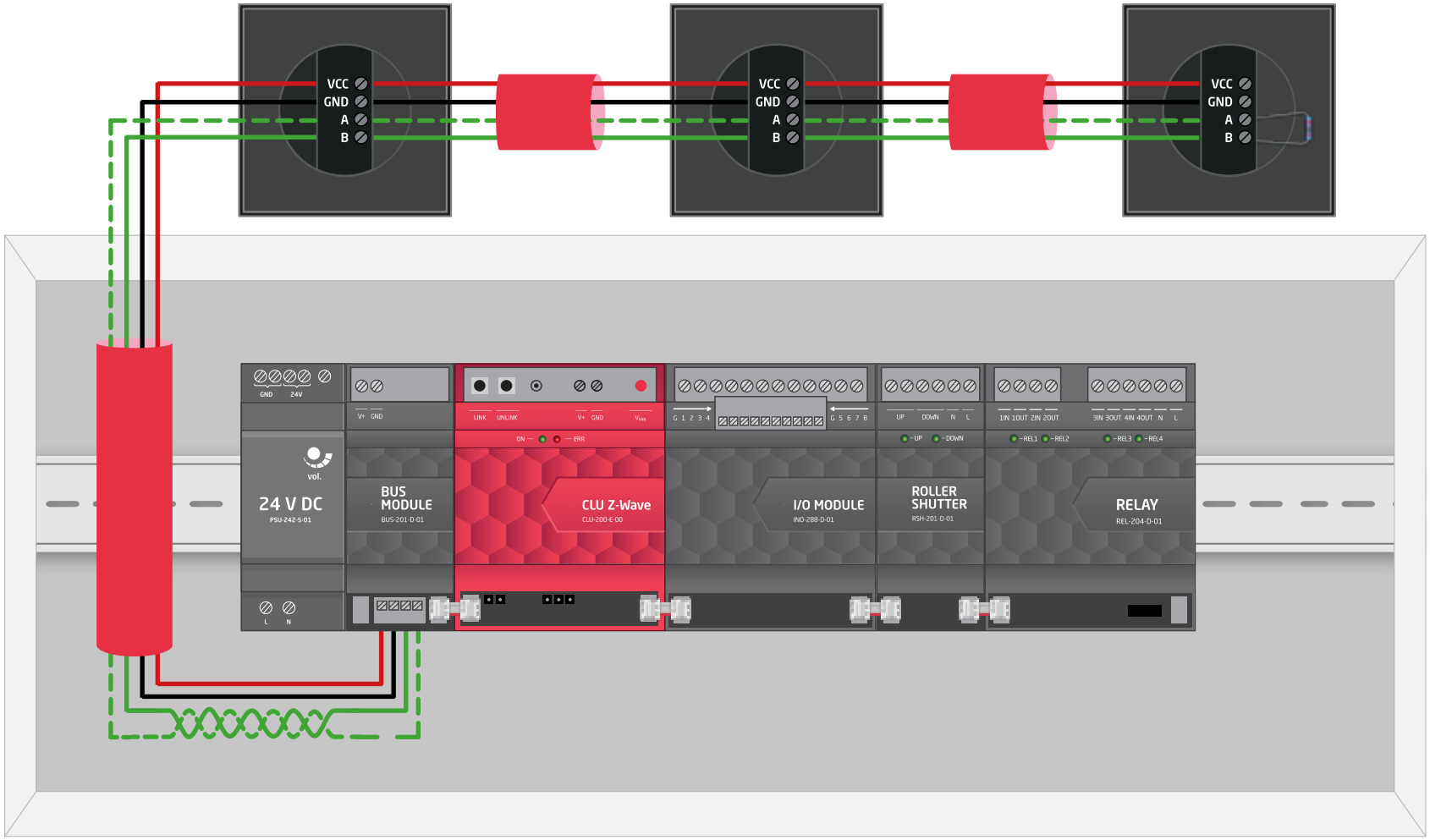




back to Table of contents

Serial data communication wiring

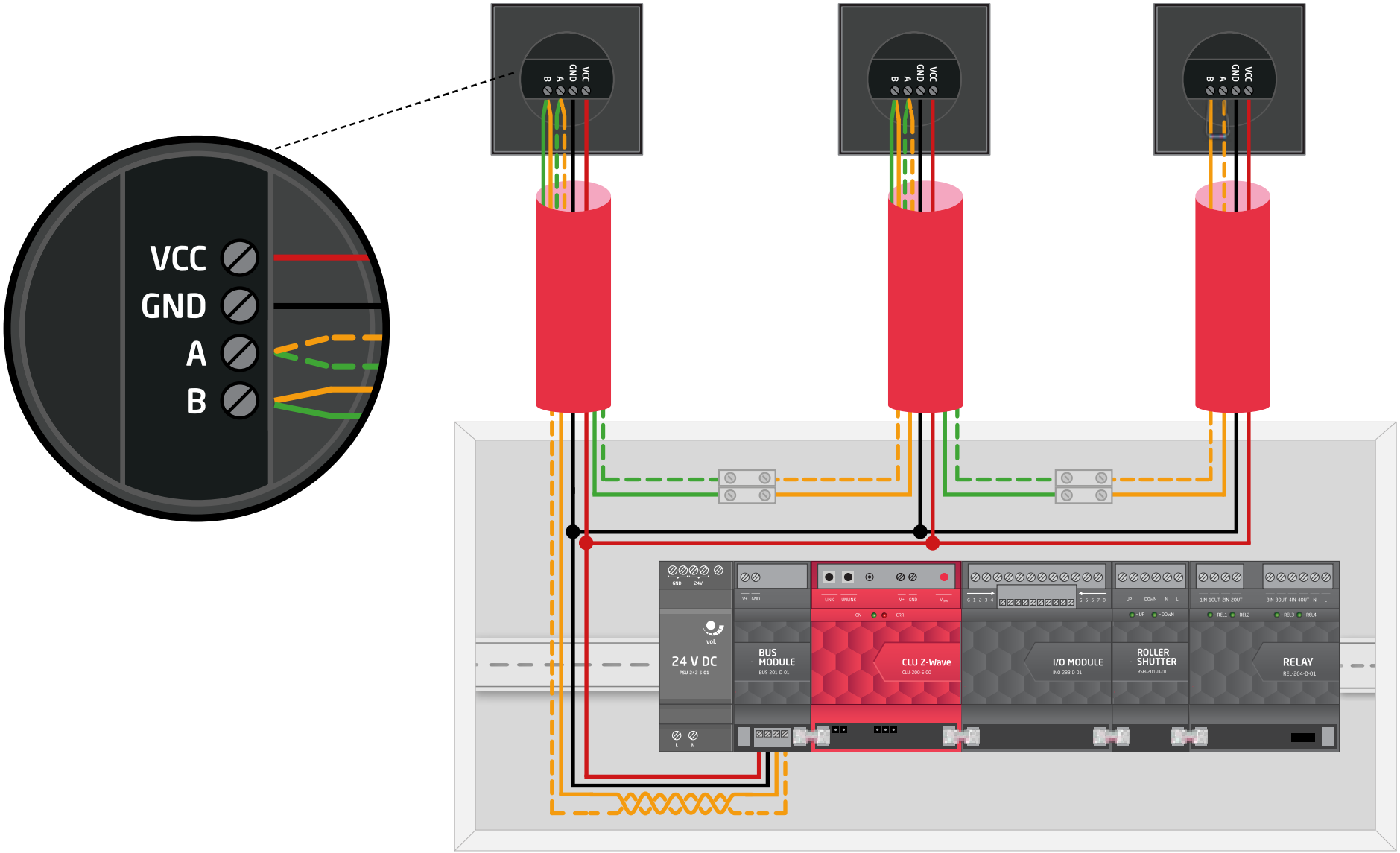
GRENTON TF-Bus Cable



back to Table of contents

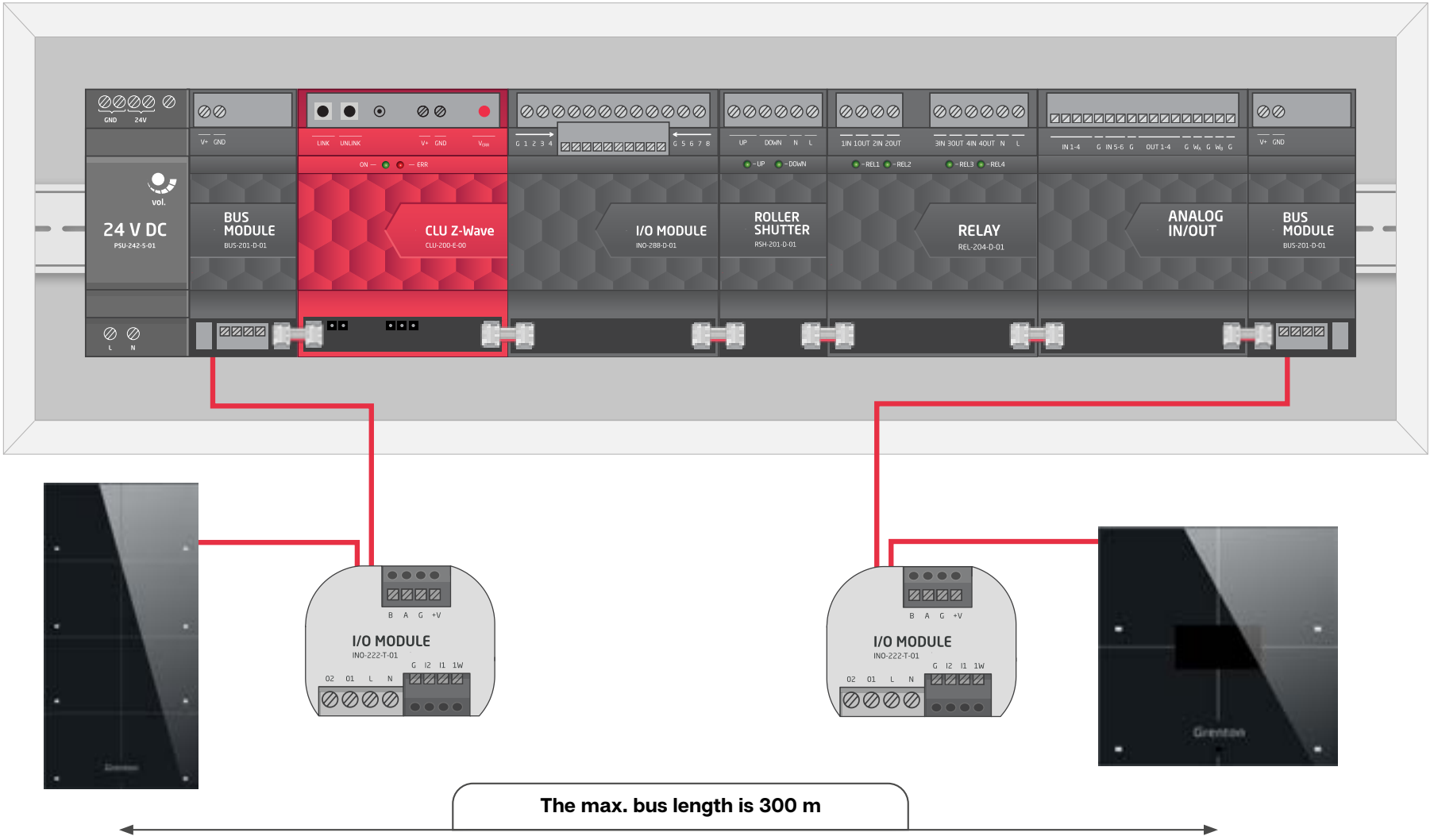
Star data communication wiring - bus “straightening”

GRENTON TF-Bus Cable



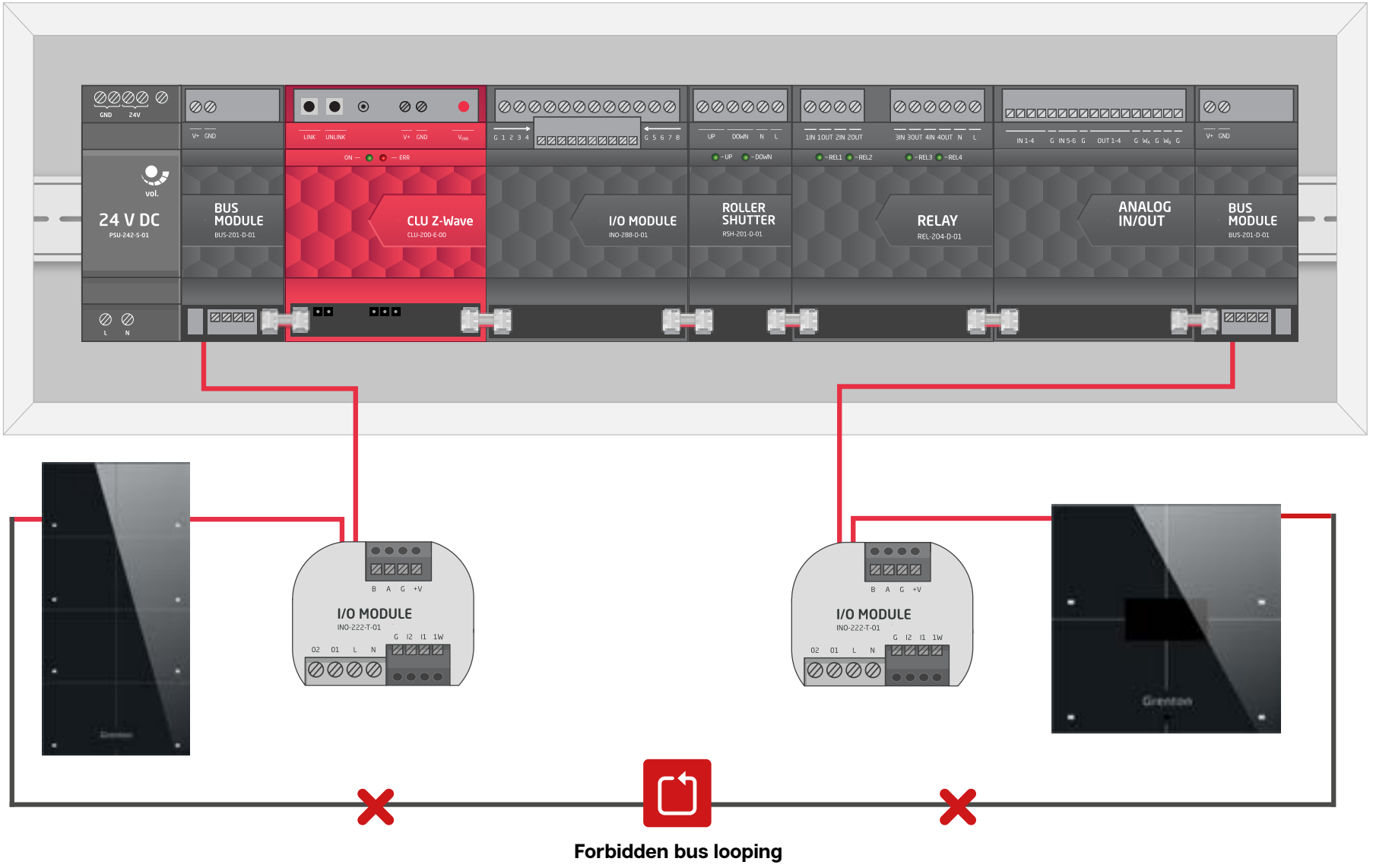
back to Table of contents

Bus length



back to Table of contents

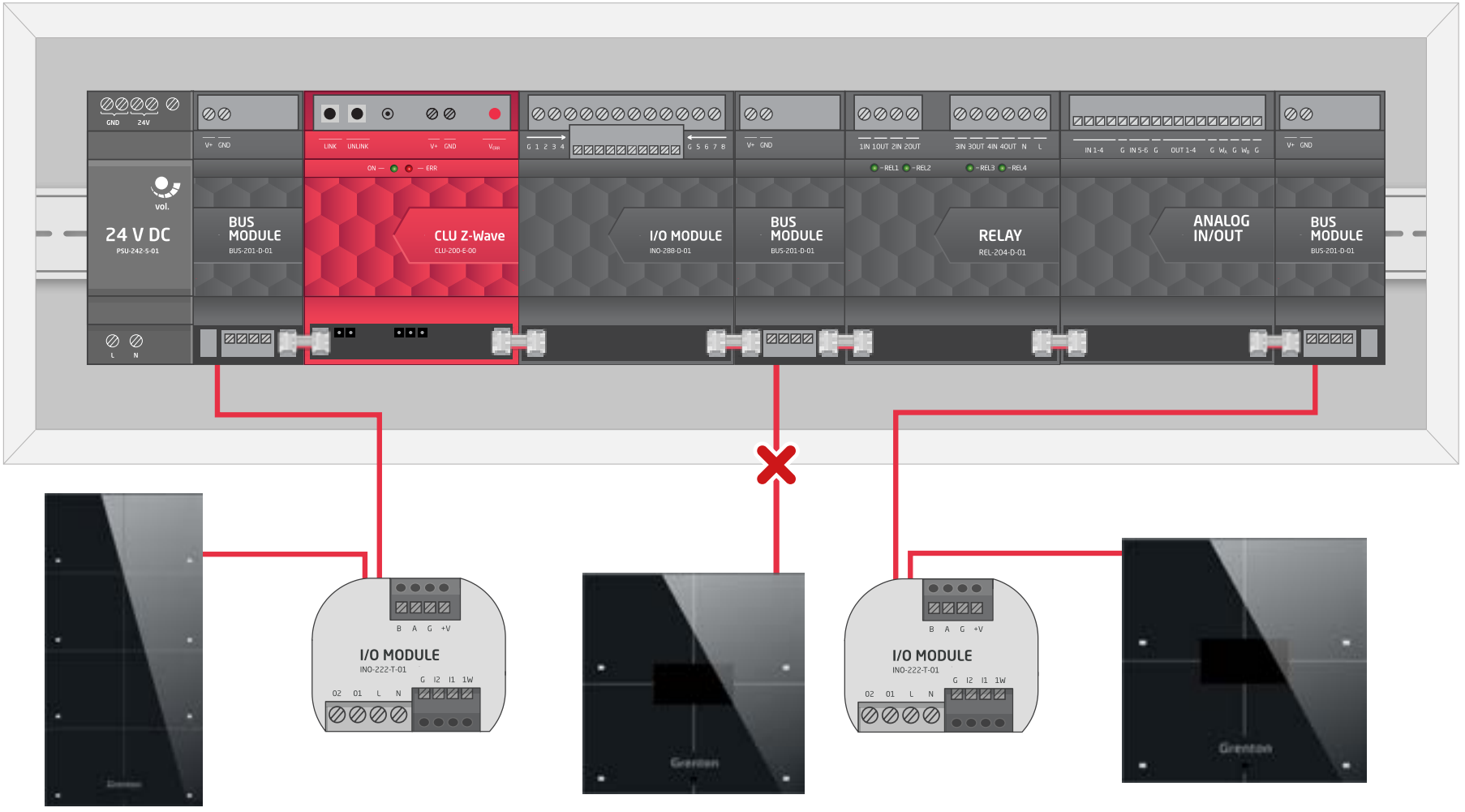
Forbidden bus looping



Forbidden bus looping

back to Table of contents

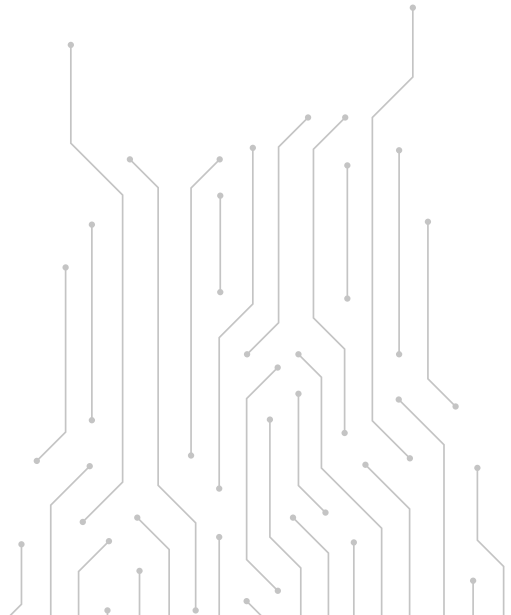
Forbidden branching



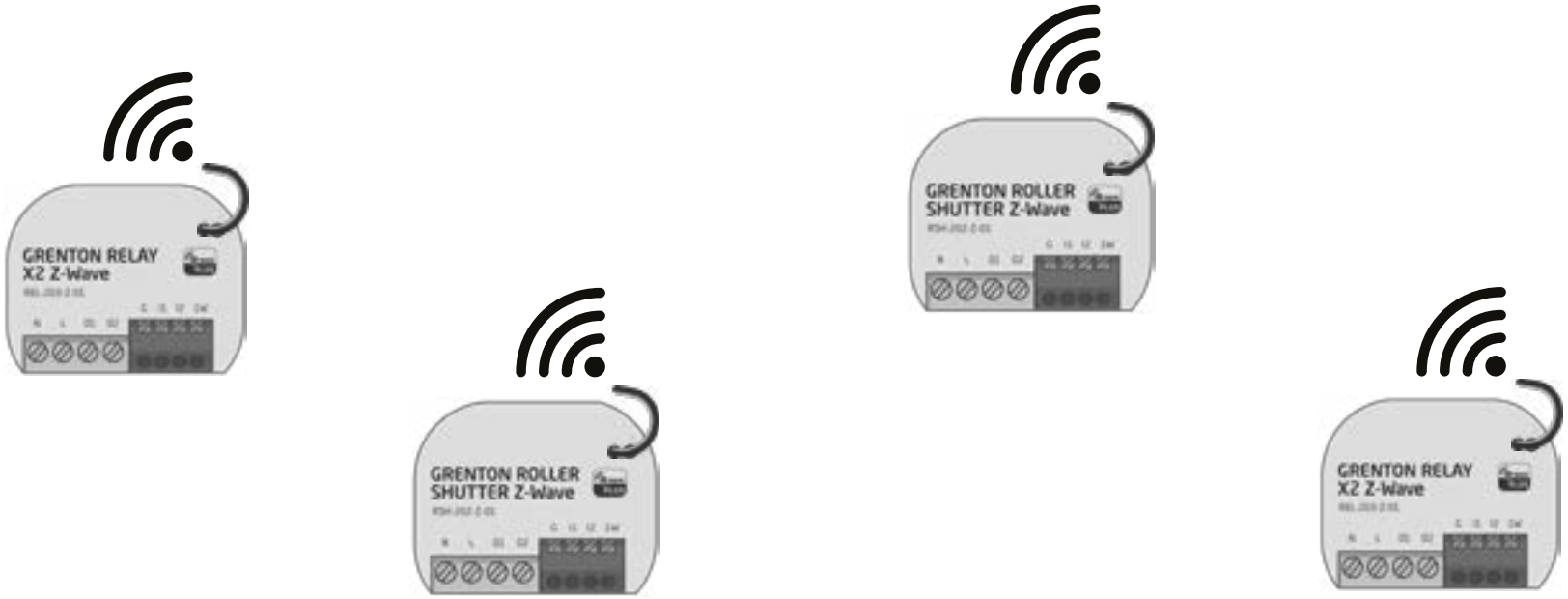
Forbidden branch

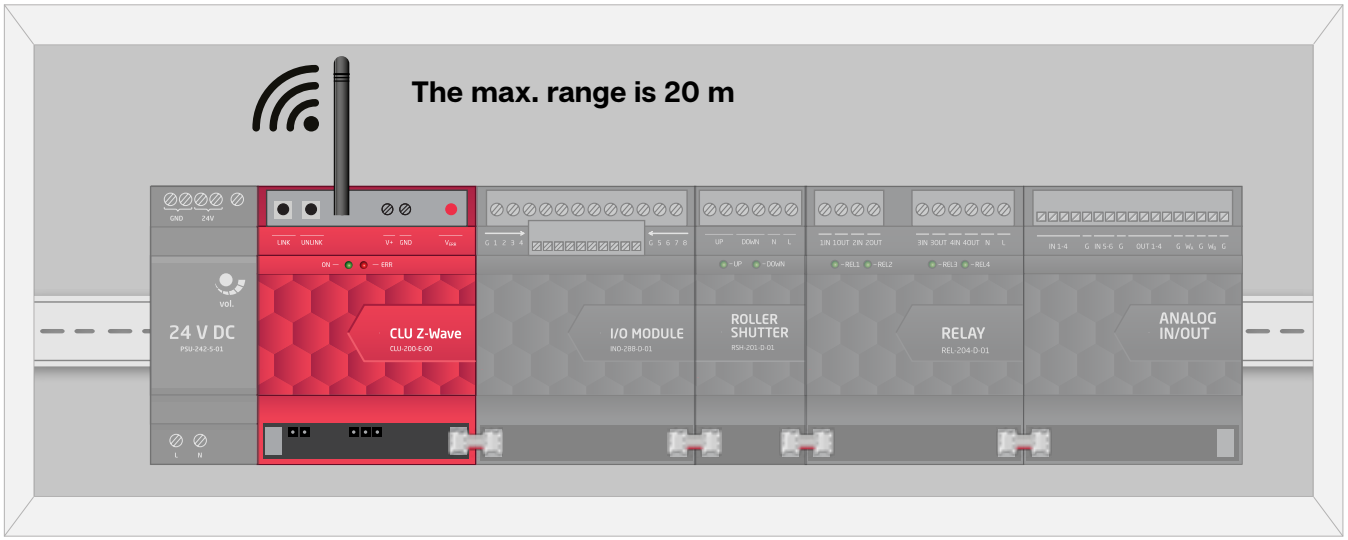
back to Table of contents

Wireless protocols



Z-Wave



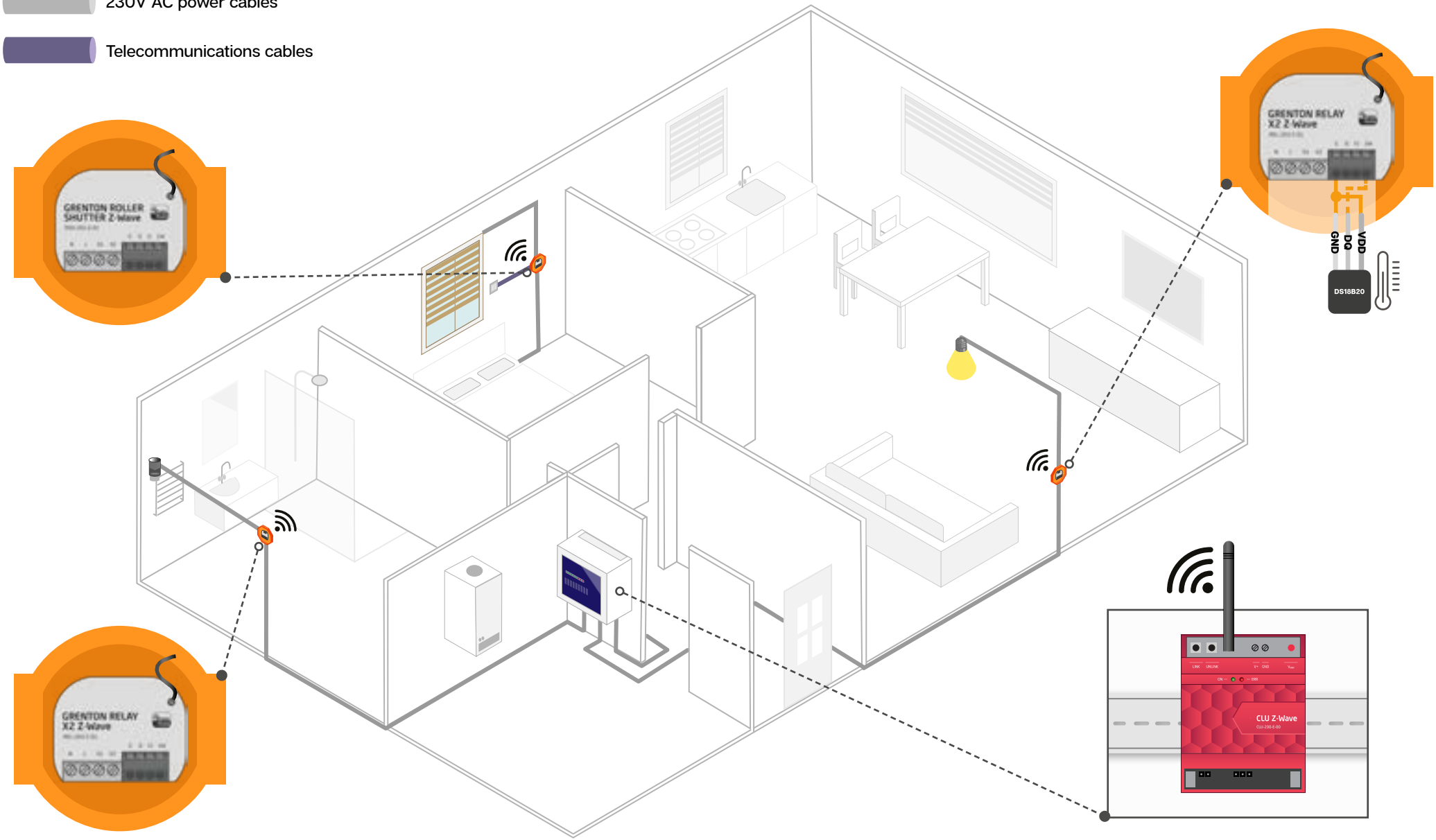


back to Table of contents

Electrical installation - Z-Wave modules

230V AC power cables

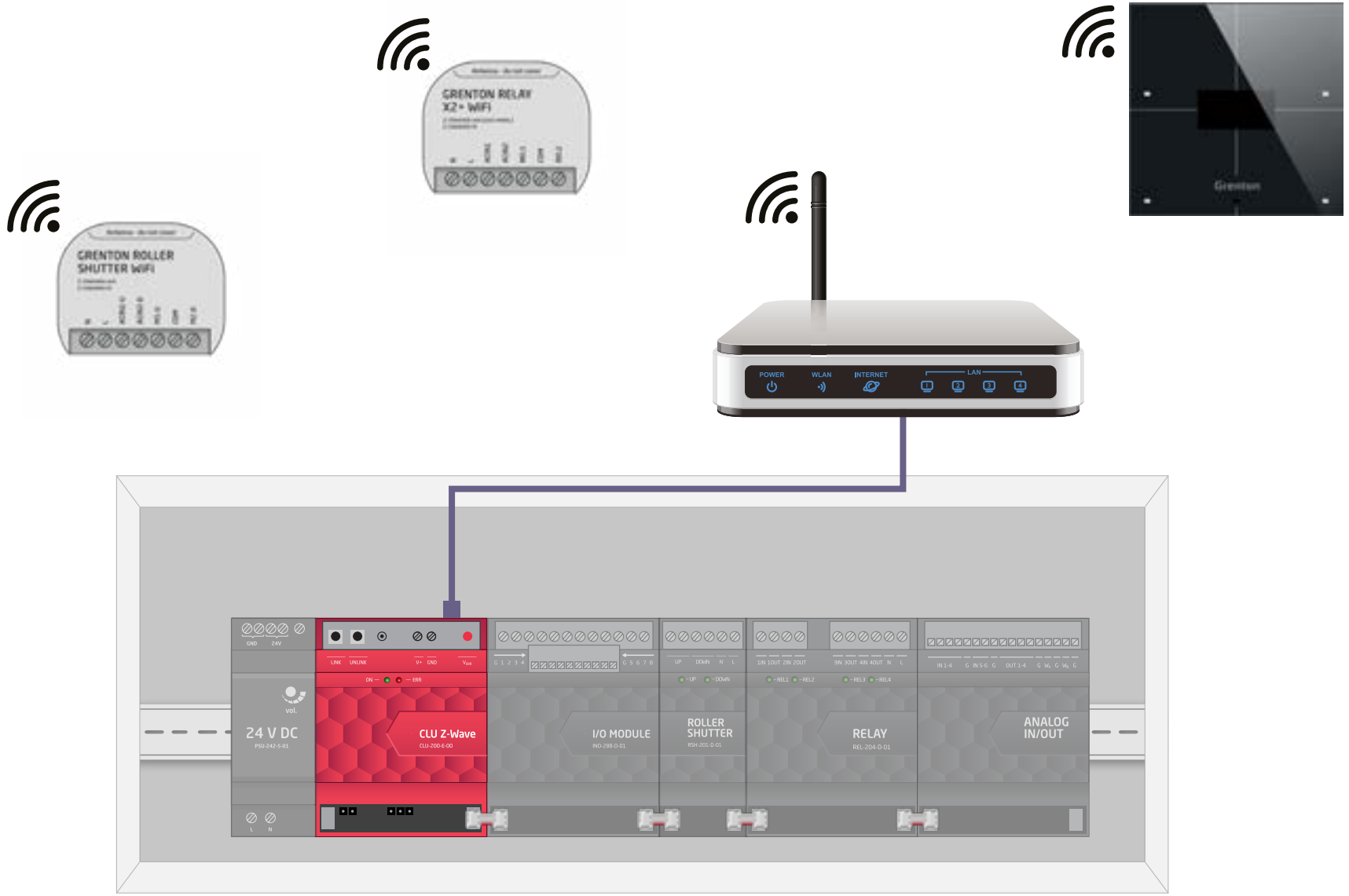
Telecommunications cables



back to Table of contents

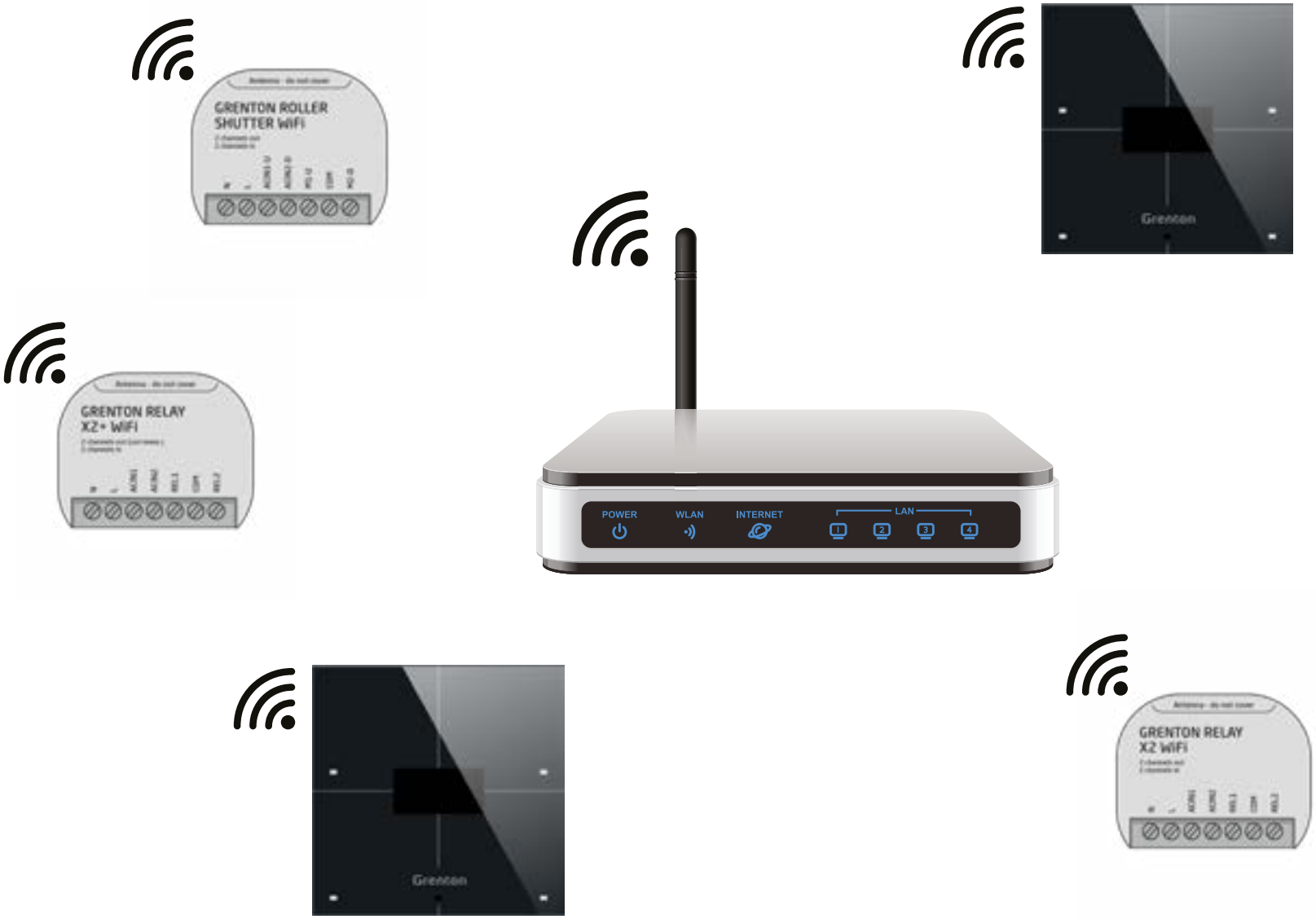
System including Wi-Fi modules and CLU

Telecommunications cables



back to Table of contents

System including Wi-Fi modules without CLU

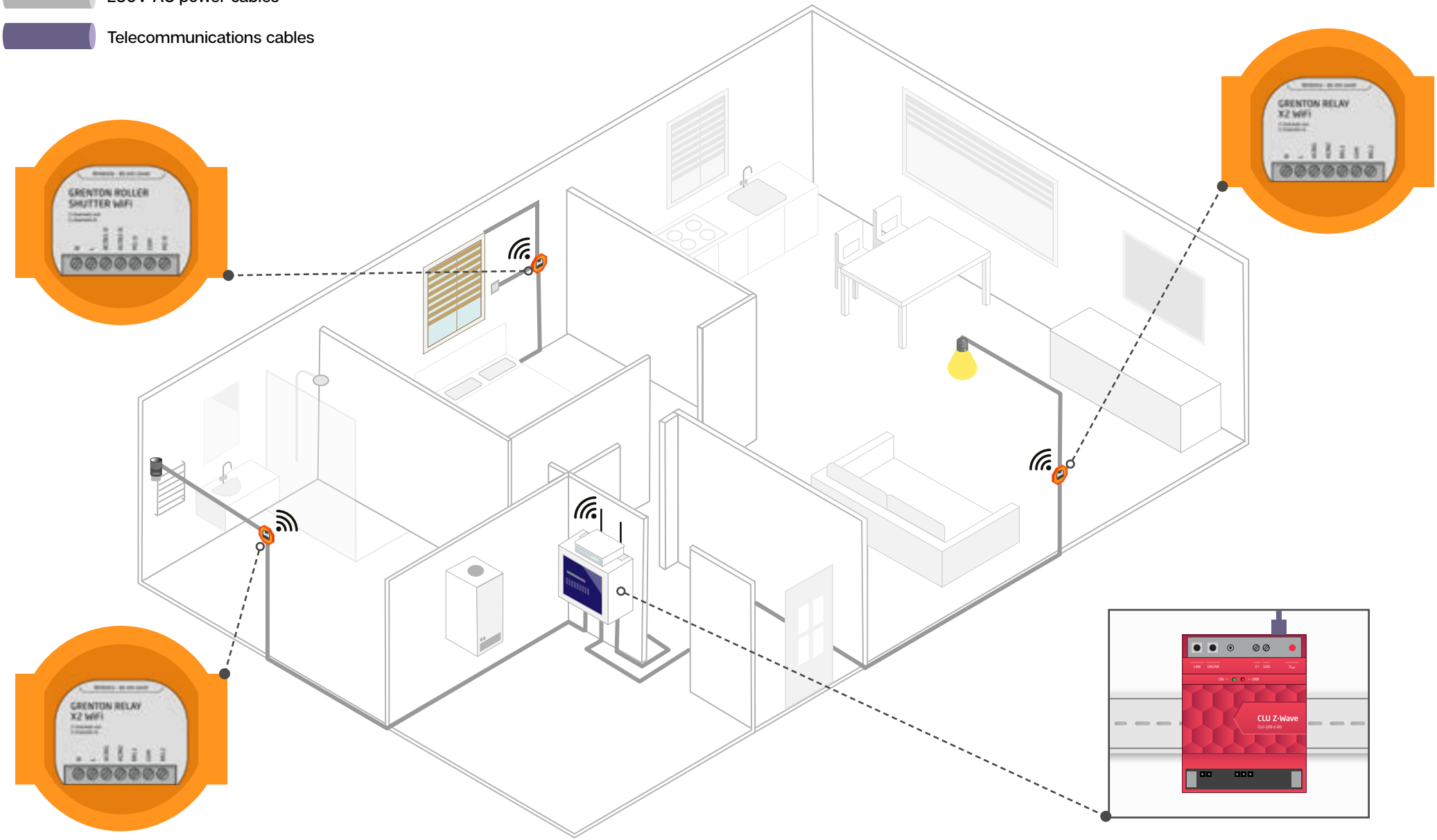


back to Table of contents

Electrical installation - Wi-Fi modules

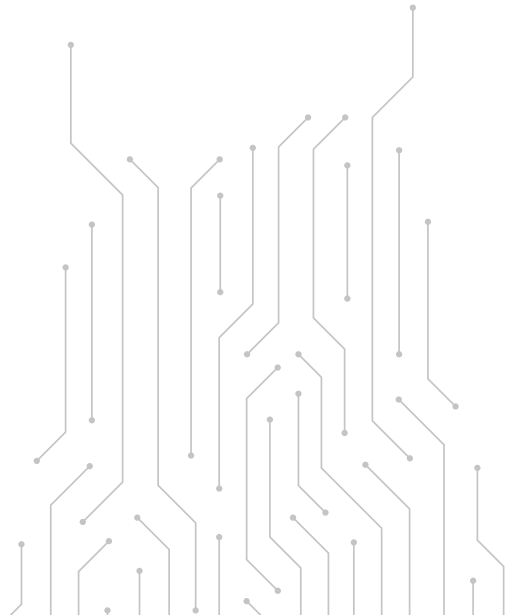
230V AC power cables

Telecommunications cables



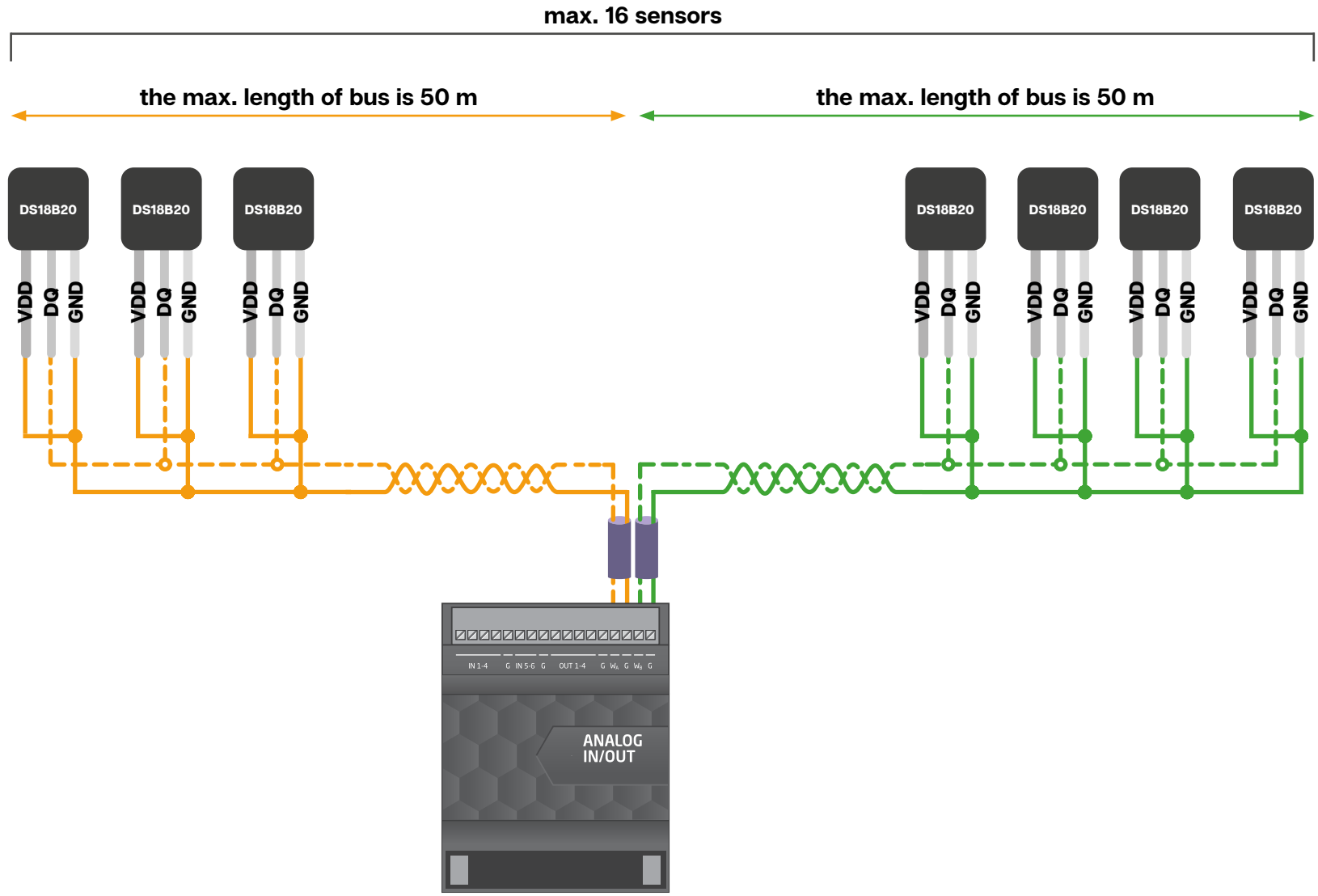
back to Table of contents

1-Wire bus



Data communication wiring

Telecommunications cables



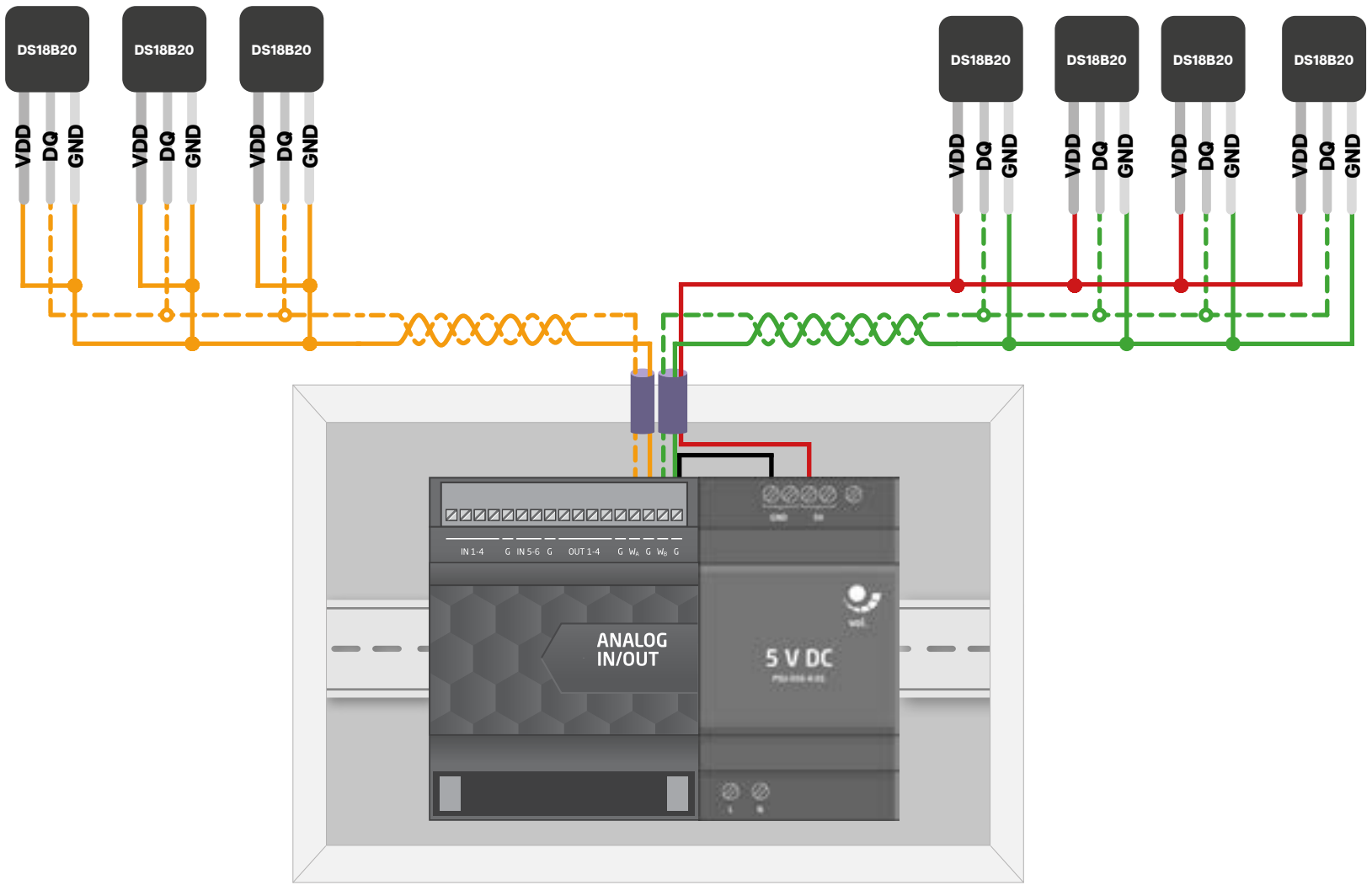
back to Table of contents

Analog IN/OUT module - sensors connection

Telecommunications cables

Two-wire connection (power directly from the data line - “parasite power”)

Three-wire connection (power from an external power supply unit)

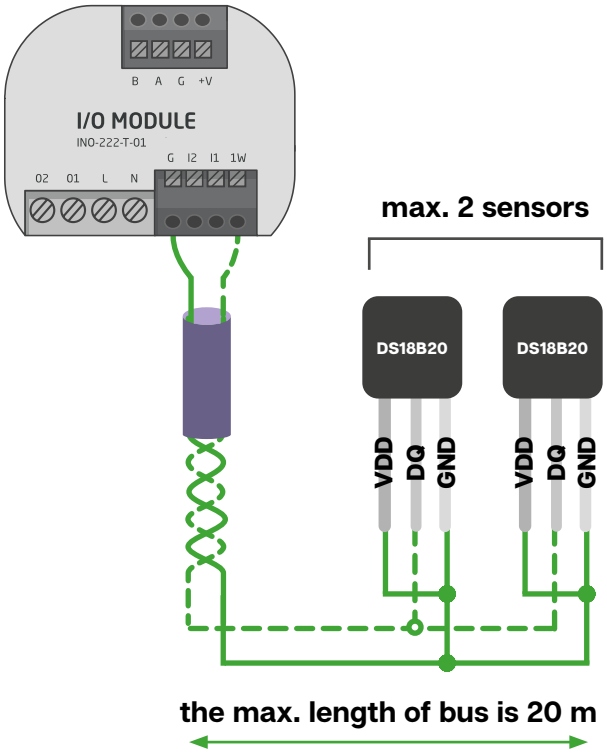


back to Table of contents

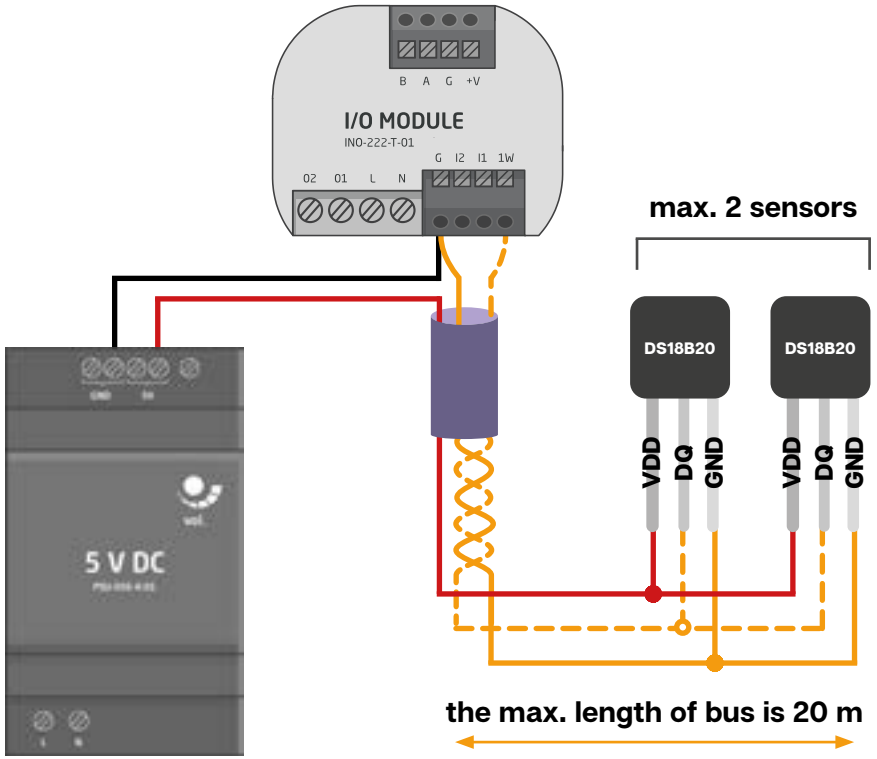
Flush-mounted modules - sensors connection

Telecommunications cables

Two-wire connection (power directly from the data line - “parasite power”)

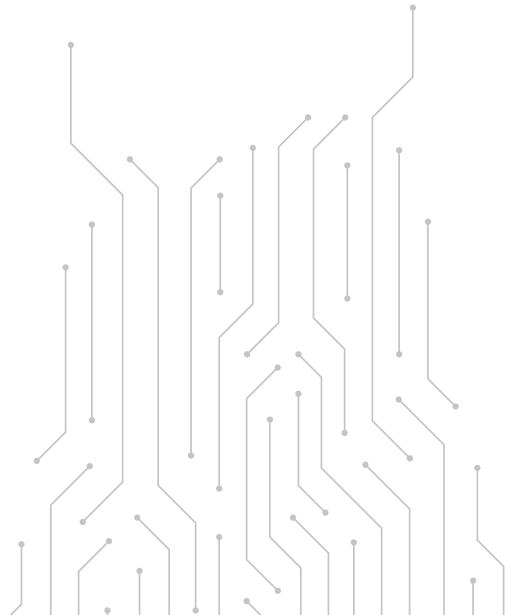


Three-wire connection (power from an external power supply unit)

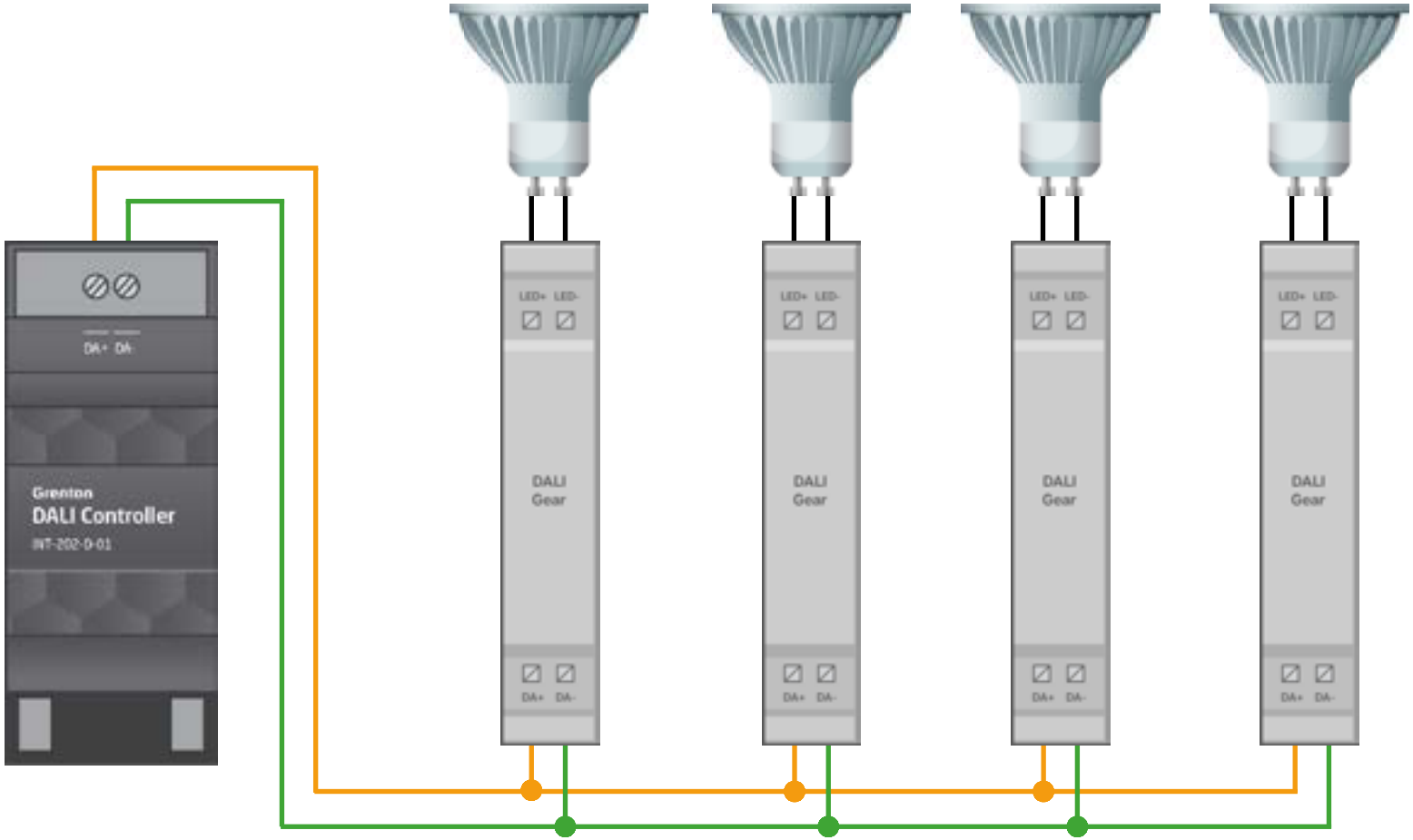


back to Table of contents

DALI bus

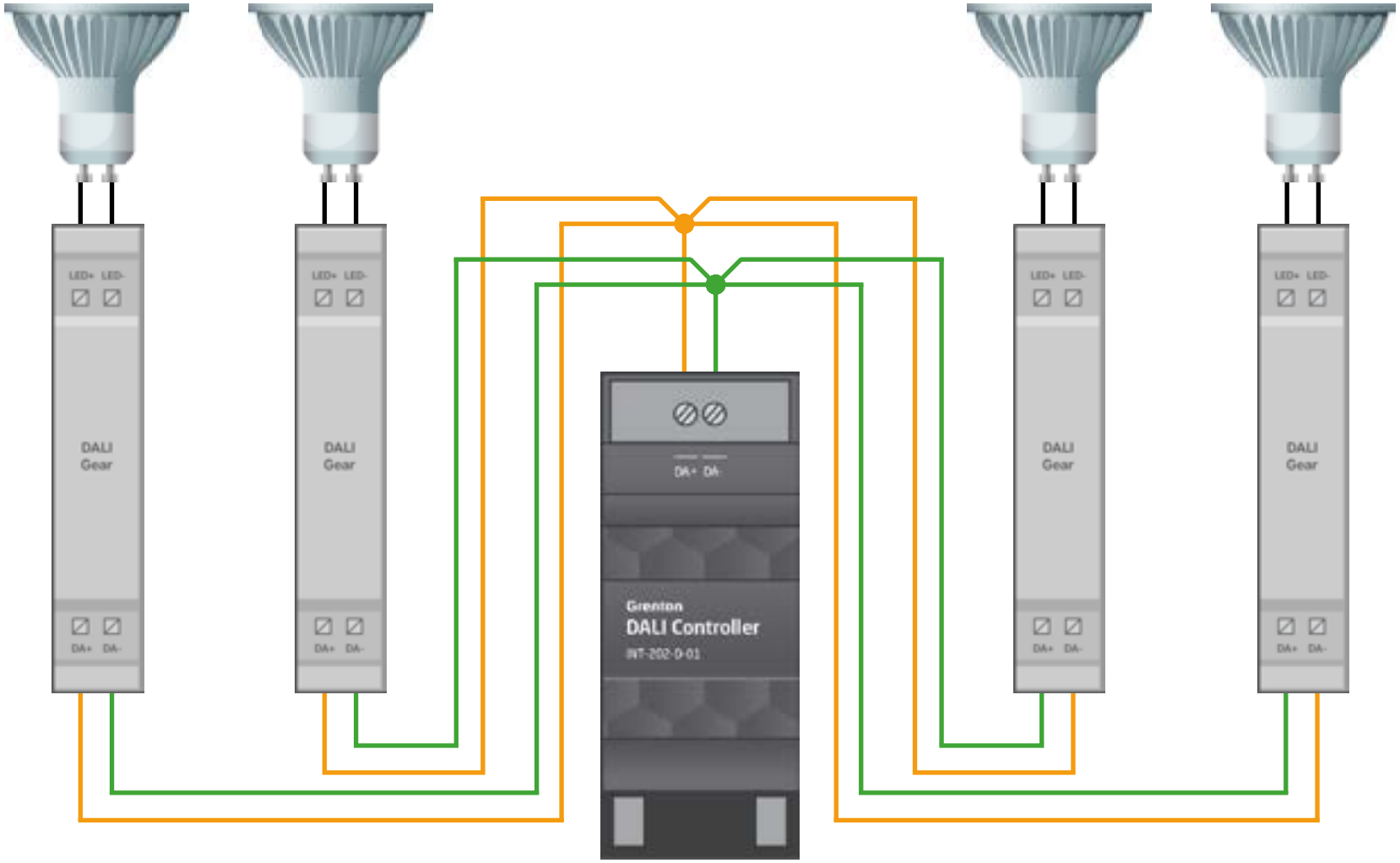


Serial data communication wiring



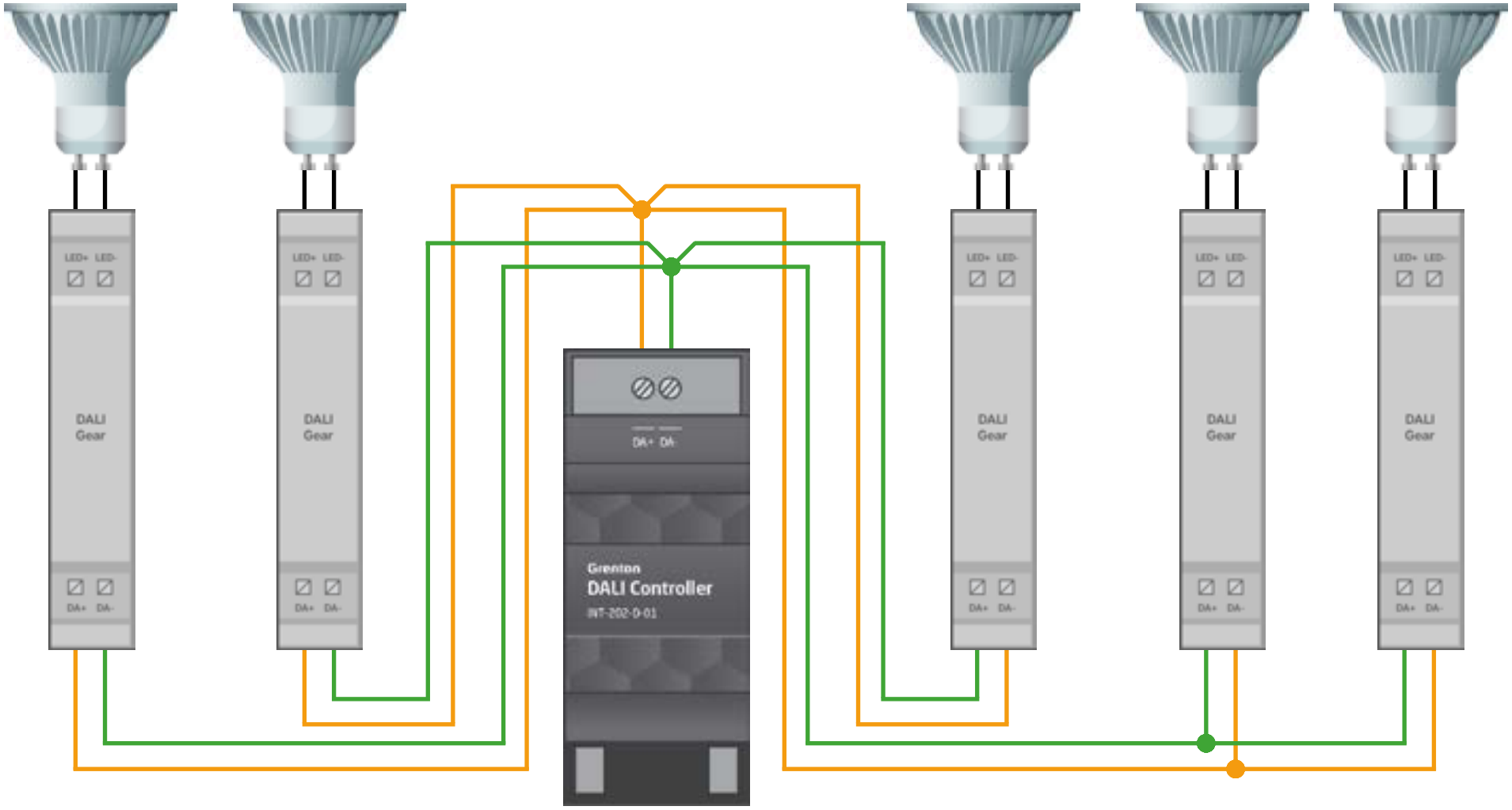
back to Table of contents

Star data communication wiring



back to Table of contents

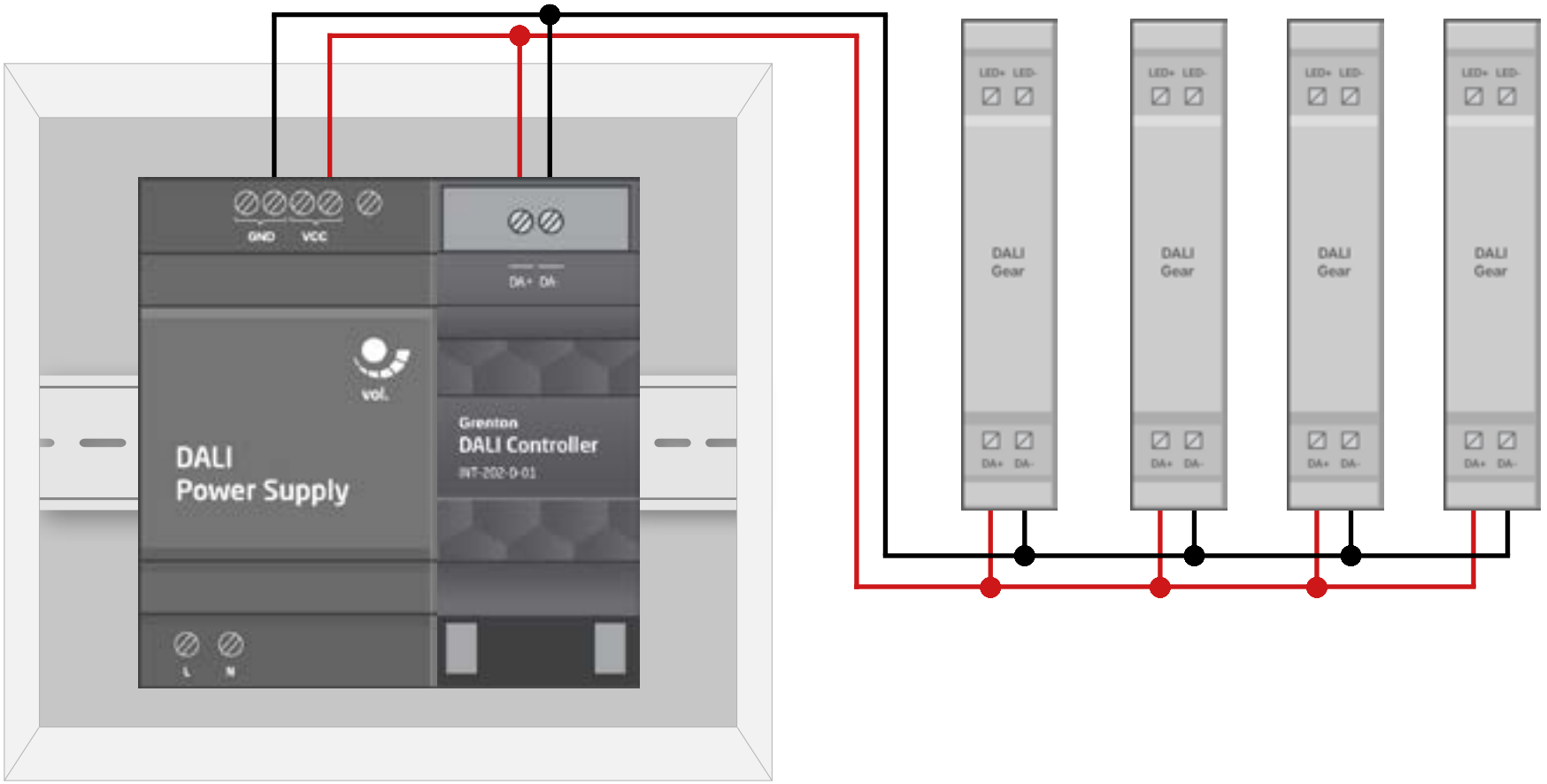
Mixed data communication wiring



back to Table of contents

Bus power supply

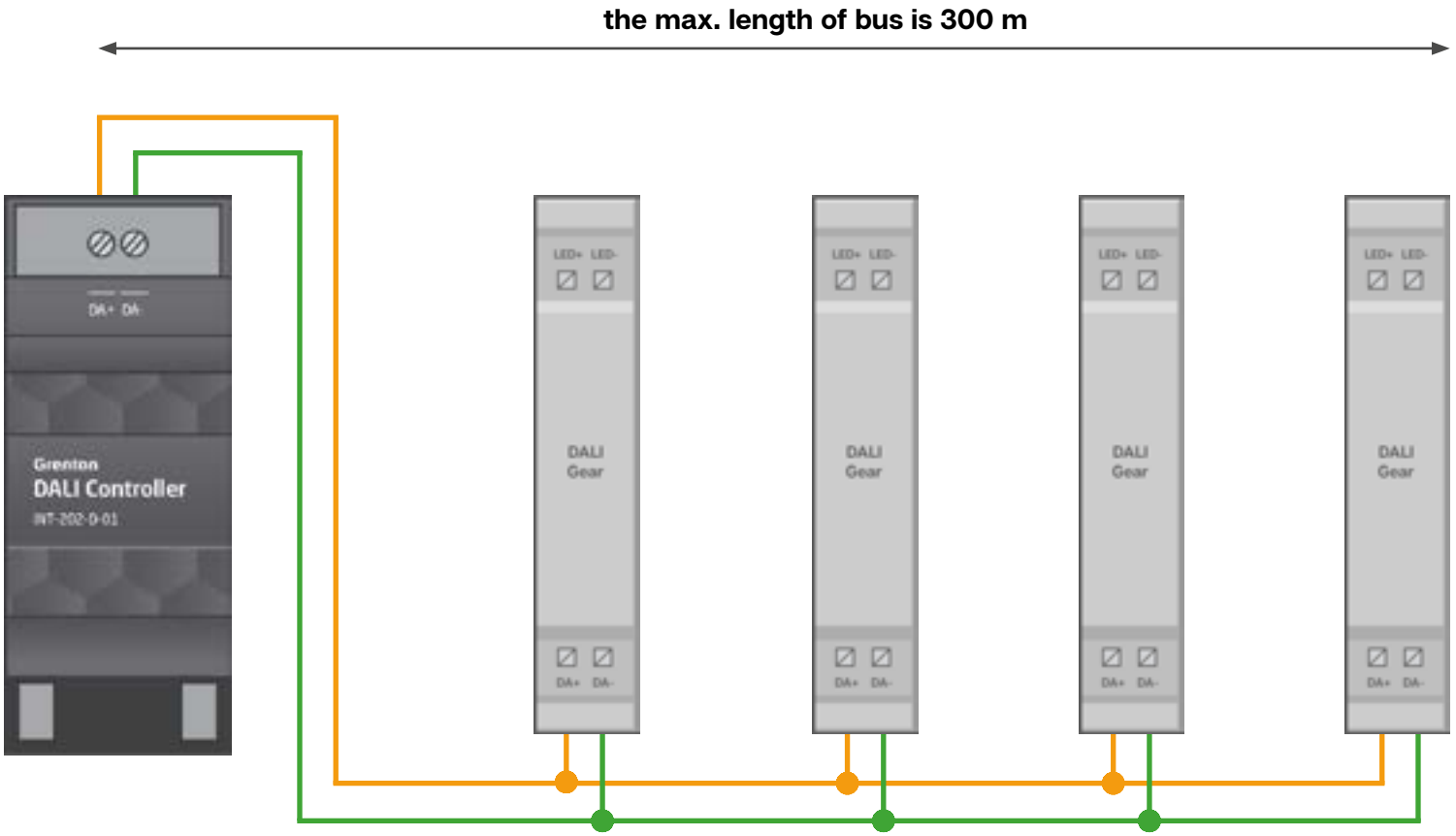
The maximum output current of the power supply unit is 250 mA



back to Table of contents

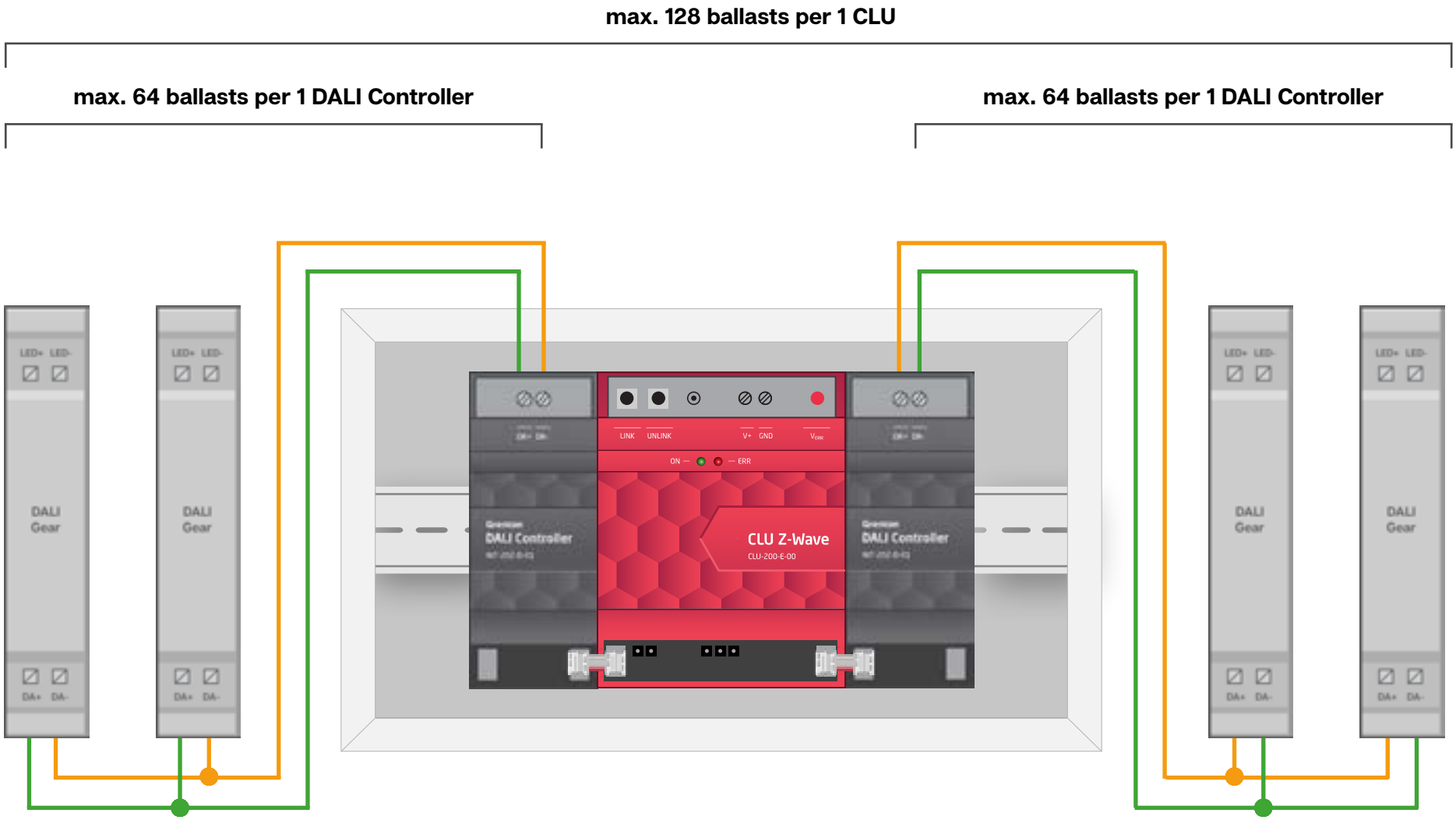
DALI bus - requirements

- **Recommended cable cross-section is 1.5 mm²**
- **No polarity for the DALI bus**
- **Looping, short-circuiting the bus or connecting other buses are not allowed**
- **DALI bus voltage is 13-20V**



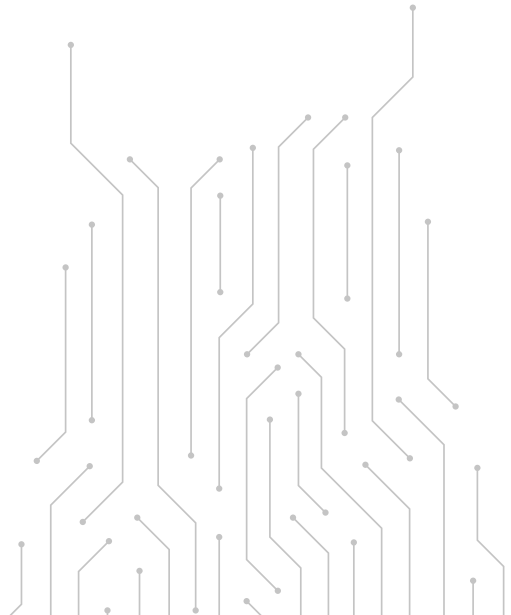
back to Table of contents

Number of ballasts



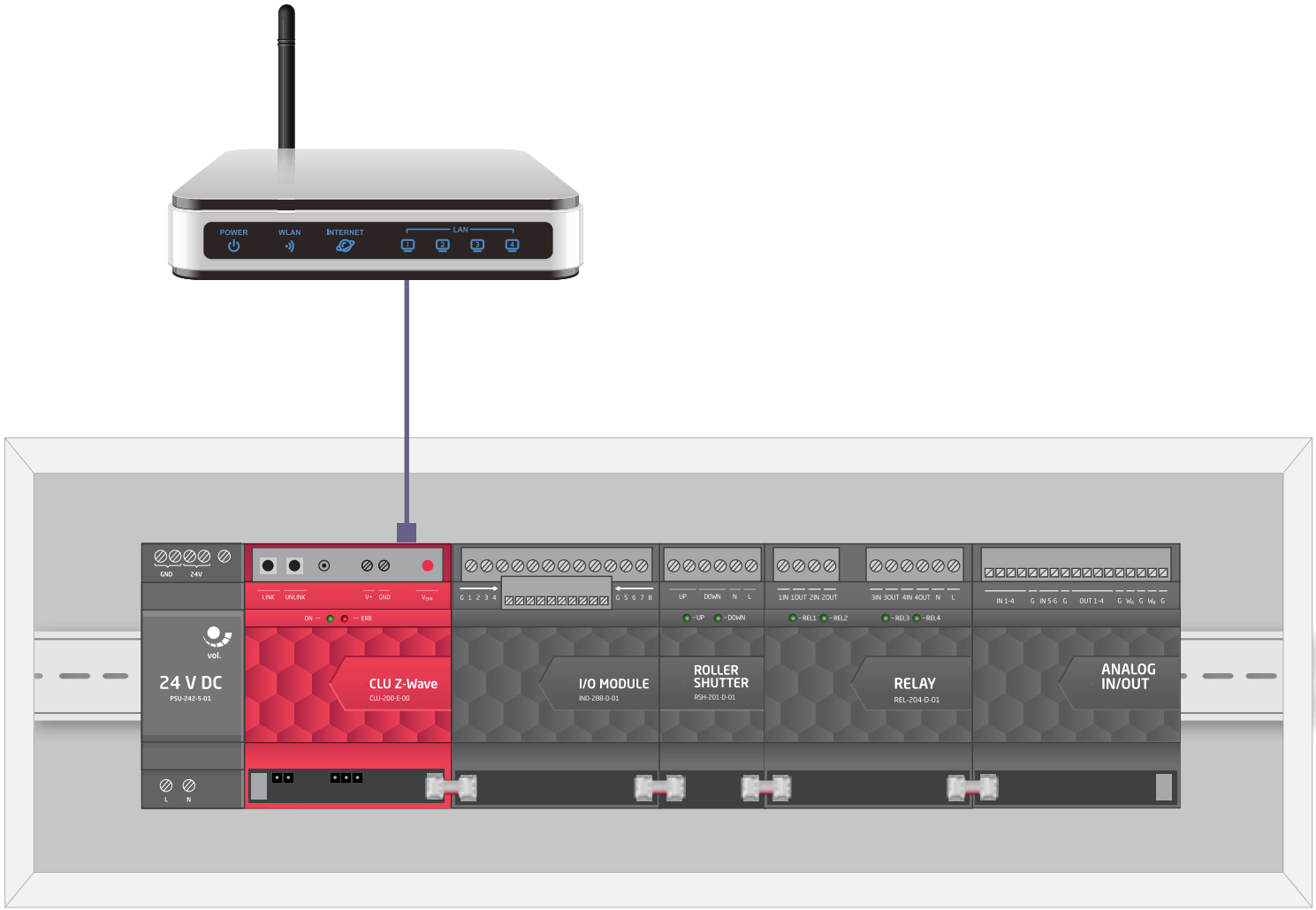
back to Table of contents

System communication



System with the one CLU class device

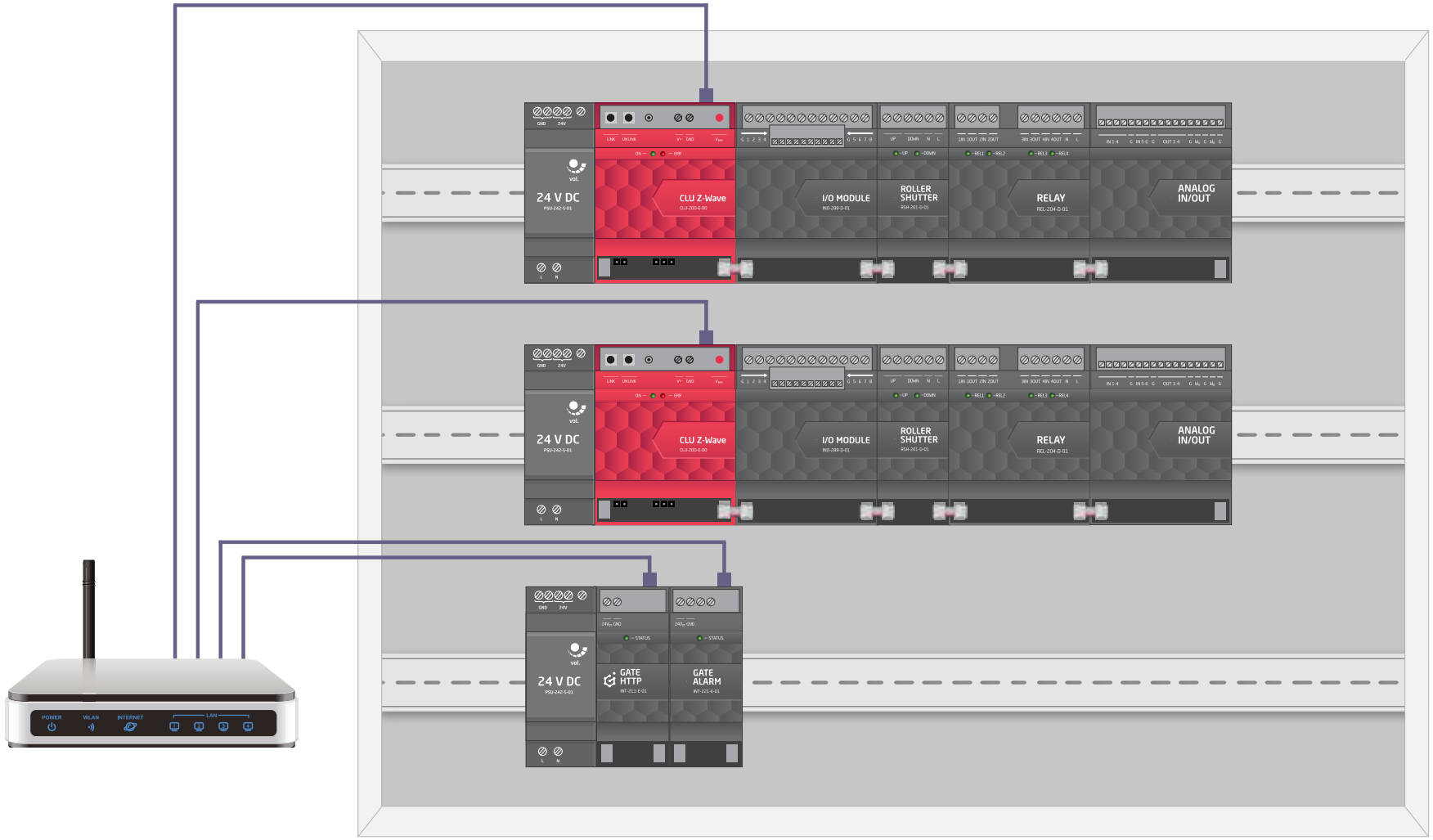
Telecommunications cables



back to Table of contents

System with several CLU class devices

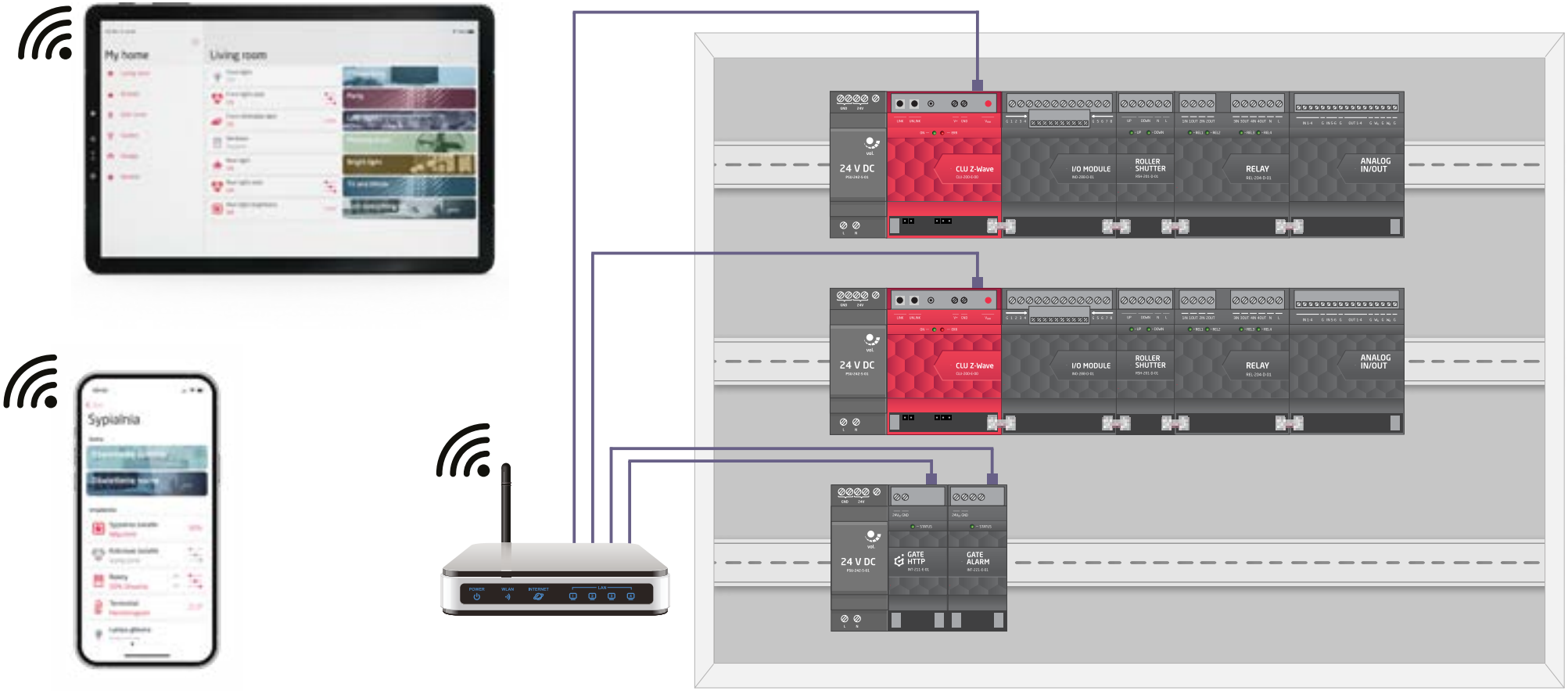
Telecommunications cables



back to Table of contents

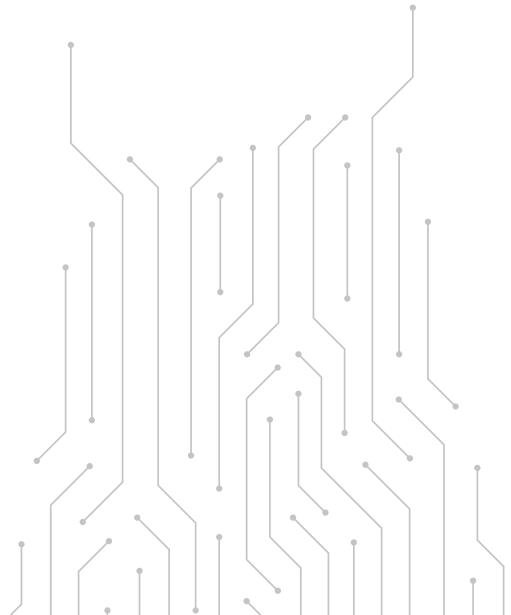
Mobile devices

Telecommunications cables



back to Table of contents

System power supply

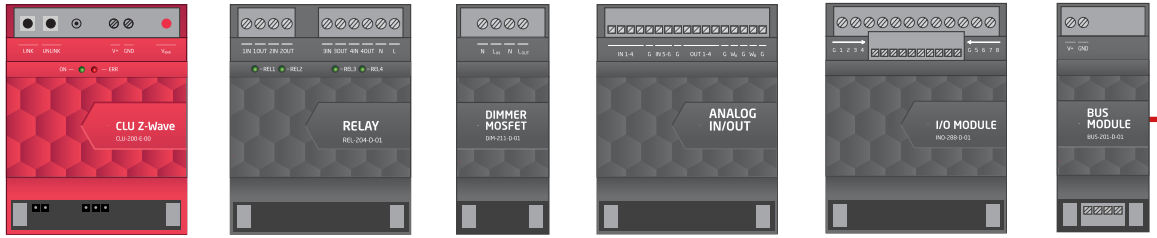


Power supply unit selection

The power of the power supply unit should be calculated by summing:

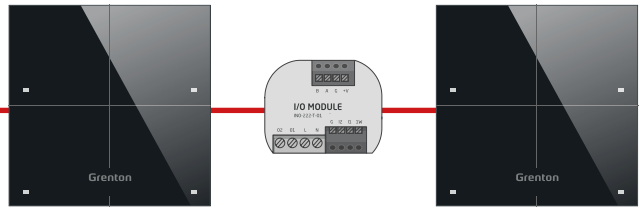
- The current power consumption of all modules in the system,
- 30% of the buffer taking into account voltage drops on the bus and possible expansion of the system

DIN-mounted modules



Power consumption

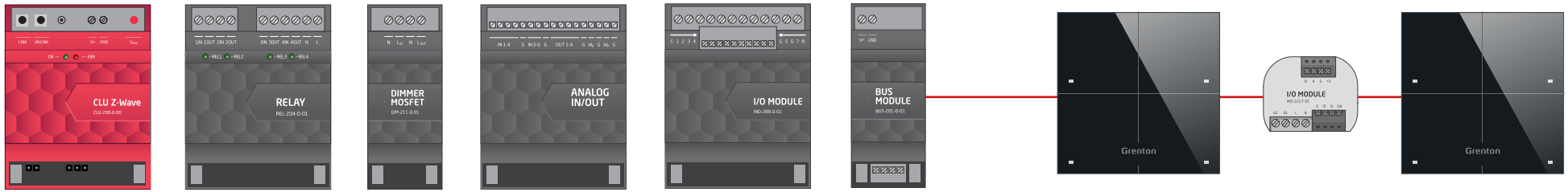
Touch panels and flush-mounted modules



Power consumption
+
Voltage drop

back to Table of contents

Power supply unit selection - example



100 mA **100 mA** **67 mA** **20 mA** **75 mA** **20 mA** **30 mA** **20 mA**

Max. summary power consumption for above modules is **432 mA**

Max. summary power consumption + 30% buffer

432 mA + 30% = **561.6 mA**

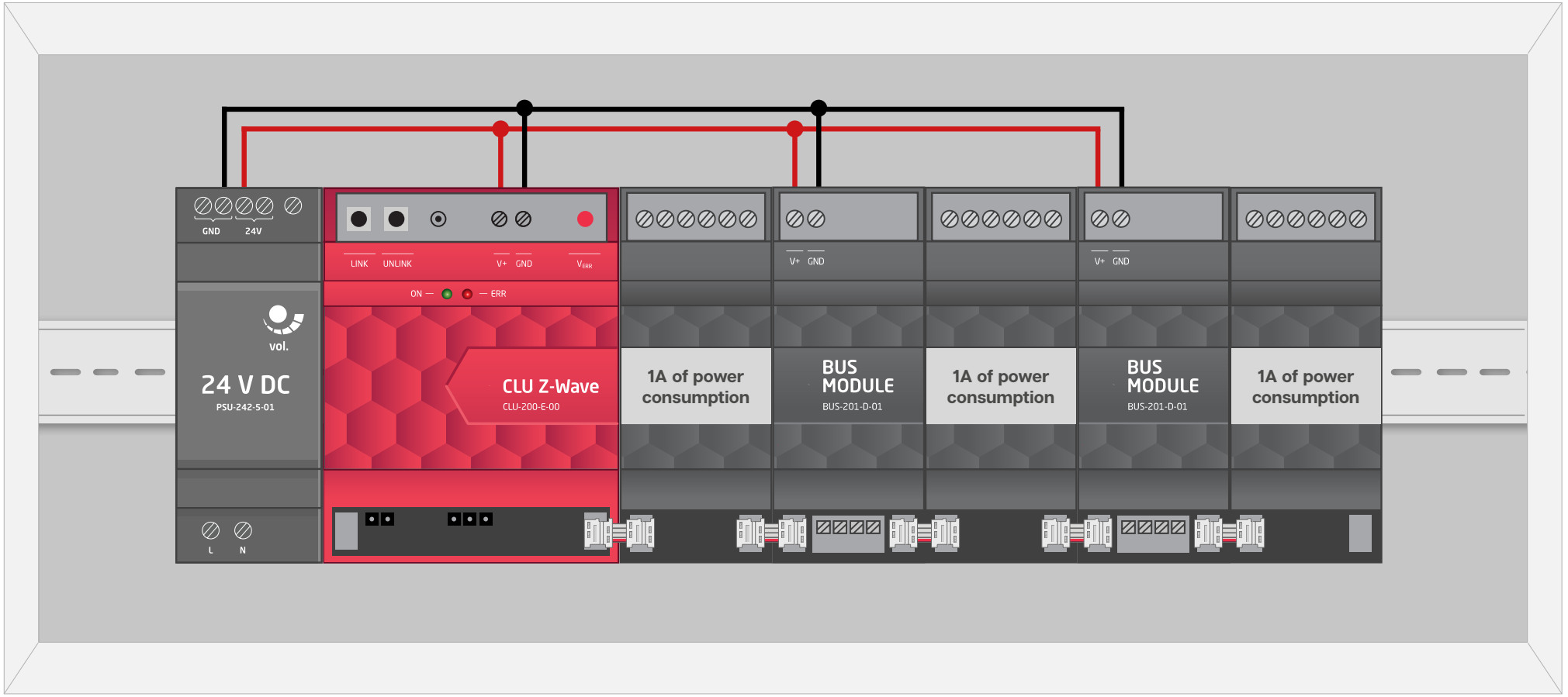
Min. power of a power supply unit = **561.6 mA**

Optimal parameters of the power supply unit for this example

24 VDC 600 mA

back to Table of contents

System power supply



24V DC power supply unit

Min. 3A

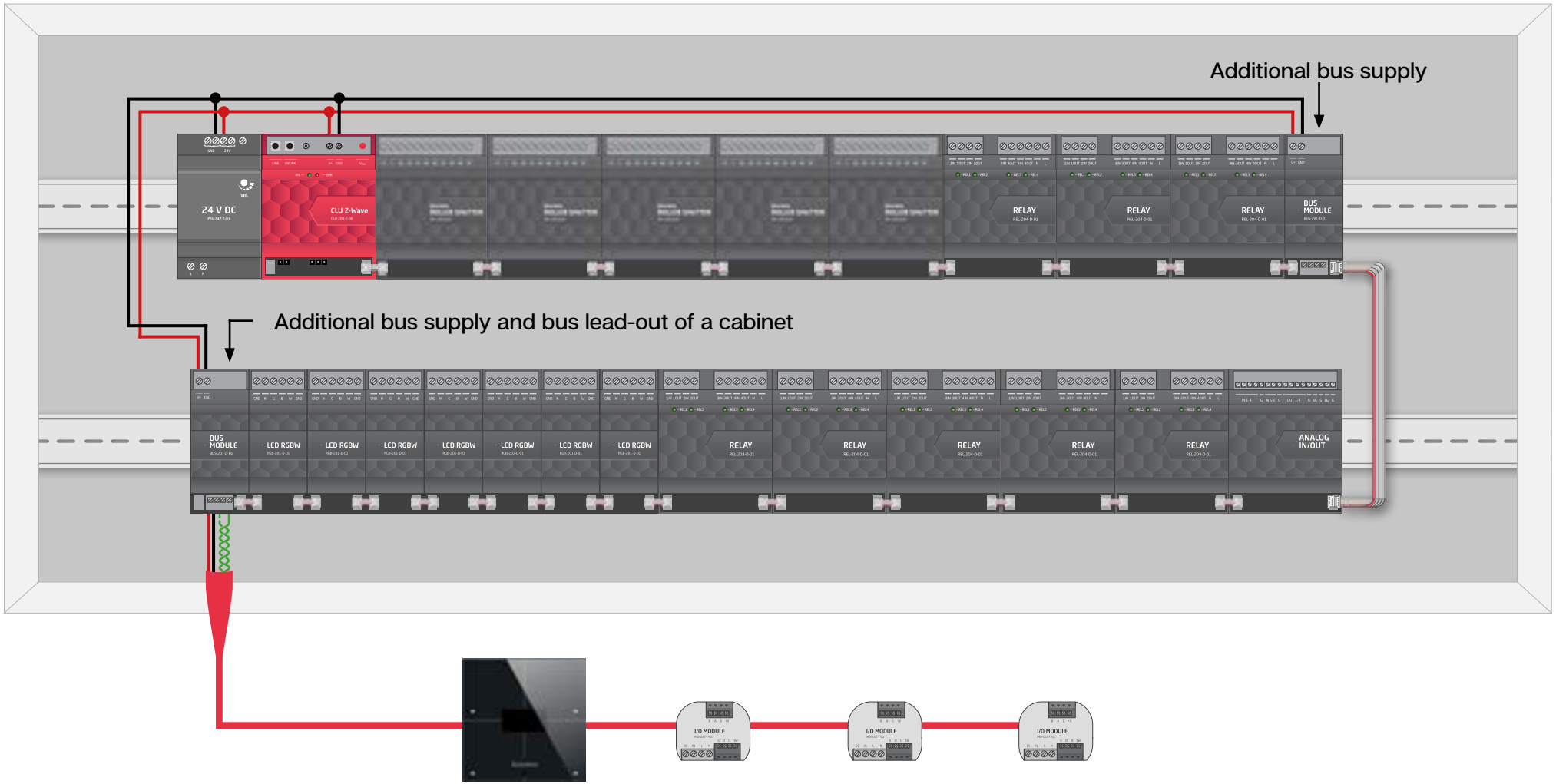
back to Table of contents

System power supply - 1st example

back to Table of contents

System power supply - 2nd example

GRENTON TF-Bus Cable

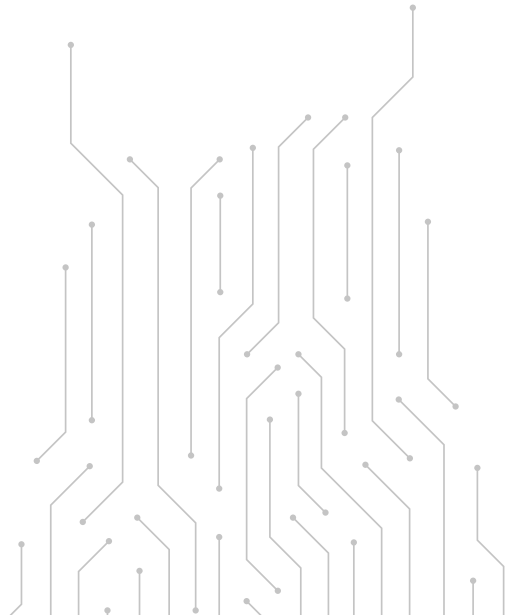


back to Table of contents

Power supply of the system using a redundancy module

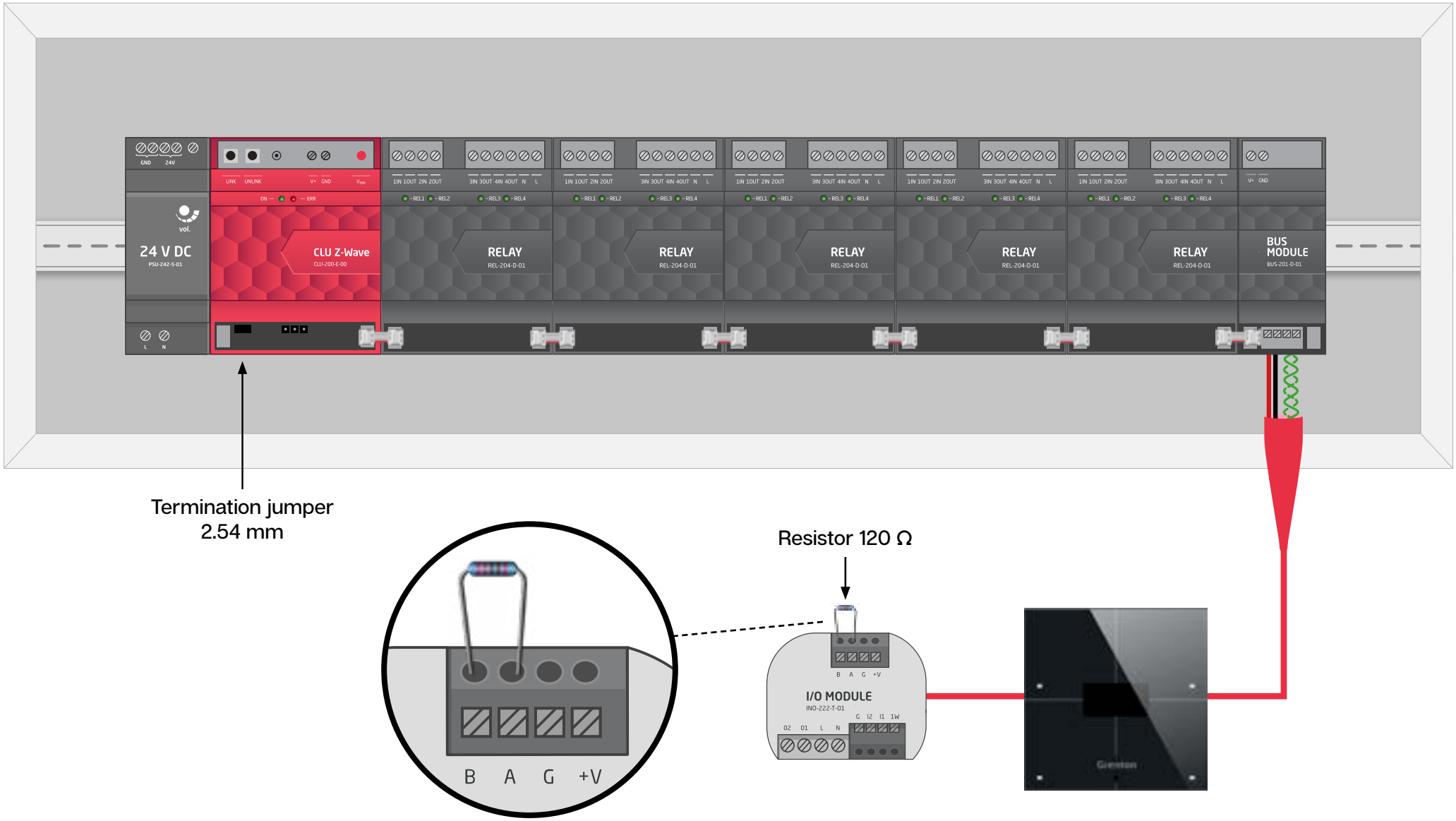
back to Table of contents

Bus termination



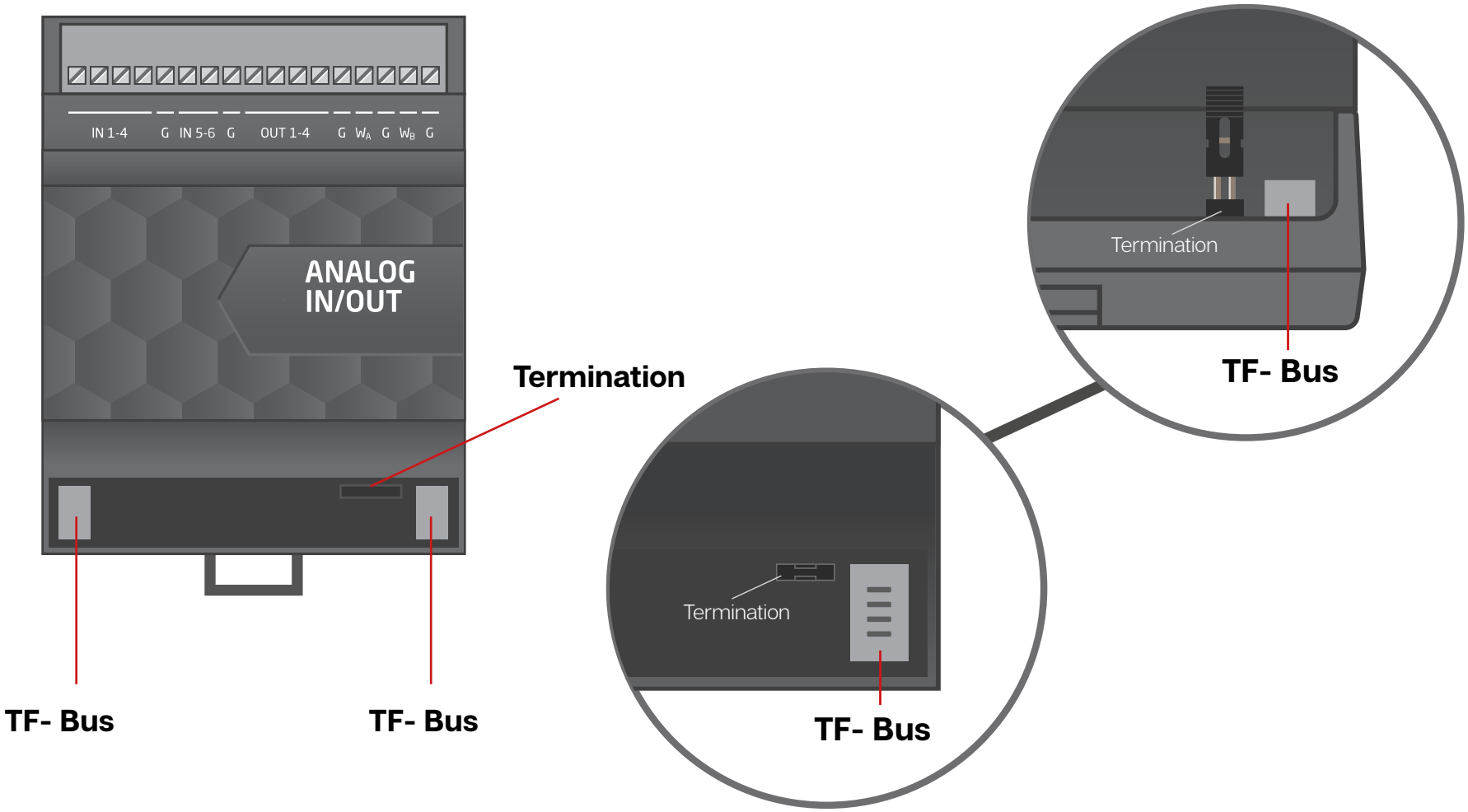
Bus termination

GRENTON TF-Bus Cable



back to Table of contents

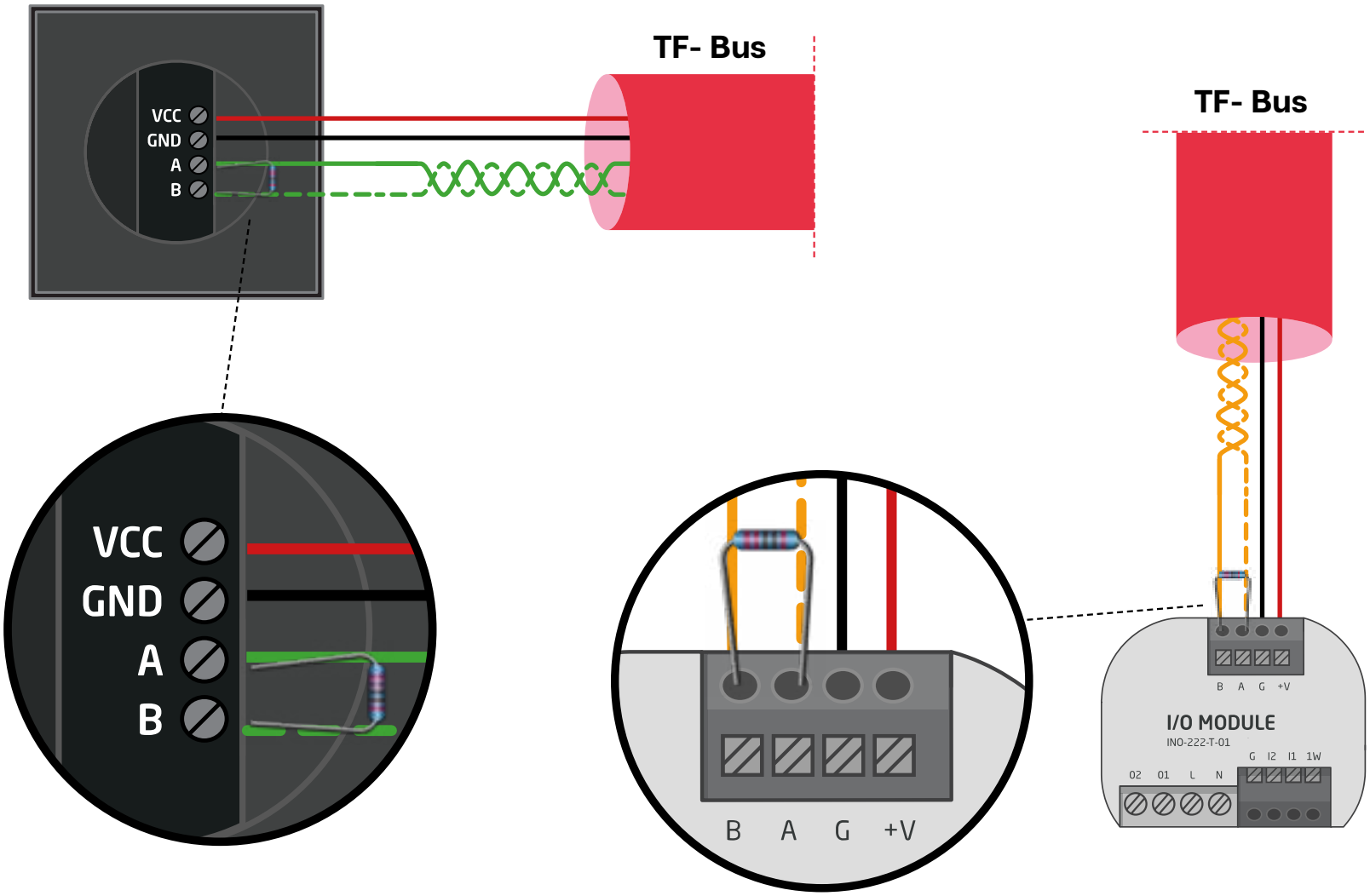
Termination - DIN modules



back to Table of contents

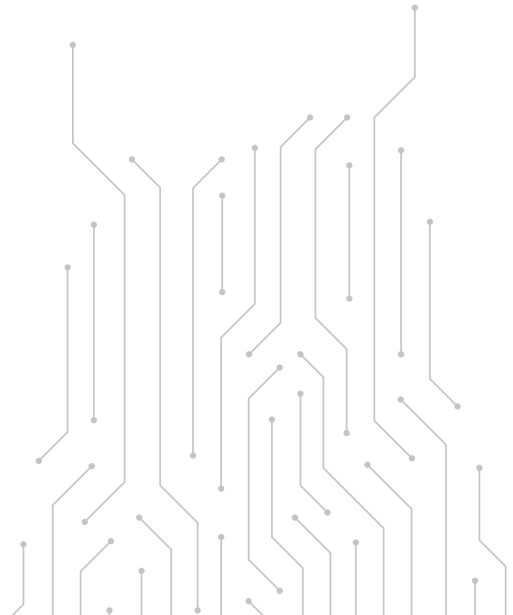
Termination - touch panels and flush-mounted modules

GRENTON TF-Bus Cable



back to Table of contents

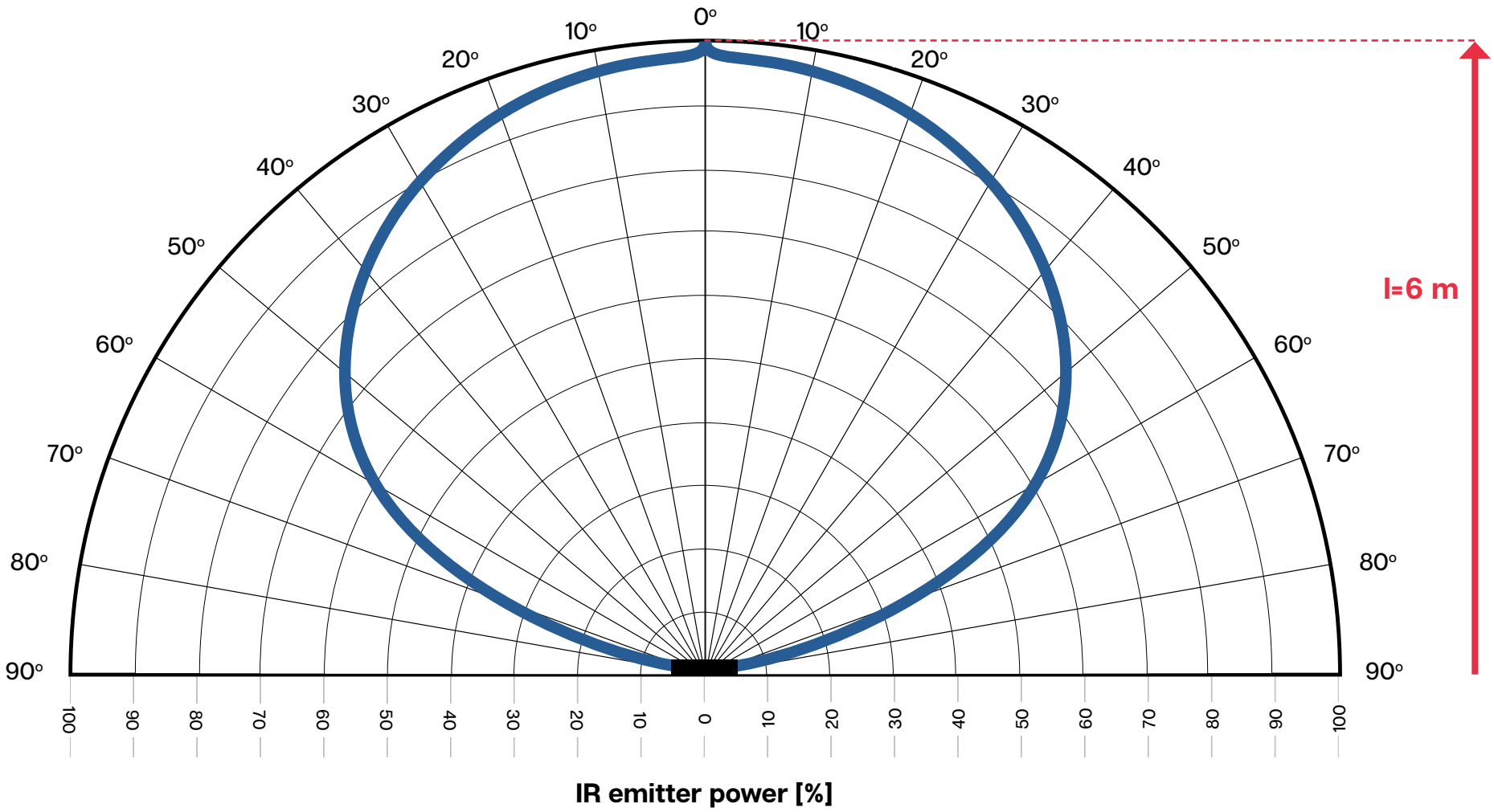
Multisensor



Placement - reading of sensor measurements

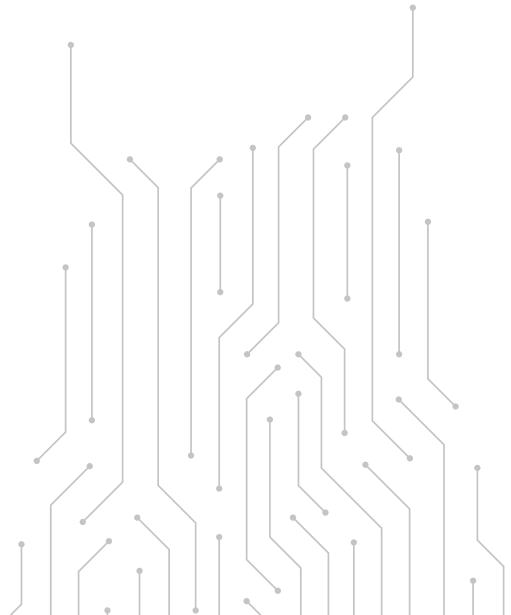
back to Table of contents

Radiation characteristics of IR emitter and operation range

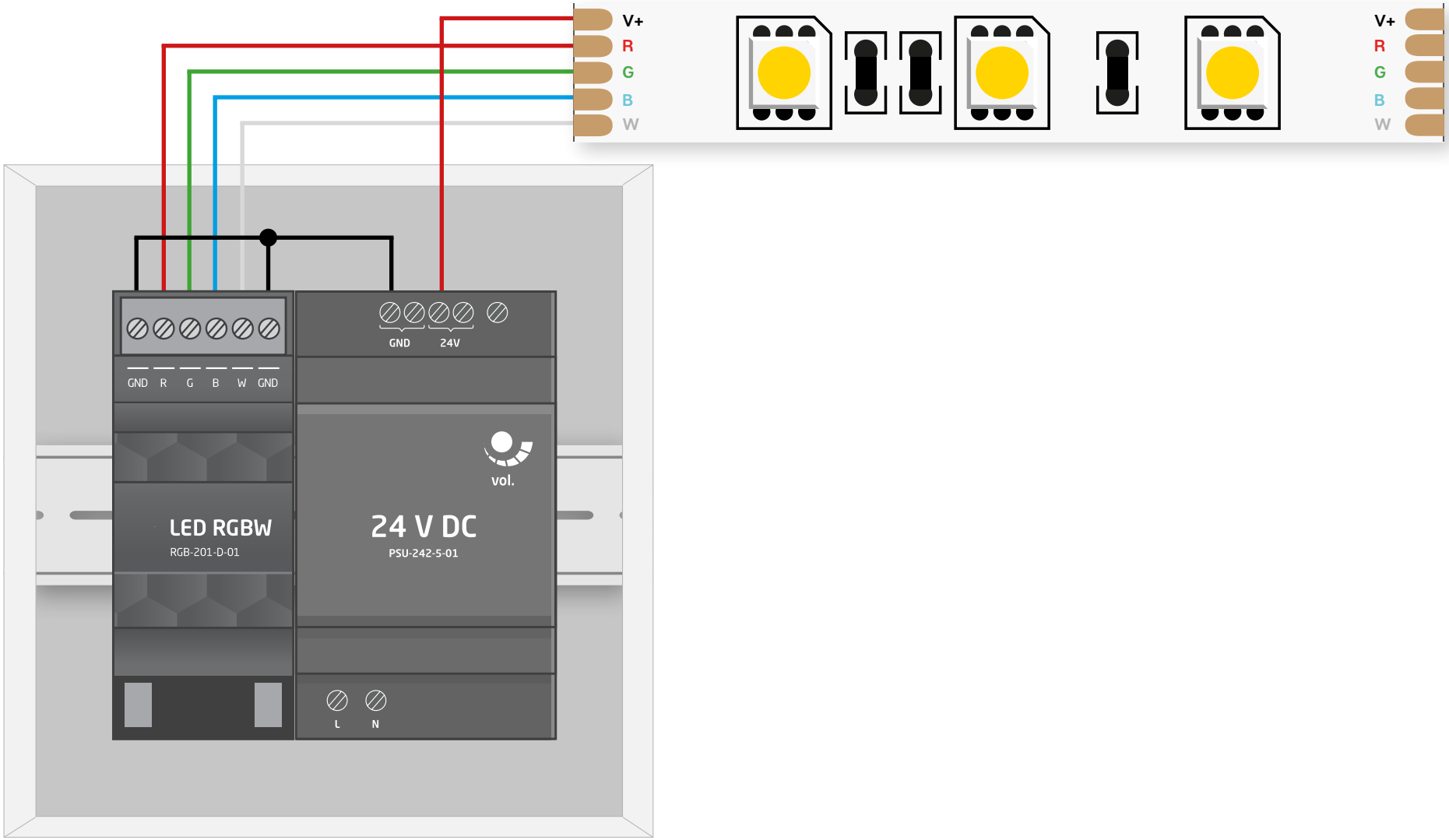


back to Table of contents

LED strips control

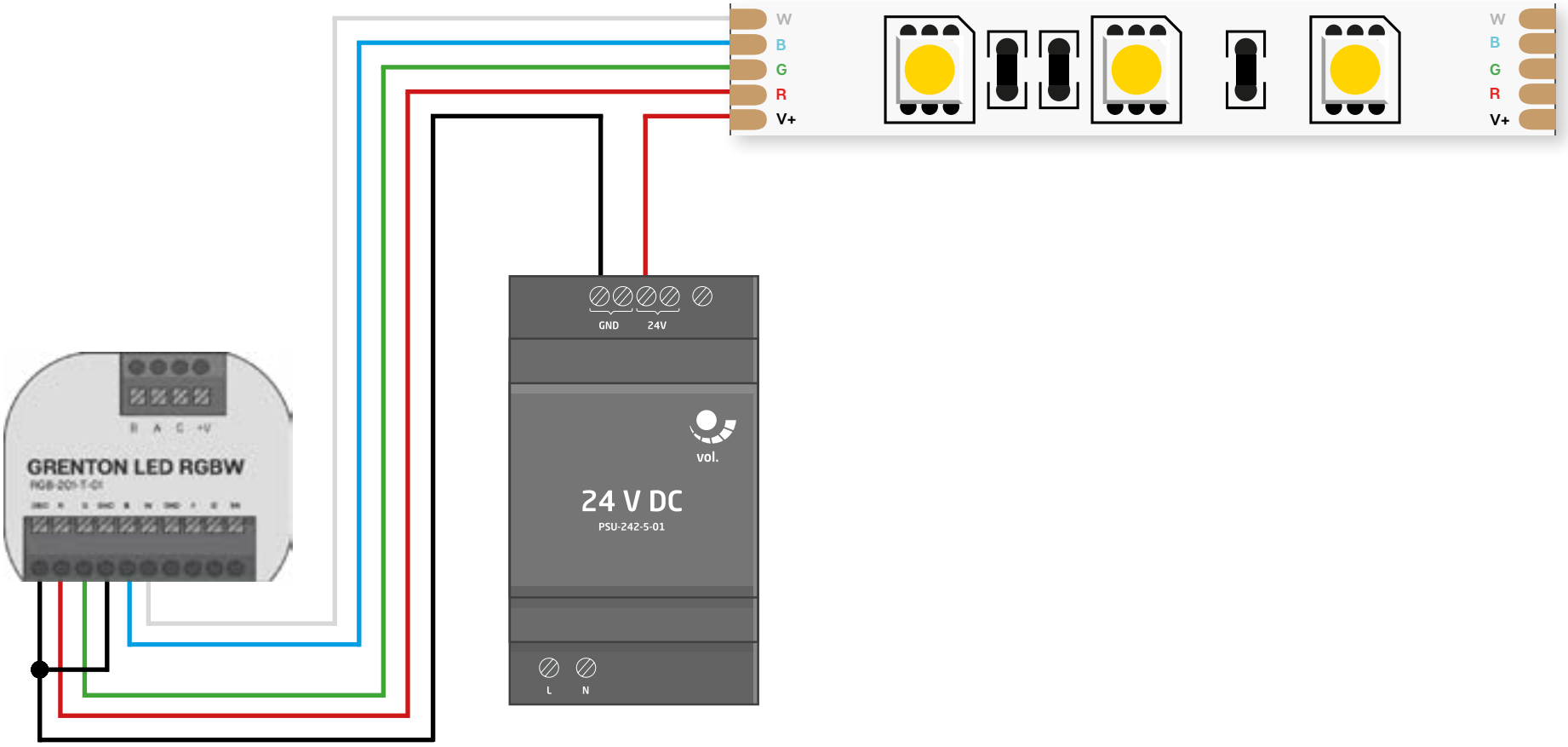


Wiring diagram - RGBW LED strips



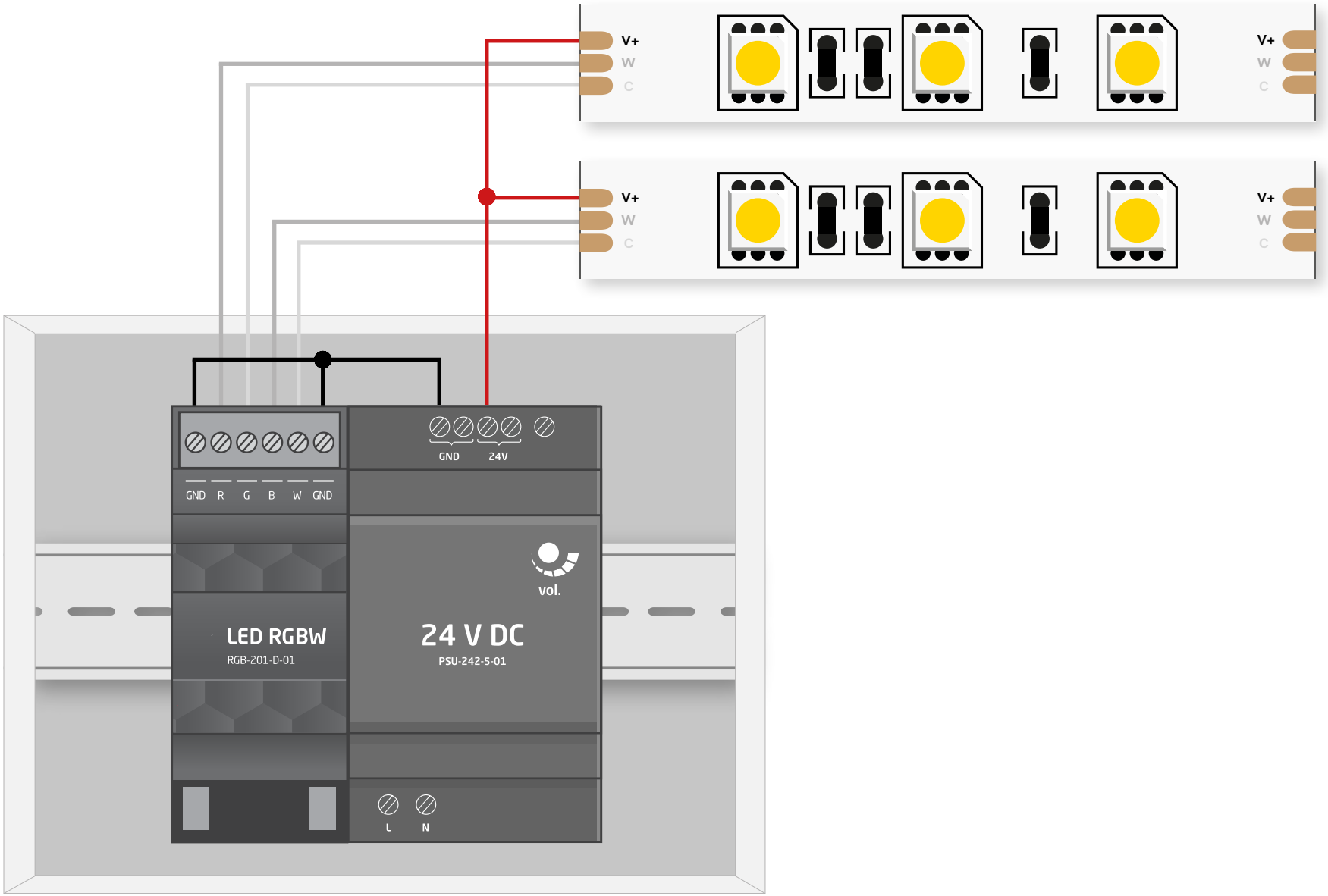
back to Table of contents

Wiring diagram - RGBW LED strips



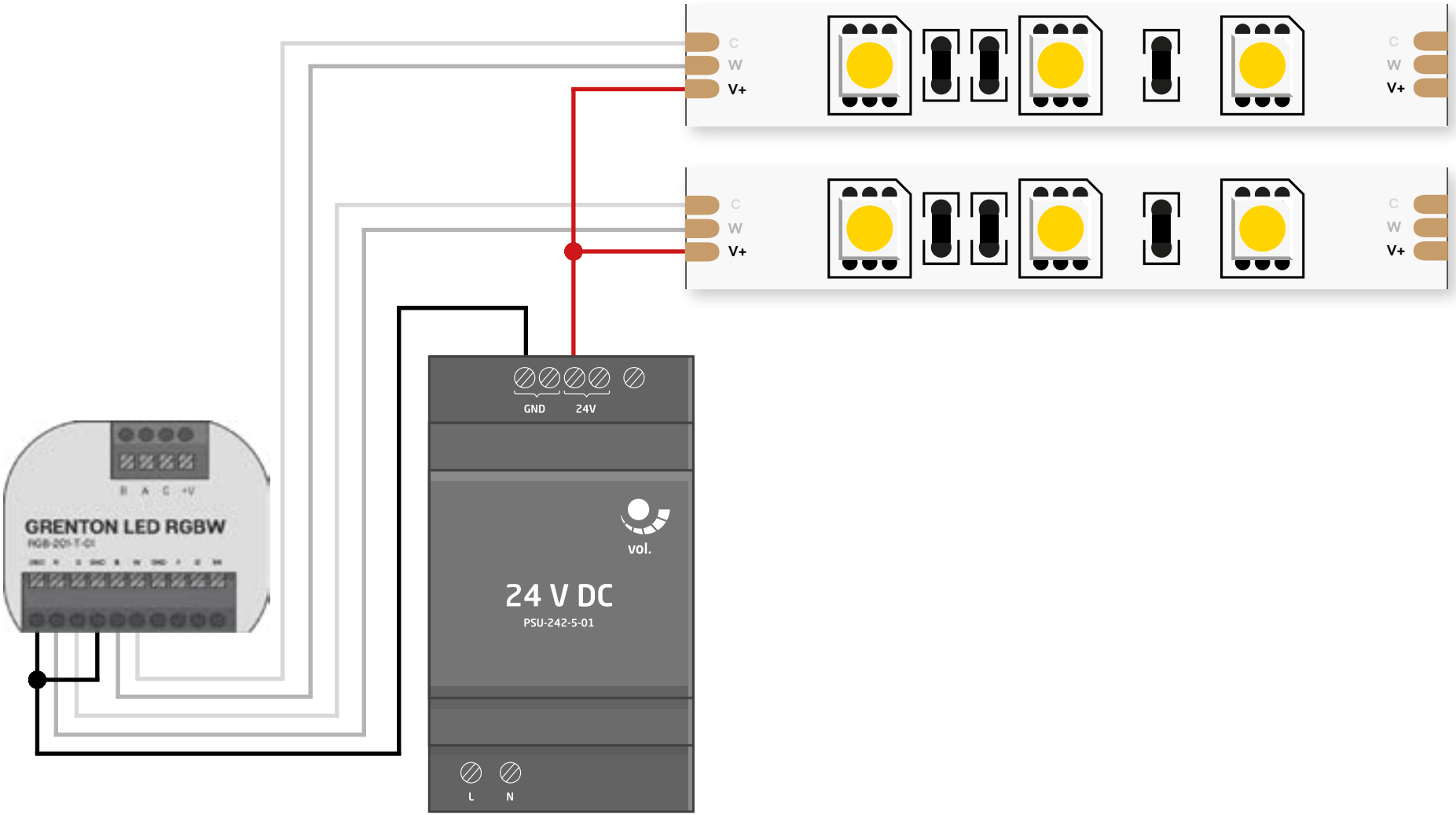
back to Table of contents

Wiring diagram - CTT LED strips



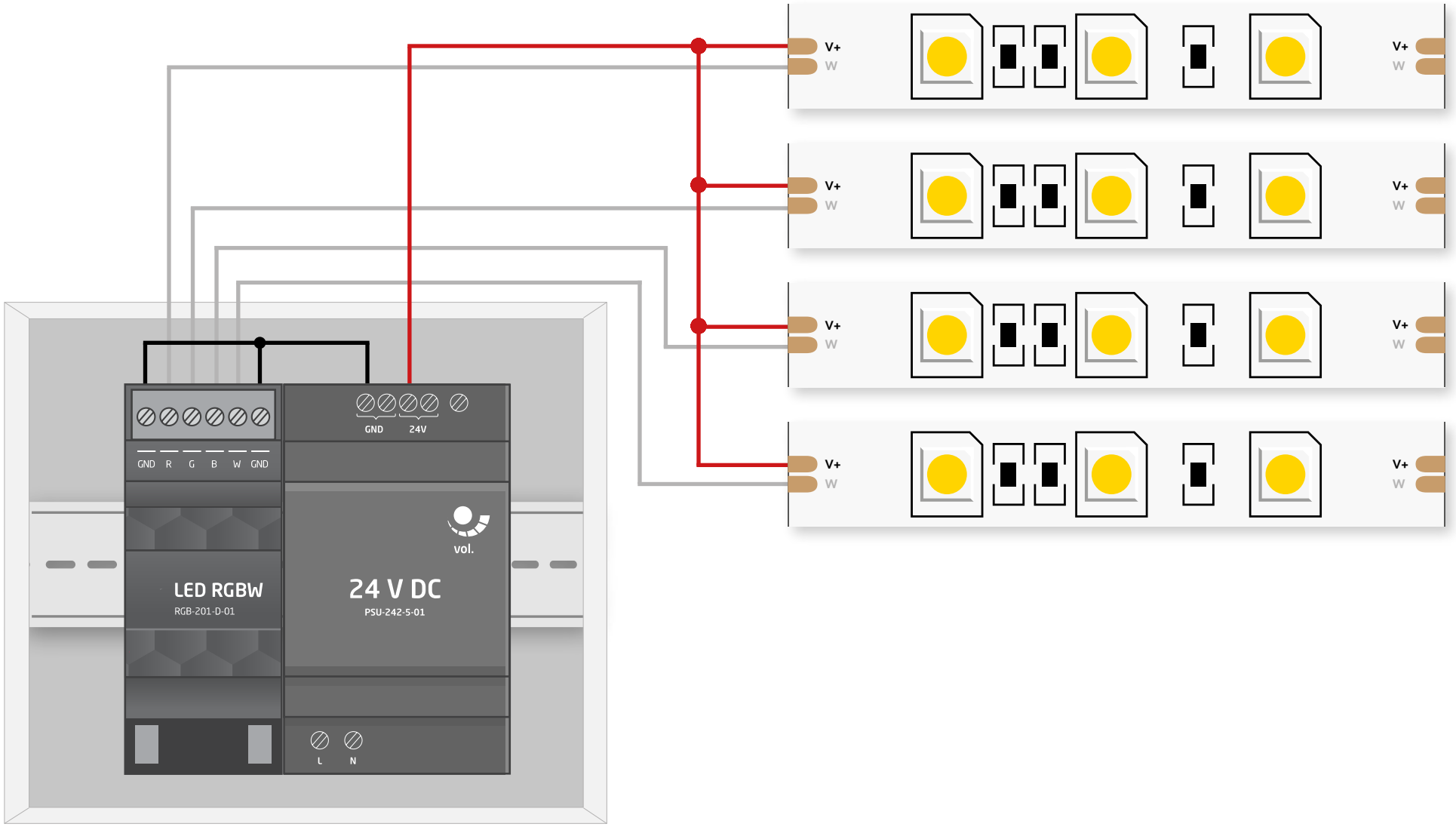
back to Table of contents

Wiring diagram - CTT LED strips



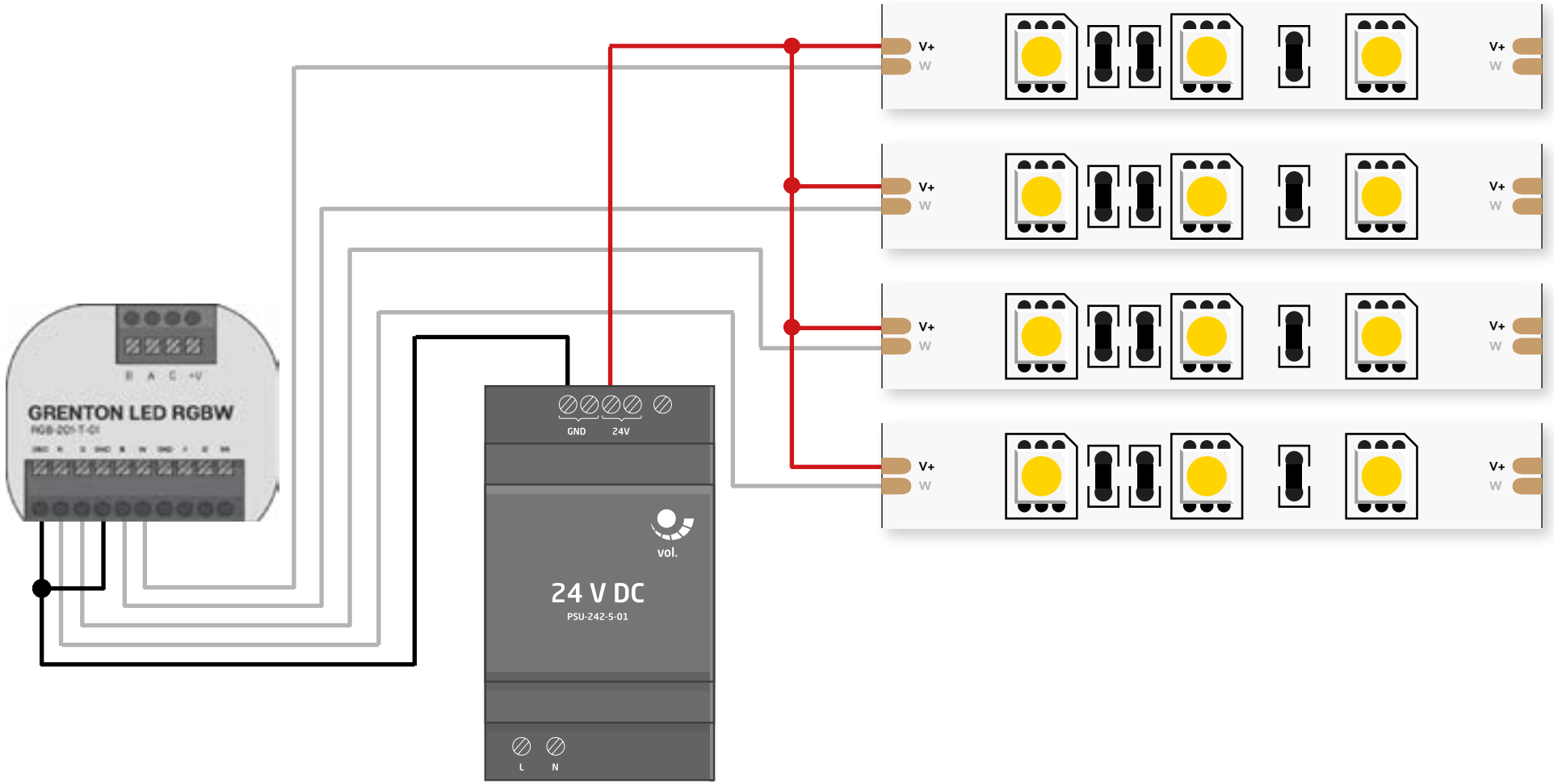
back to Table of contents

Wiring diagram - W LED strips



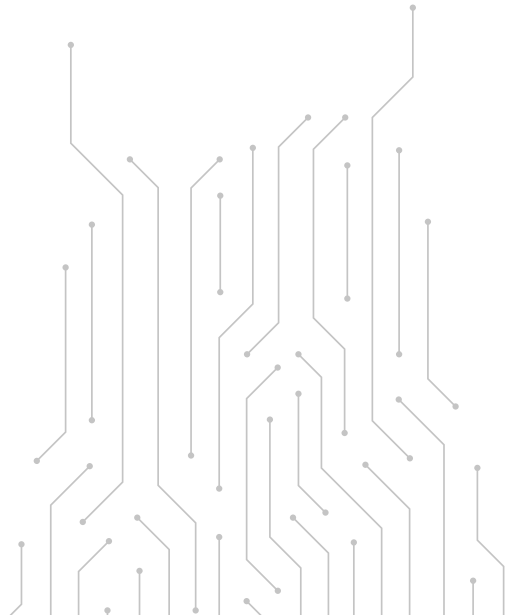
back to Table of contents

Wiring diagram - W LED strips

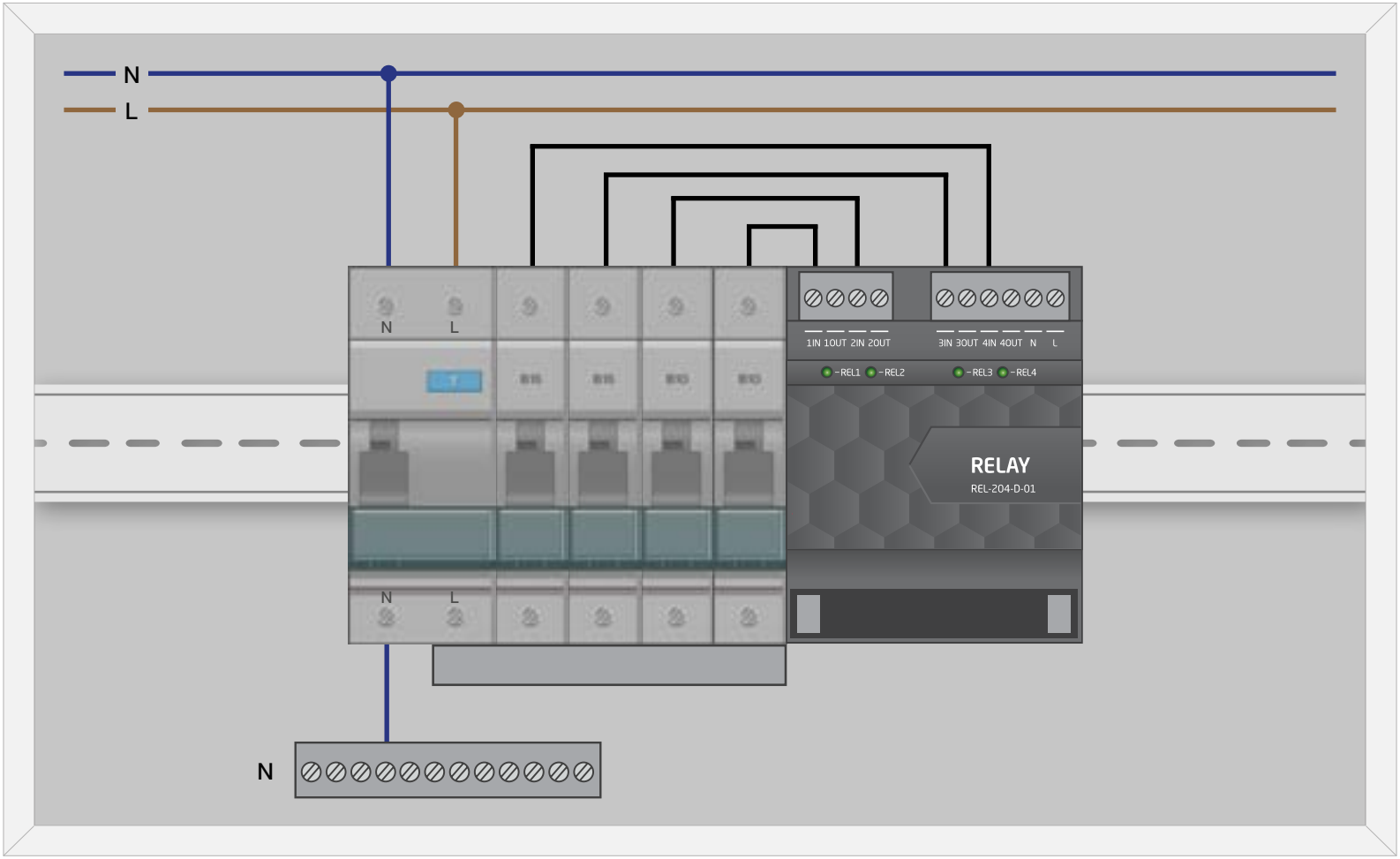


back to Table of contents

Modules protection

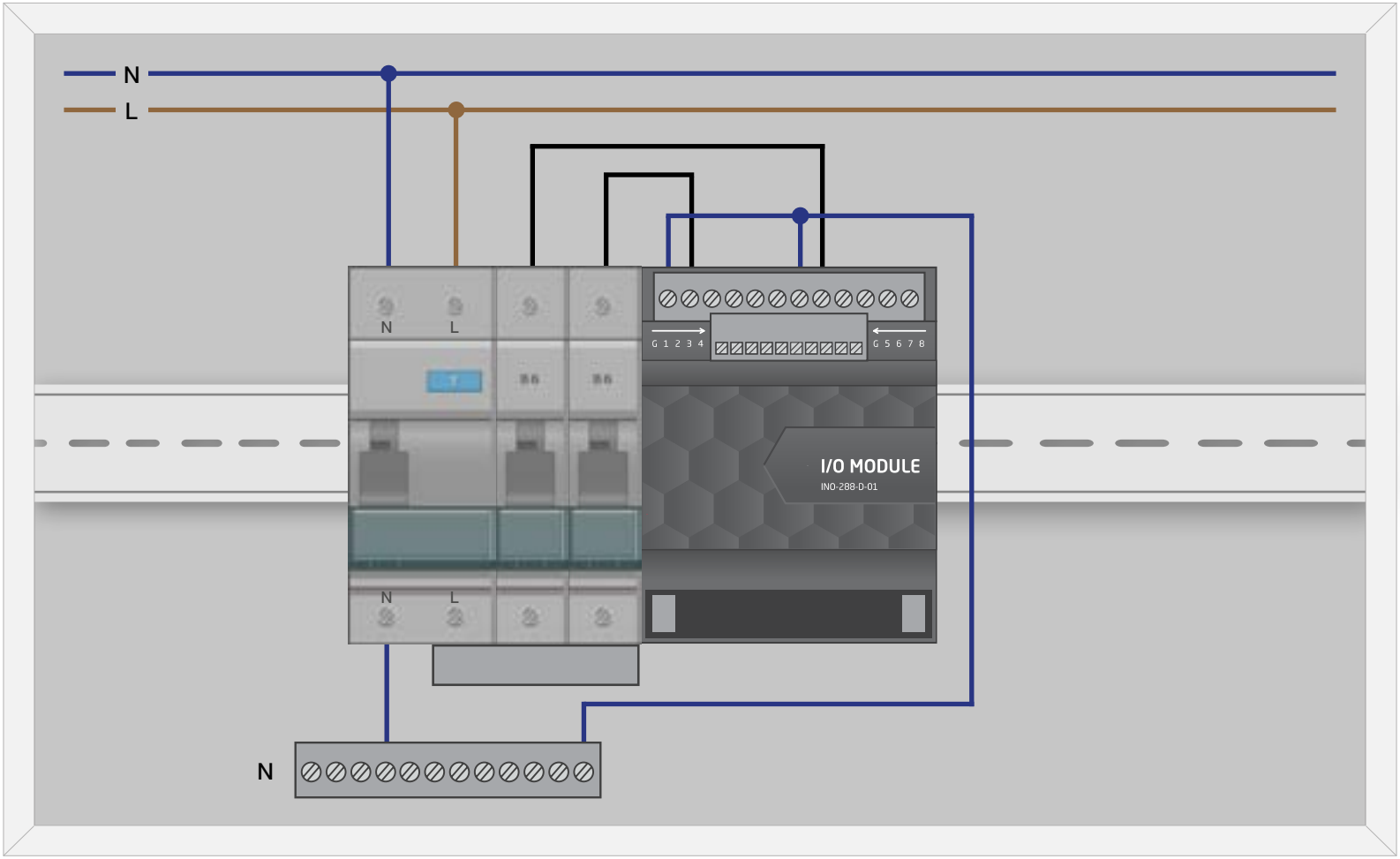


Residual current circuit breakers and overcurrent circuit breakers for Relay module



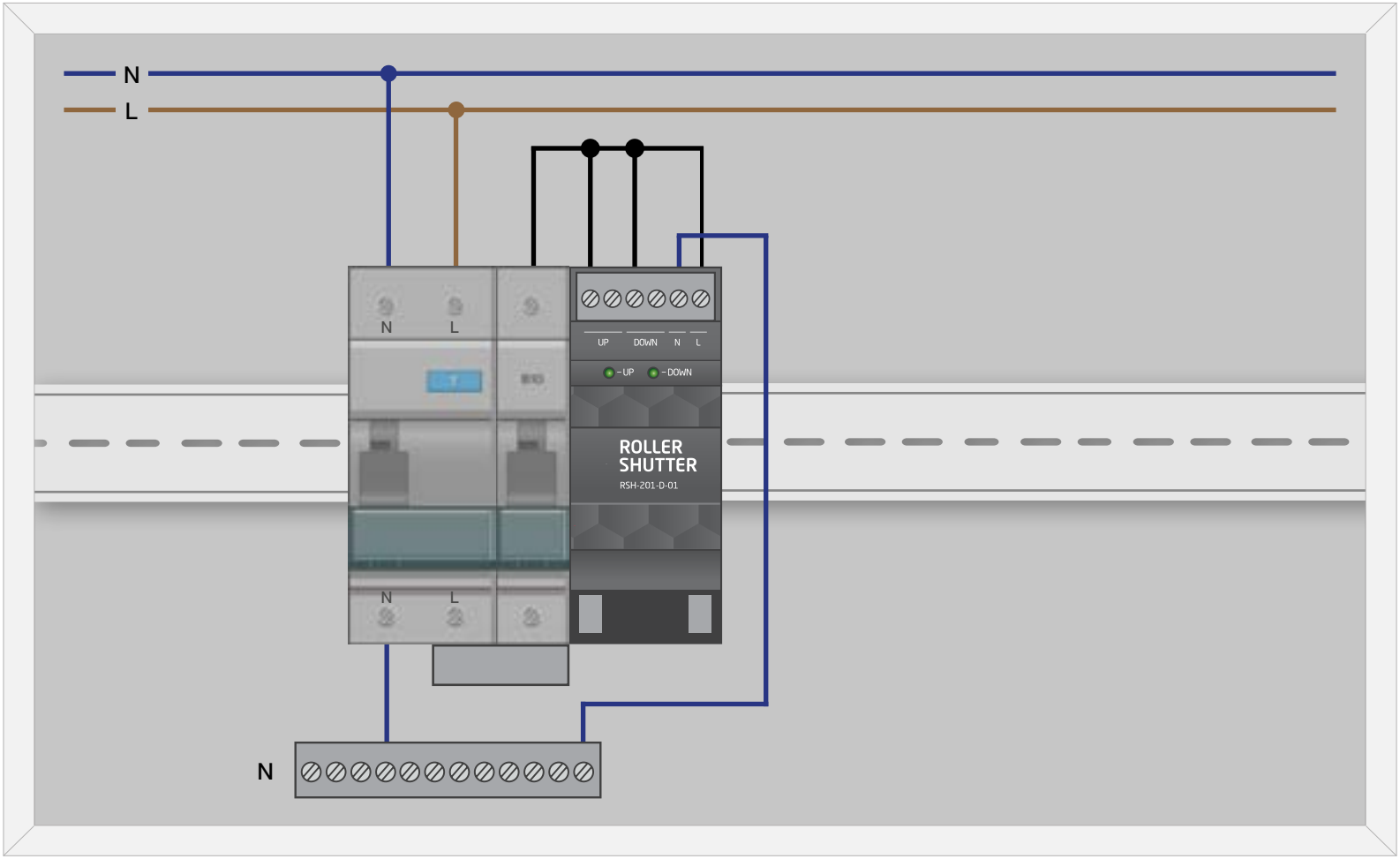
back to Table of contents

Residual current circuit breakers and overcurrent circuit breakers for I/O 8/8 module



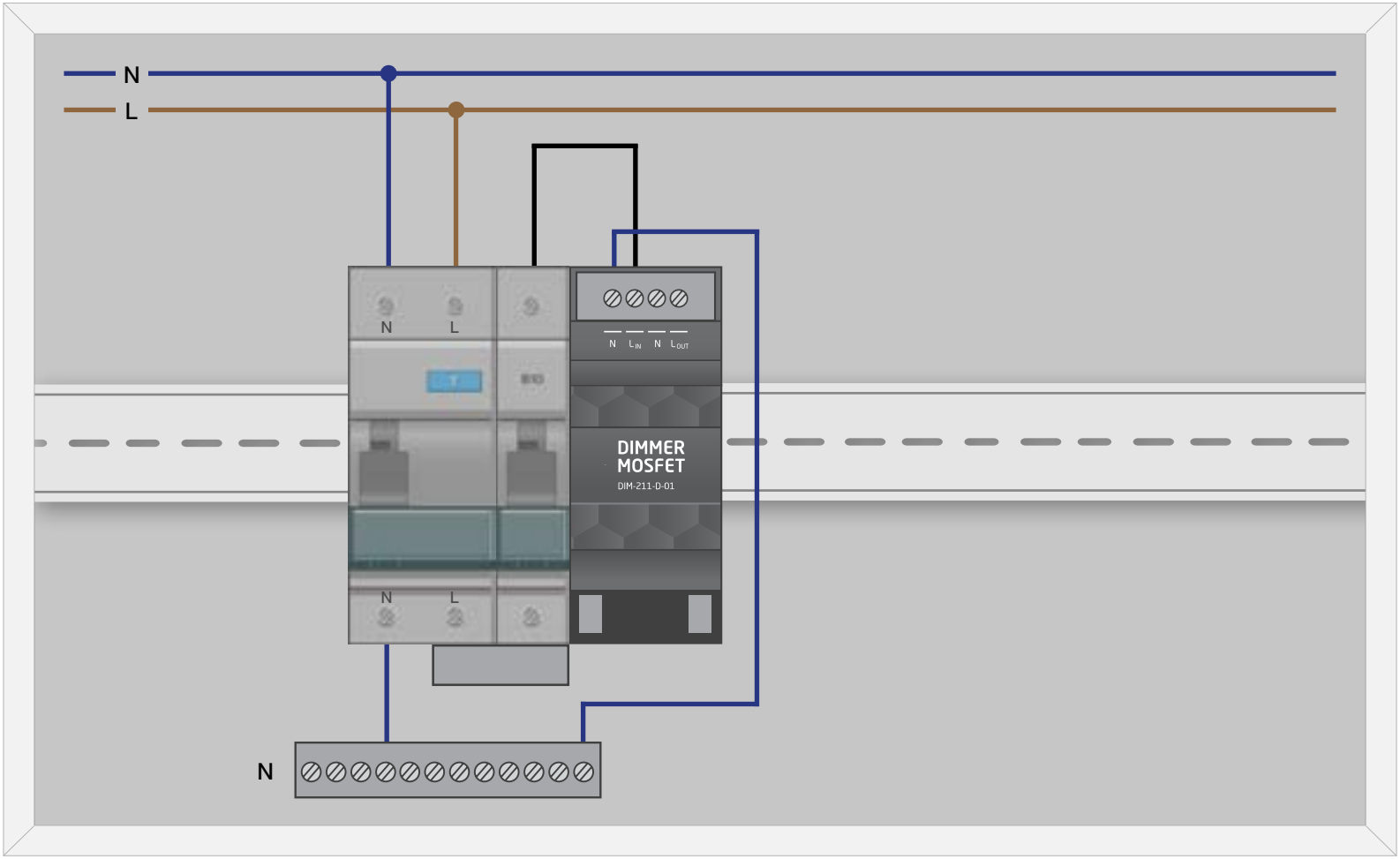
back to Table of contents

Residual current circuit breakers and overcurrent circuit breakers for Roller Shutter module



back to Table of contents

Residual current circuit breakers and overcurrent circuit breakers for Dimmer MOSFET module



back to Table of contents