

# Grenton

### Installation guideline

2023/2024



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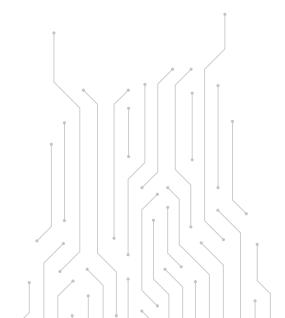
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### **Building wiring**

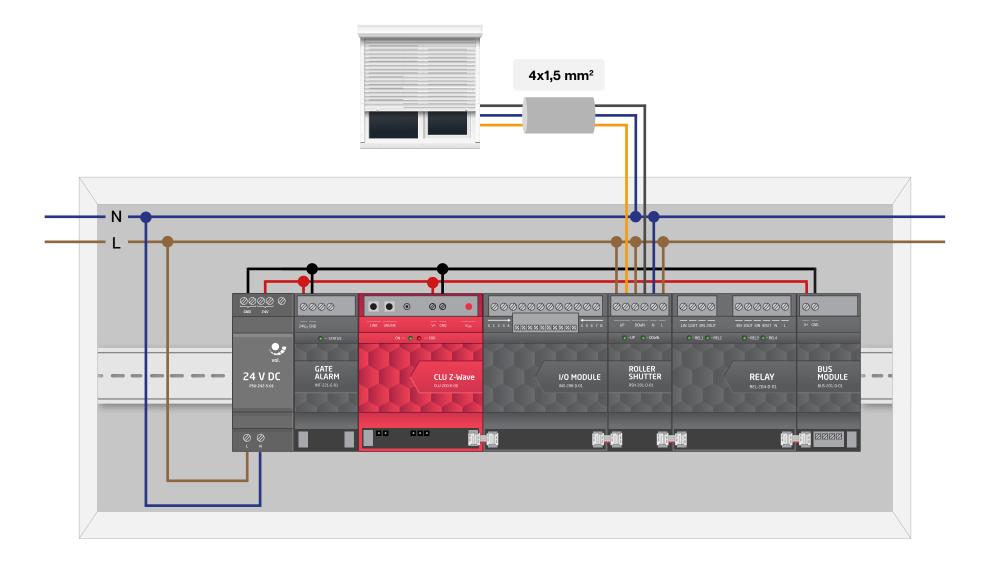


#### Building wiring Electrical installation - lighting

230V power cables 3x1,5 mm<sup>2</sup> Ν L <u>ØØØØ</u>Ø 0000 • •  $\odot \oslash$ 000000 0N - 💿 💿 - ERR GATE ALARM ROLLER SHUTTER BUS MODULE 24 V DC I/O MODULE RELAY CLU Z-Wave ••• . . . Did**e Di**c Dit=Dit Dia=Dia ii-ii eeee

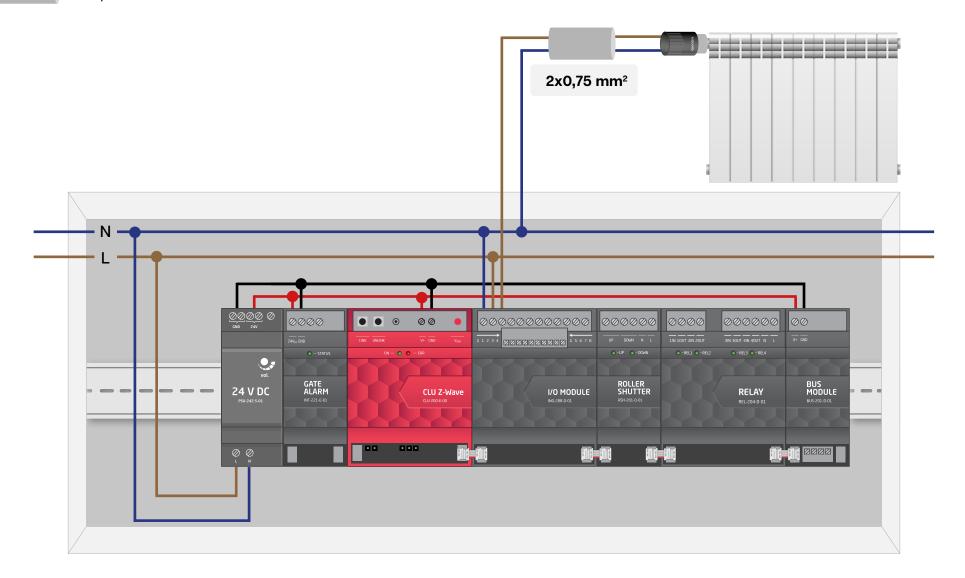
### **Electrical installation - roller shutters**

230V power cables

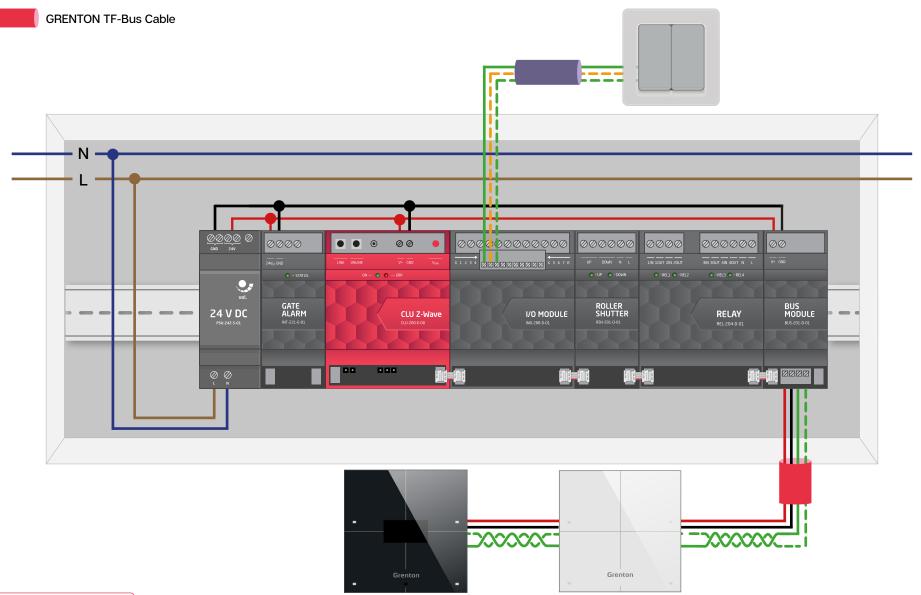


#### Building wiring Electrical installation - heating

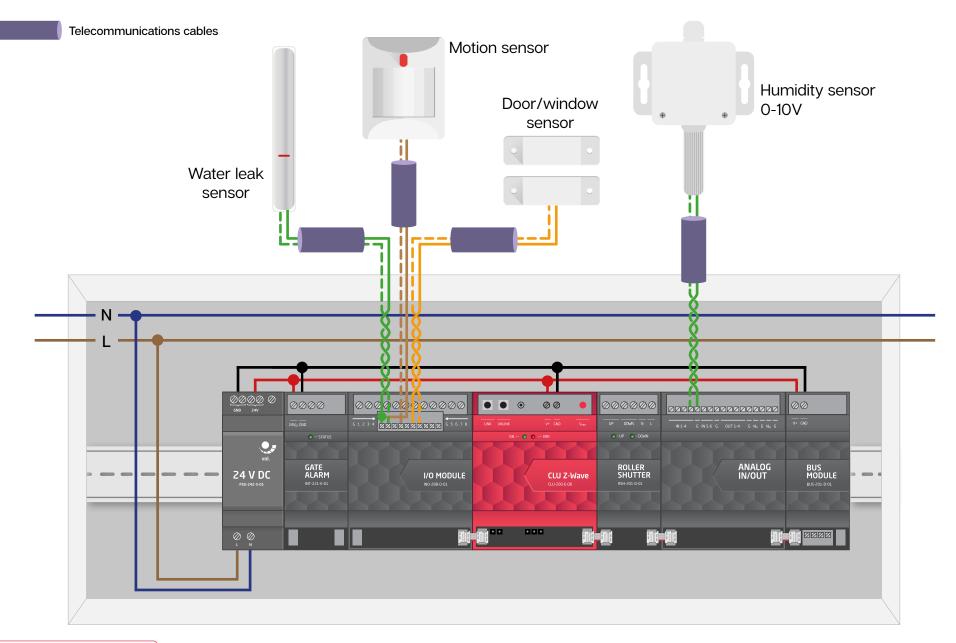
230V power cables



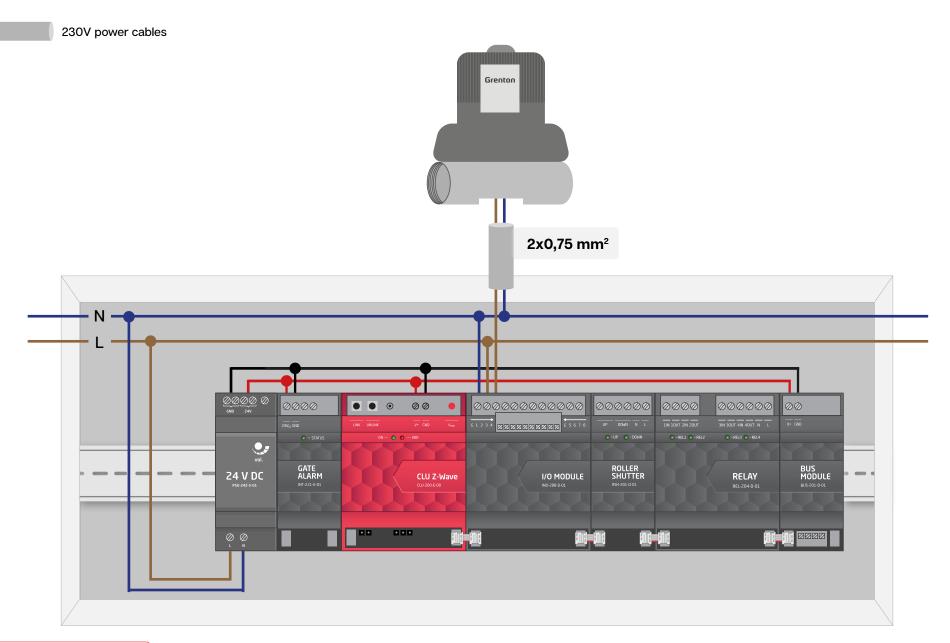
# Building wiring Electrical installation - touch panels and switches



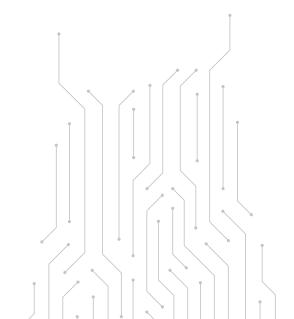
#### Building wiring Electrical installation - sensors



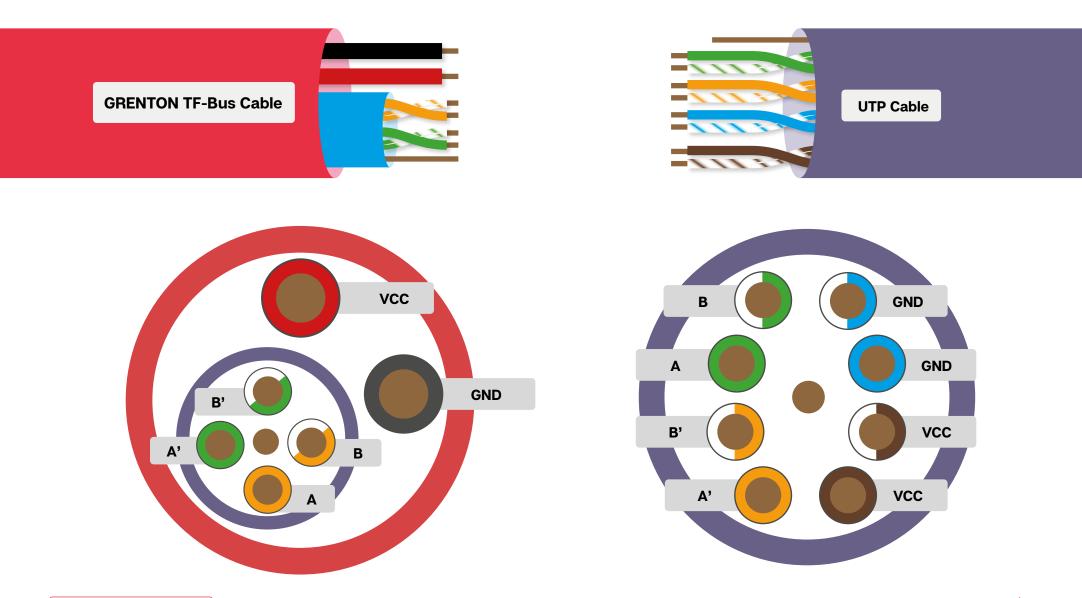
### **Electrical installation - water valves**



### **Grenton TF-Bus**

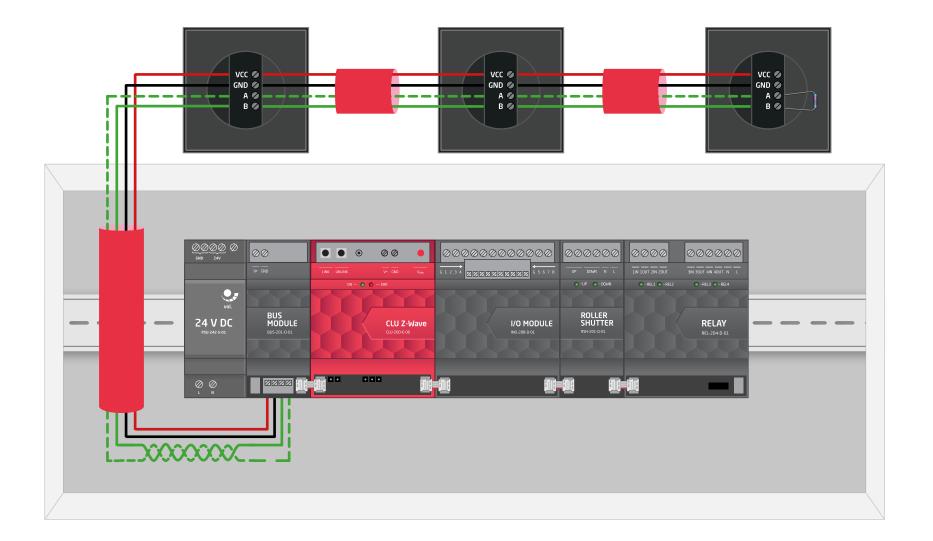


#### Grenton TF-Bus Bus cable - requirements



#### Grenton TF-Bus Serial data communication wiring

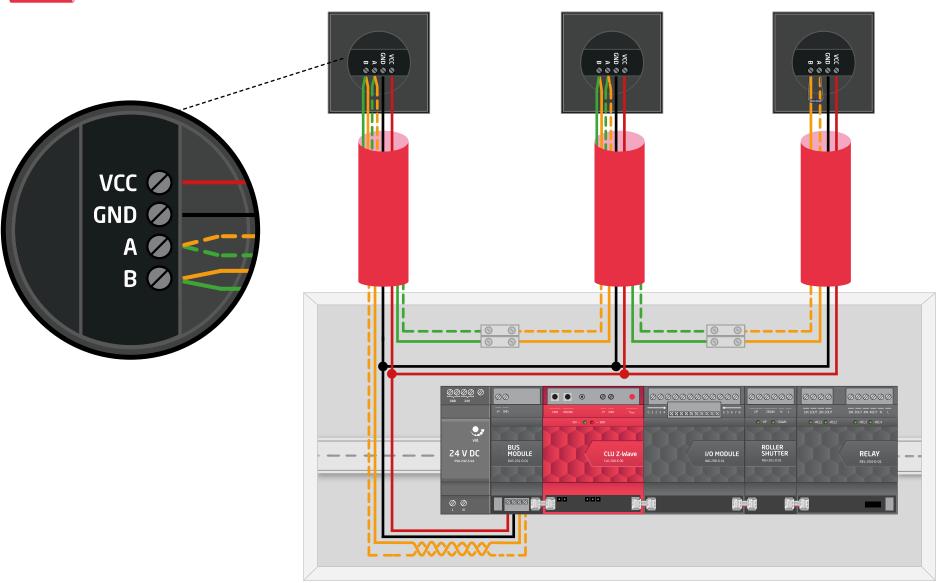
**GRENTON TF-Bus Cable** 



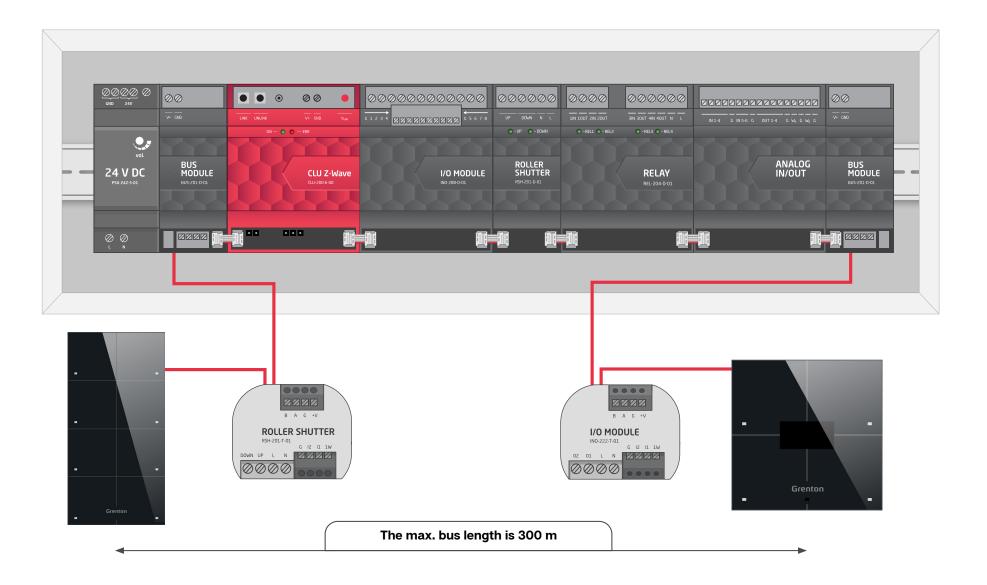
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#### Grenton TF-Bus Star data communication wiring - bus "straightening"

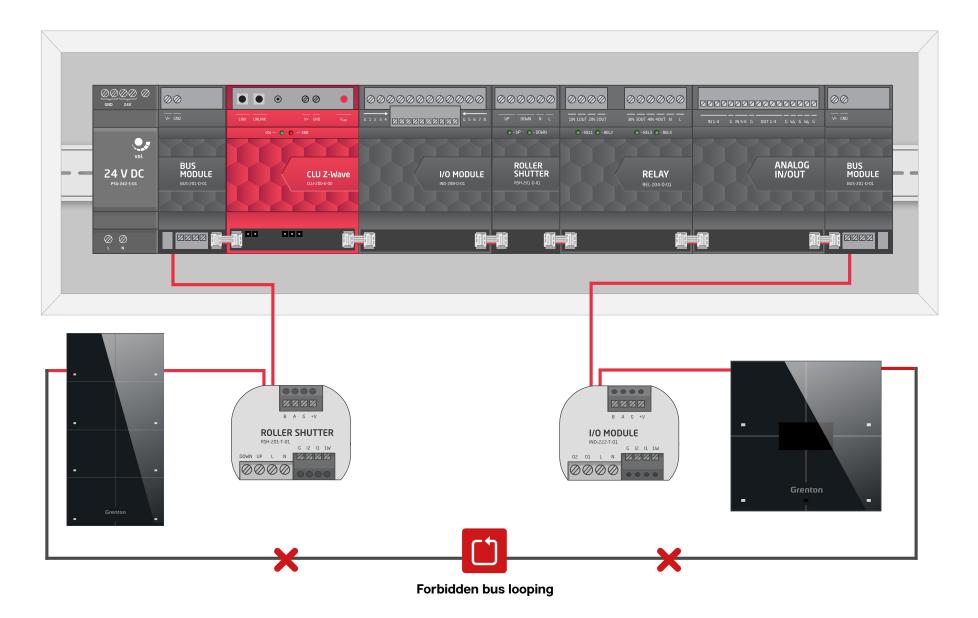
**GRENTON TF-Bus Cable** 



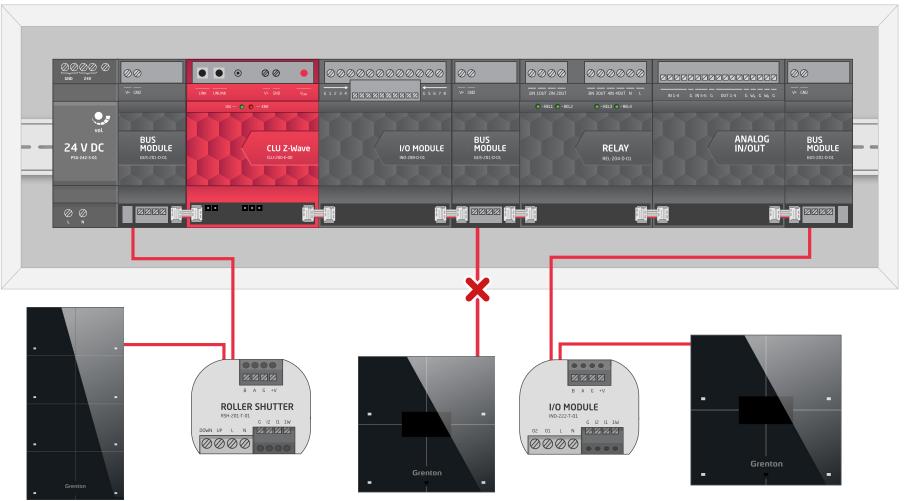
# Grenton TF-Bus Bus length



#### Grenton TF-Bus Forbidden bus looping

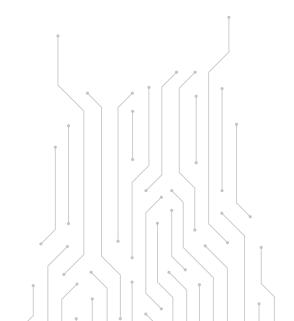


#### Grenton TF-Bus Forbidden branching



Forbidden branch

### **Wireless protocols**



Wireless protocols

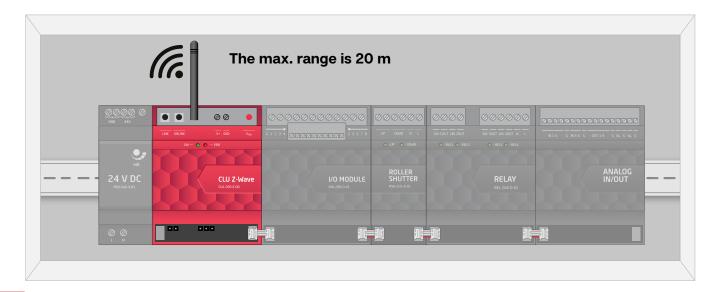
### **Z-Wave**







G I1 I2 1W



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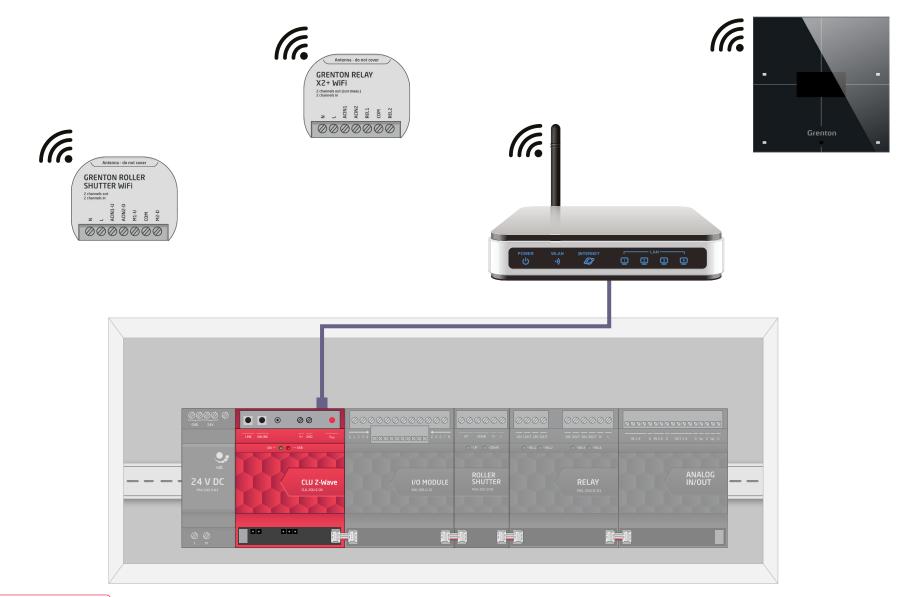
G |1 |2 1W

GRENTON ROLLER SHUTTER Z-Wave RSH-202-Z-01

N L 01 02

0000

### Wireless protocols System including Wi-Fi modules and CLU



#### Wireless protocols System including Wi-Fi modules without CLU

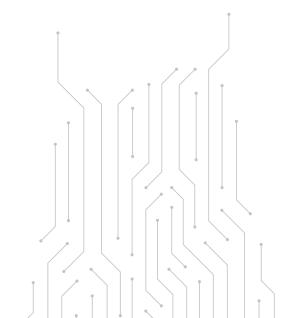




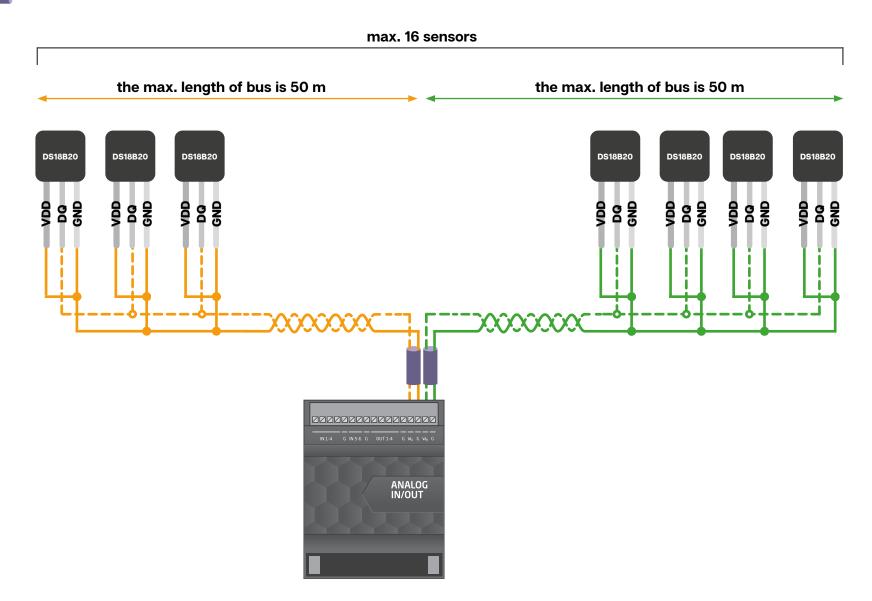


N L ACIN1 ACIN2 REL1 COM REL2 0000000

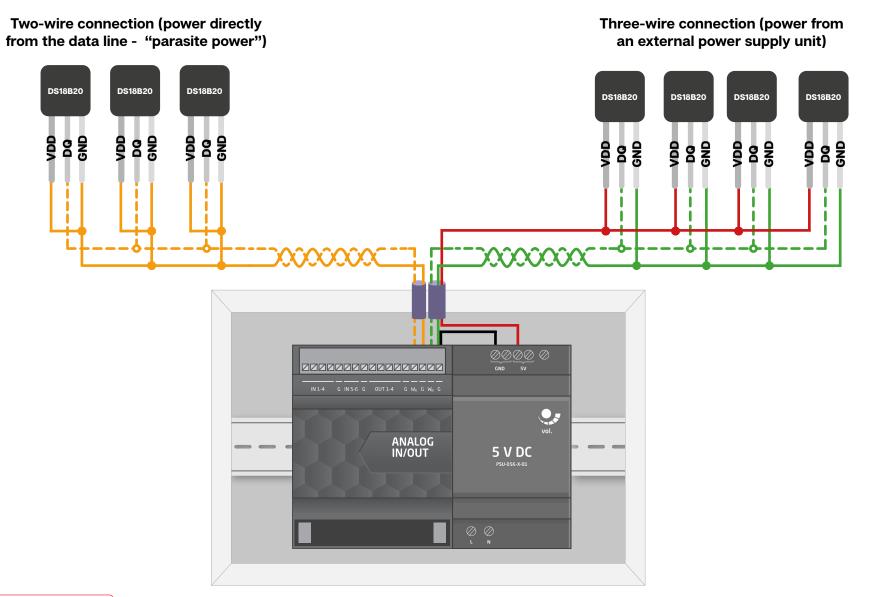
### **1-Wire bus**



### <sup>1-Wire bus</sup> Data communication wiring



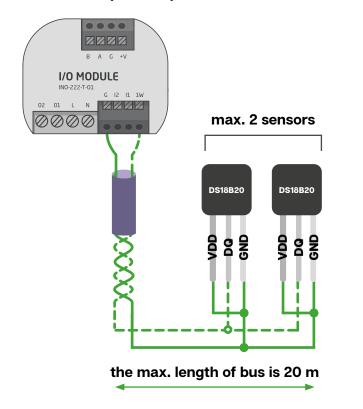
#### <sup>1-Wire bus</sup> Analog IN/OUT module - sensors connection



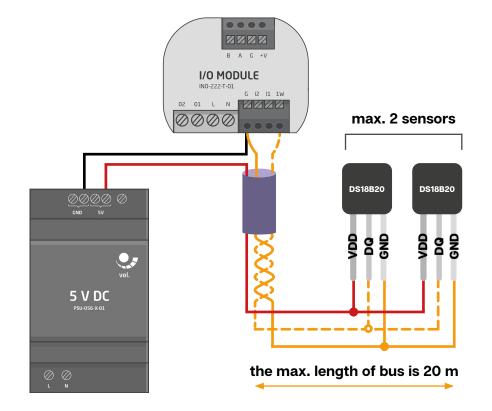
#### <sup>1-Wire bus</sup> Flush-mounted modules - sensors connection

Telecommunications cables

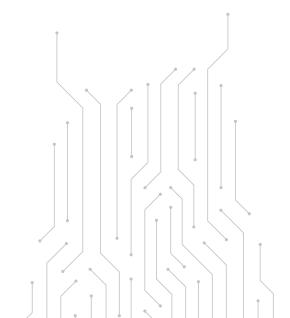
### Two-wire connection (power directly from the data line - "parasite power")



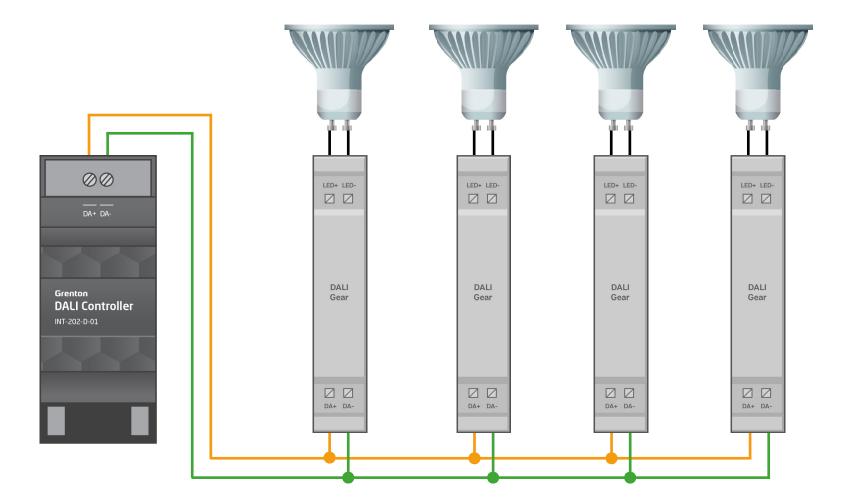
### Three-wire connection (power from an external power supply unit)



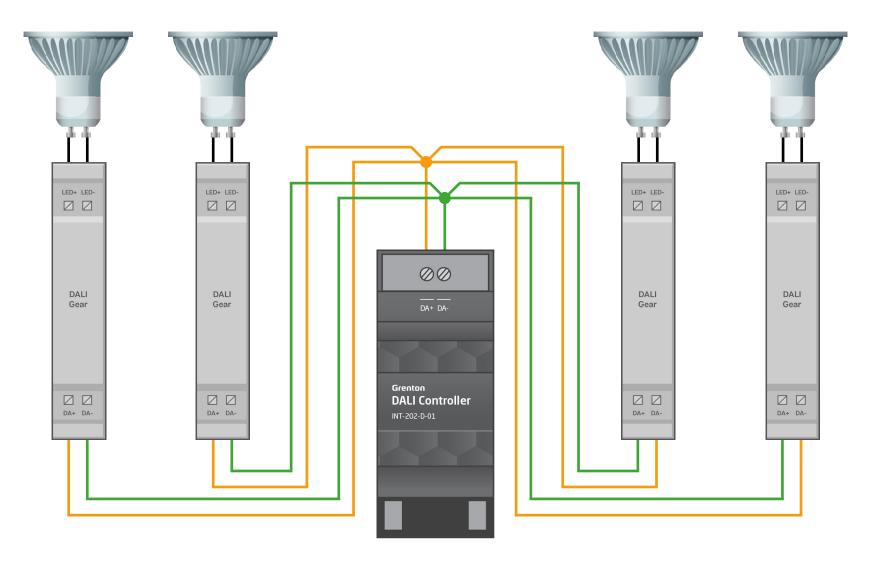
### **DALI** bus



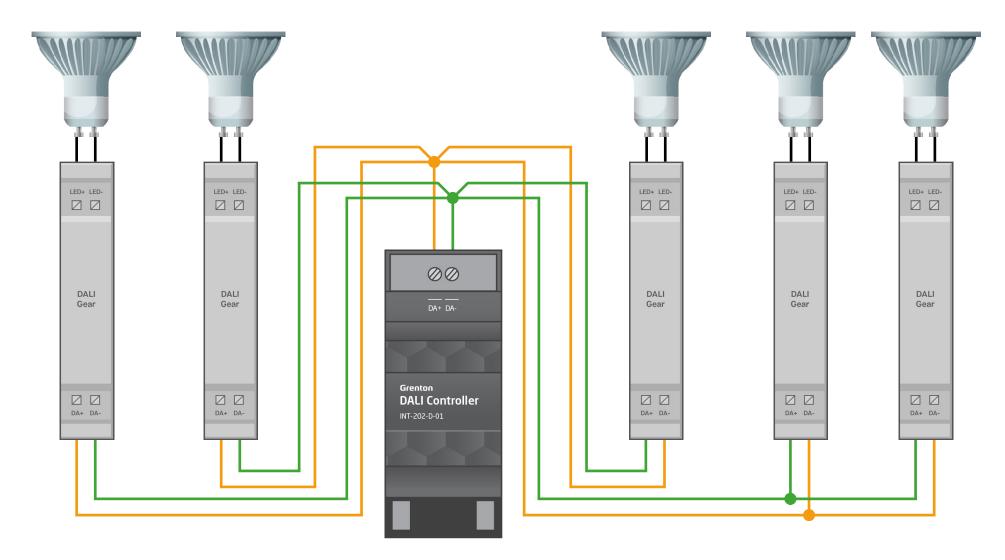
# Serial data communication wiring



# Star data communication wiring



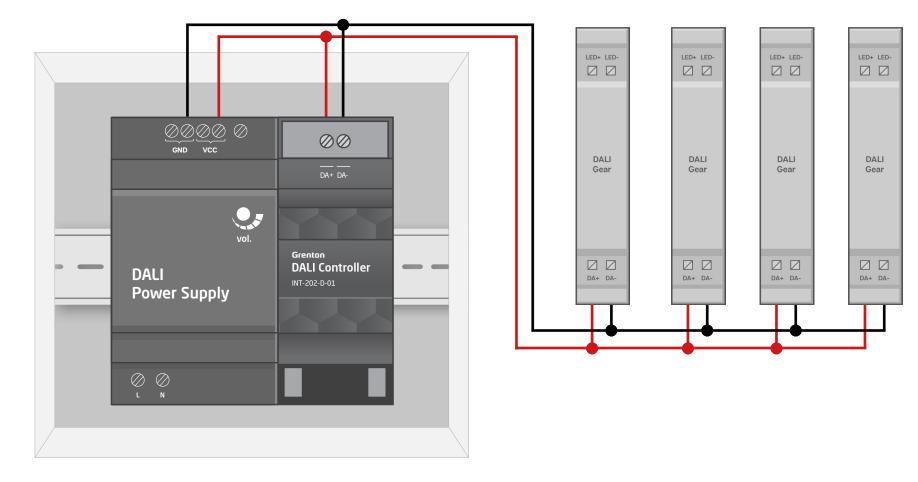
# Mixed data communication wiring



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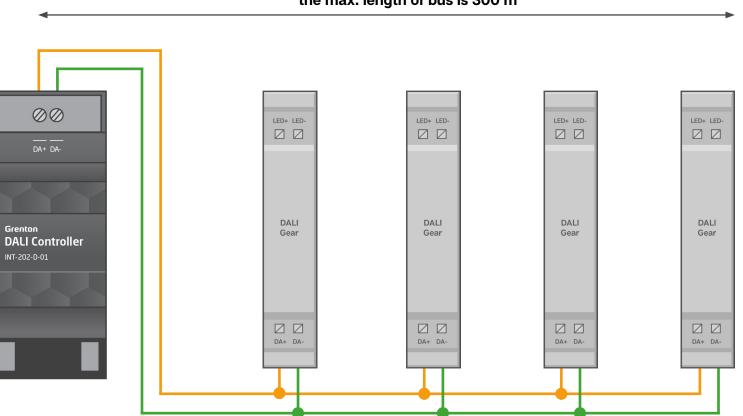
# Bus power supply

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



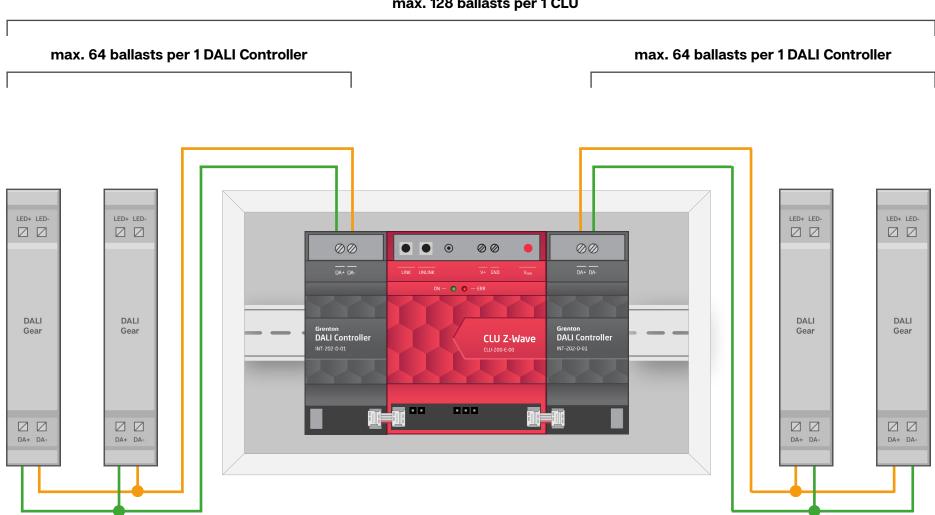
### DALI bus - requirements

- Recommended cable cross-section is 1.5 mm<sup>2</sup>
- No polarity for the DALI bus
- Looping, short-circuiting the bus or connecting other buses are not allowed
- DALI bus voltage is 13-20V



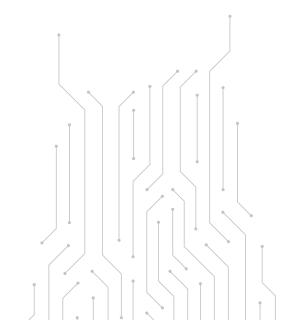
the max. length of bus is 300 m

#### DALI bus **Number of ballasts**

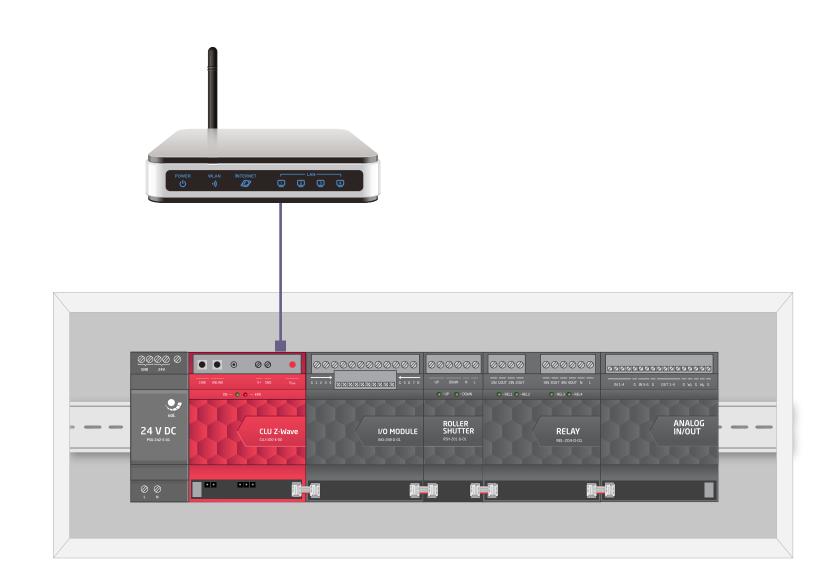


max. 128 ballasts per 1 CLU

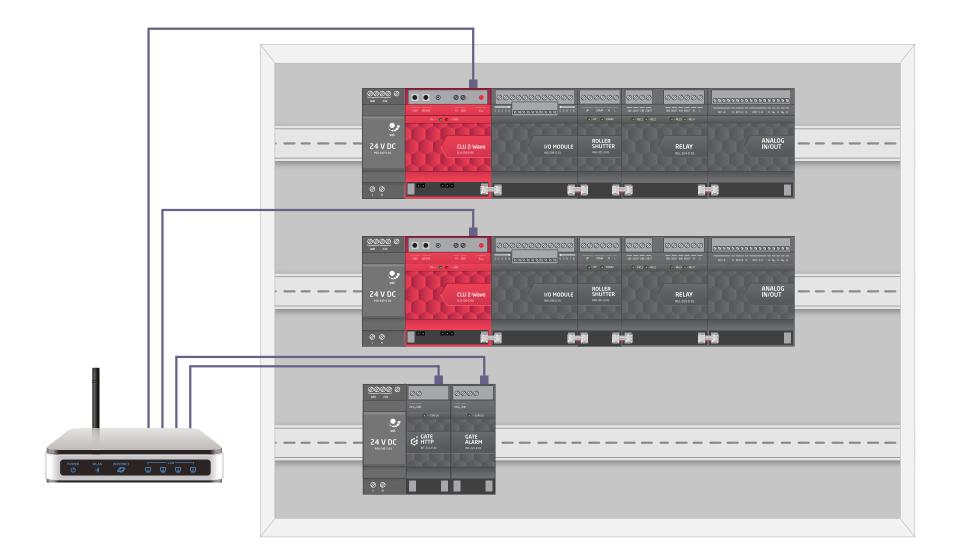
### **System communication**



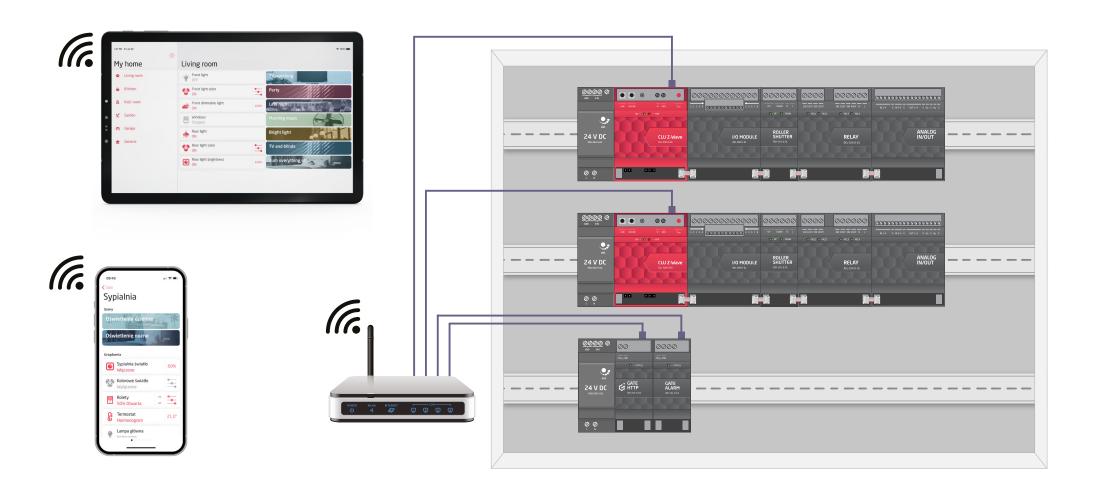




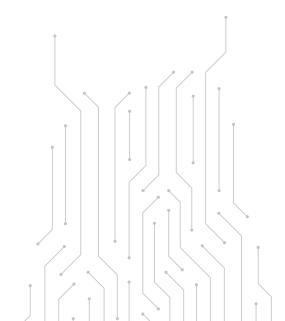
#### System communication System with several CLU class devices



### System communication Mobile devices



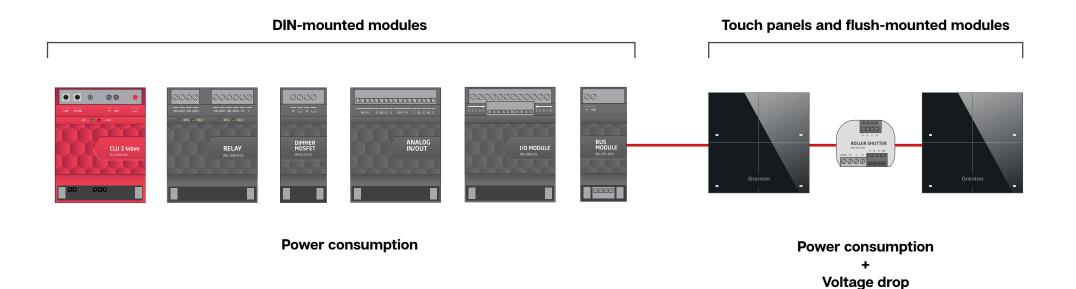
## System power supply



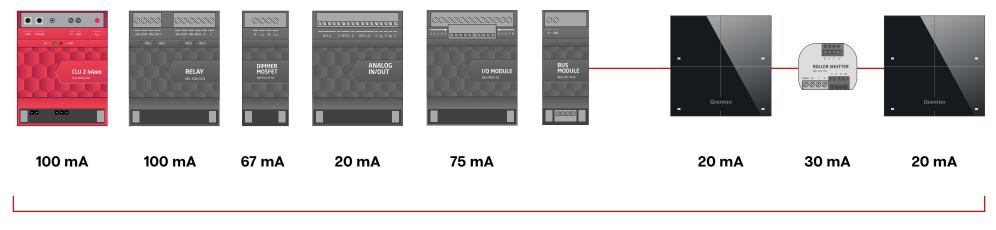
#### **Power supply unit selection**

#### 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



#### System power supply Power supply unit selection - example



Max. summary power consumption for above modules is 432 mA

Max. summary power consumption + 30% buffer

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

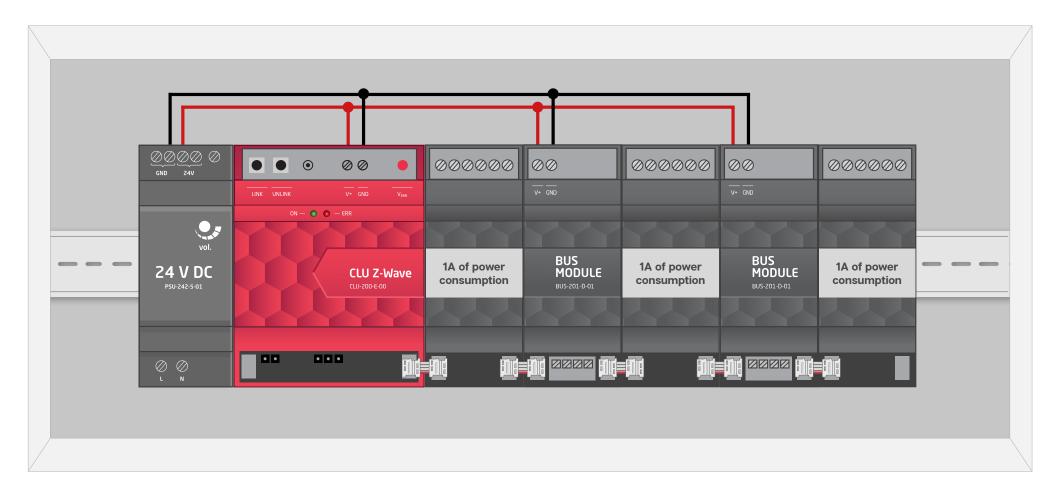
Min. power of a power supply unit = 561.6 mA



24 VDC 600 mA

System power supply

### System power supply



24V DC power supply unit

Min. 3A

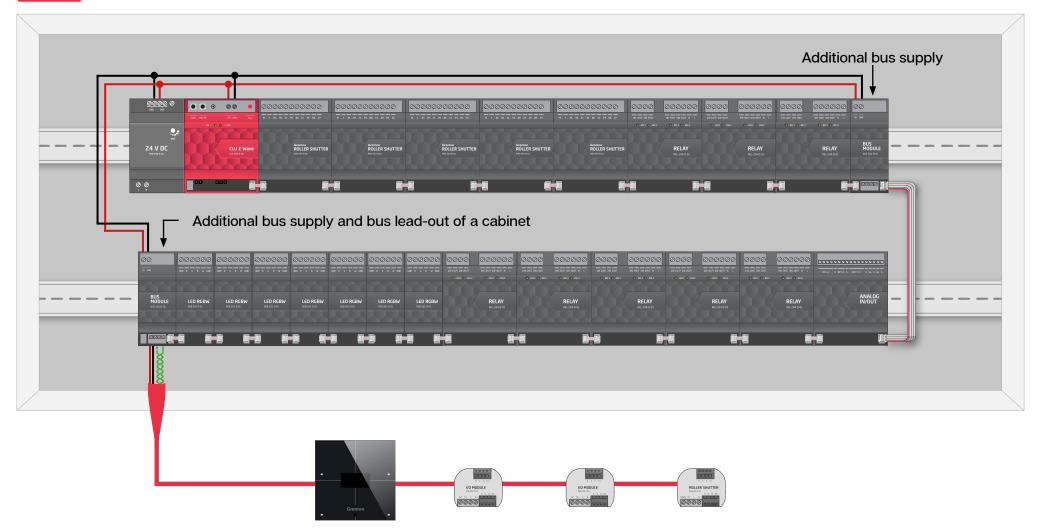
#### System power supply

#### System power supply - 1<sup>st</sup> example



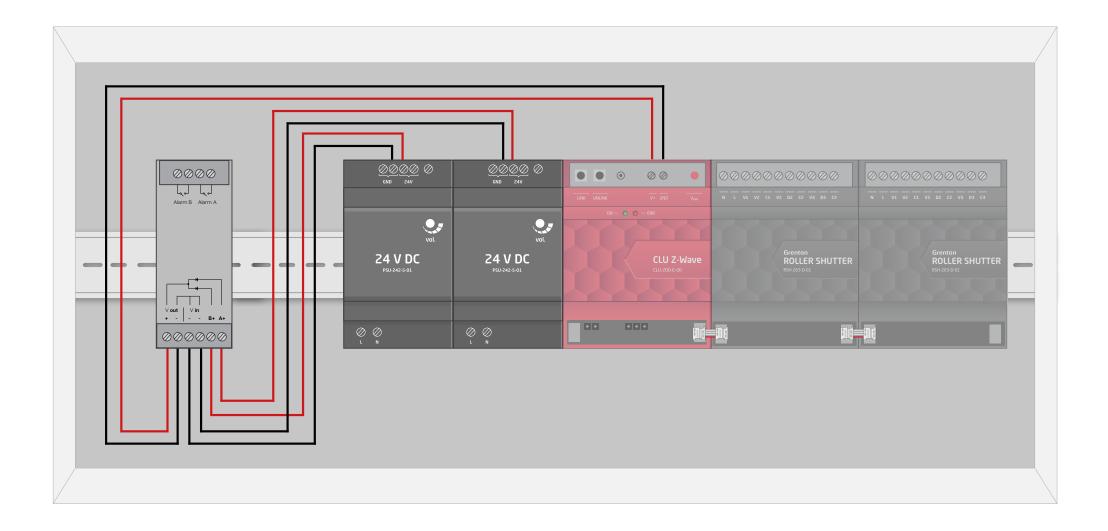
## System power supply - 2<sup>nd</sup> example

**GRENTON TF-Bus Cable** 

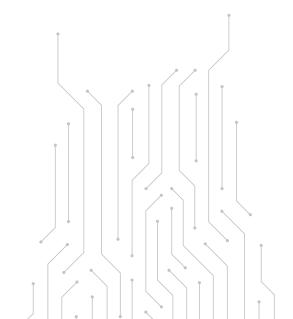


System power supply

### Power supply of the system using a redundancy module

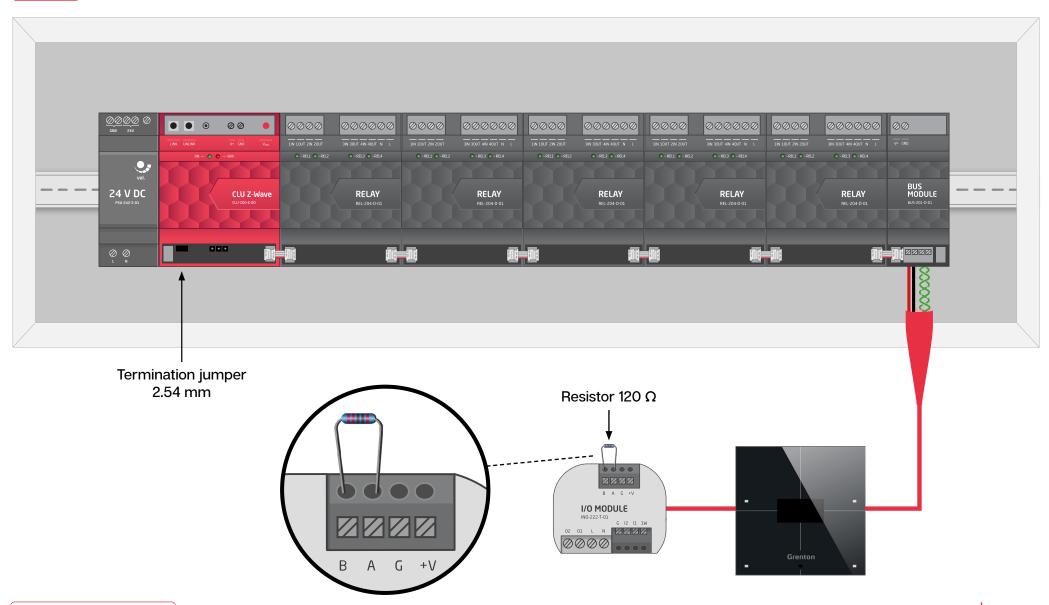


### **Bus termination**

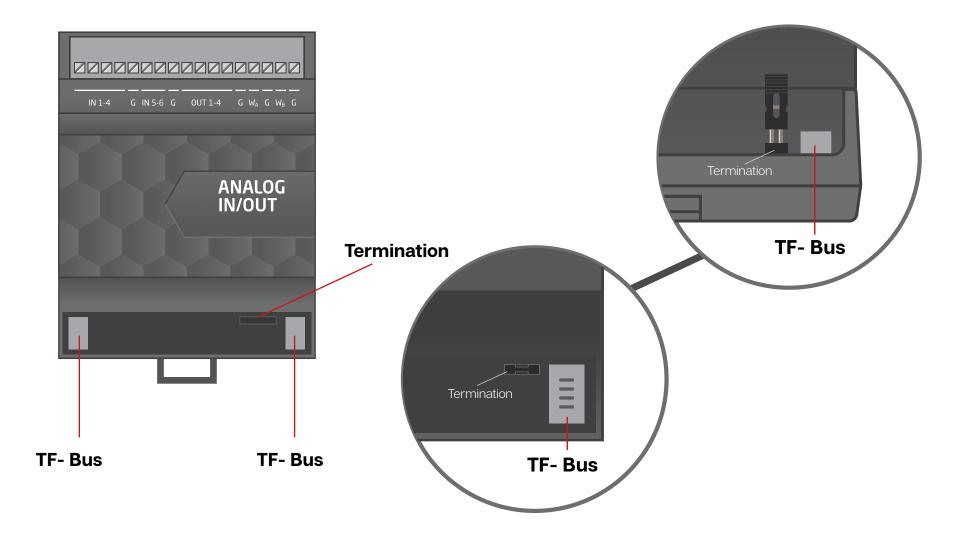




**GRENTON TF-Bus Cable** 

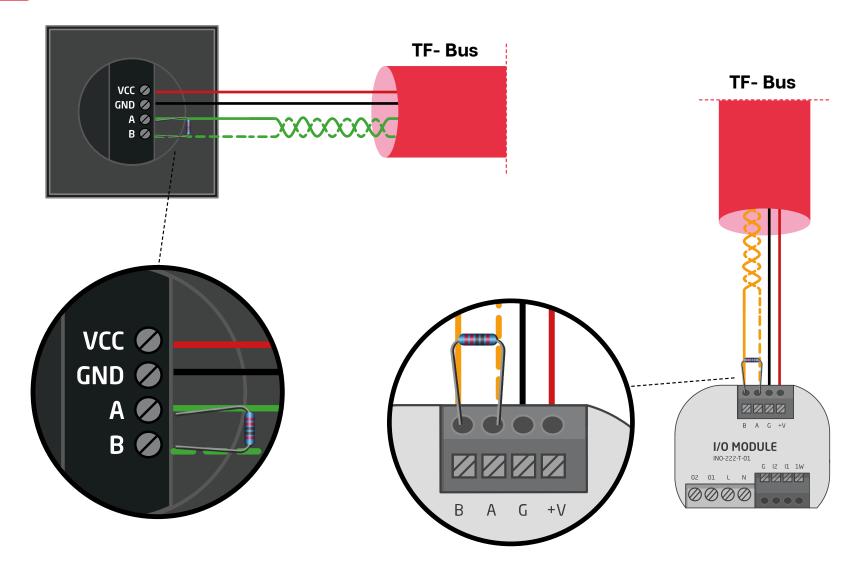


## Bus termination - DIN modules

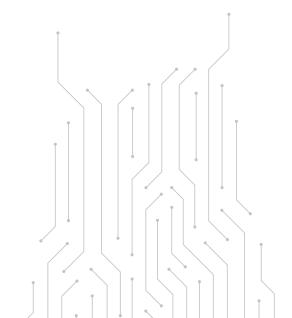


## **Termination** - touch panels and flush-mounted modules

**GRENTON TF-Bus Cable** 



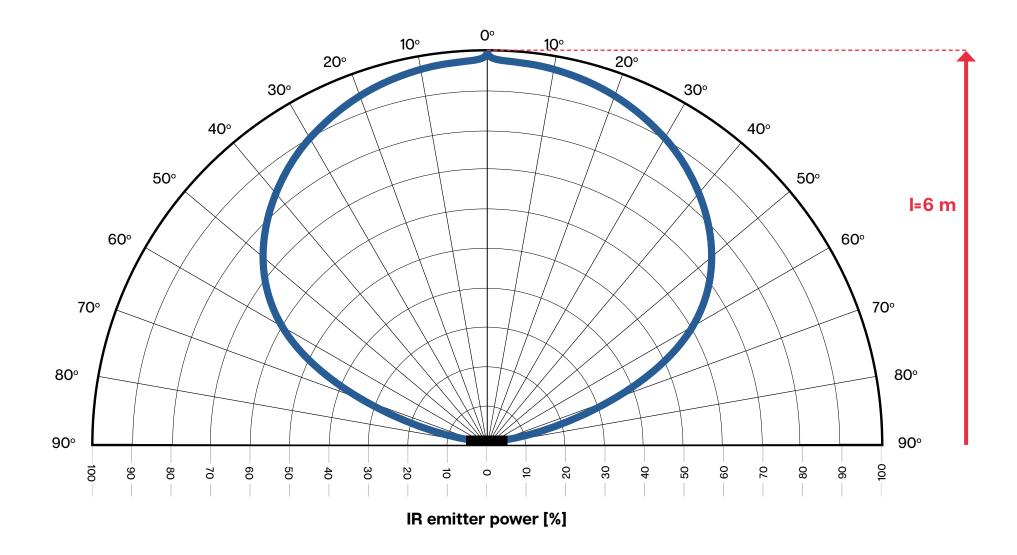
## **Multisensor**



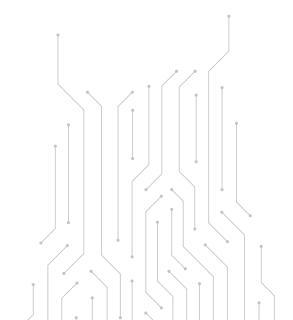
#### Multisensor Placement - reading of sensor measurements



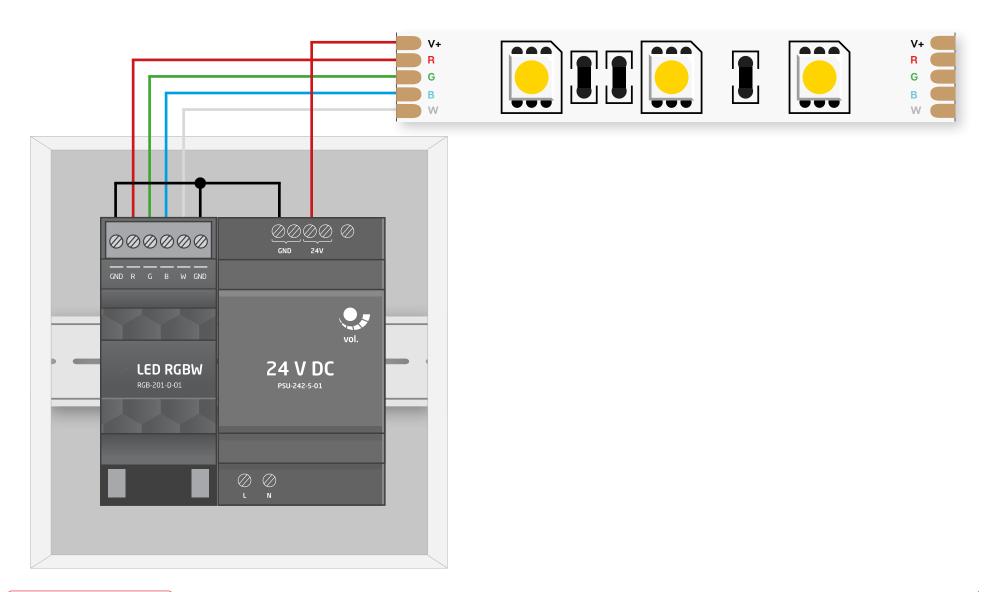
#### **Radiation characteristics of IR emitter and operation range**



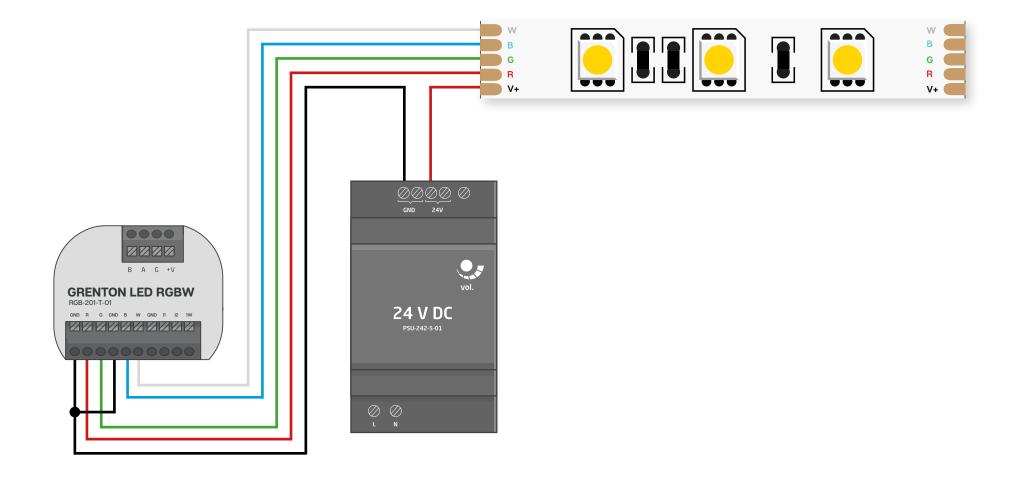
## **LED strips control**



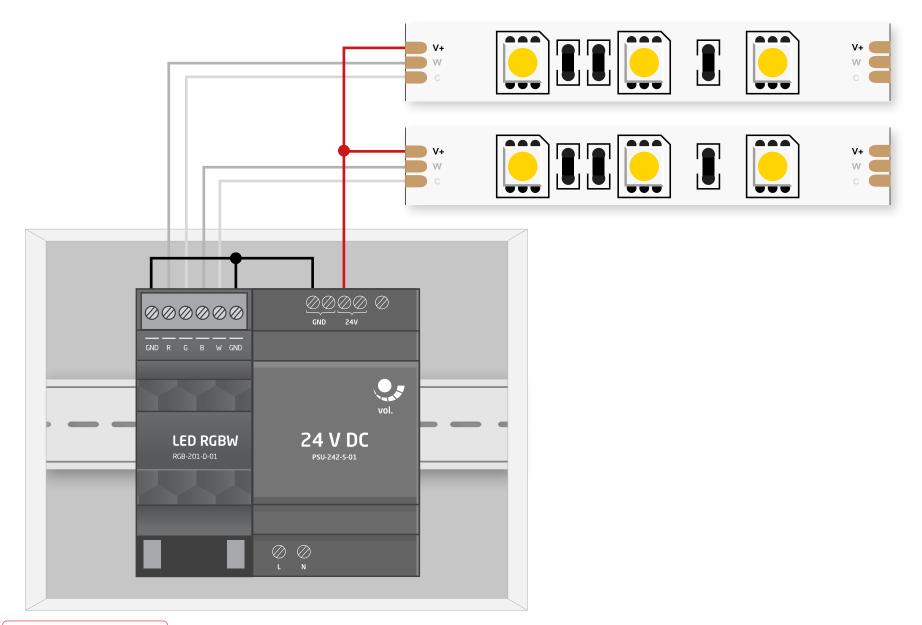
## **Wiring diagram - RGBW LED strips**



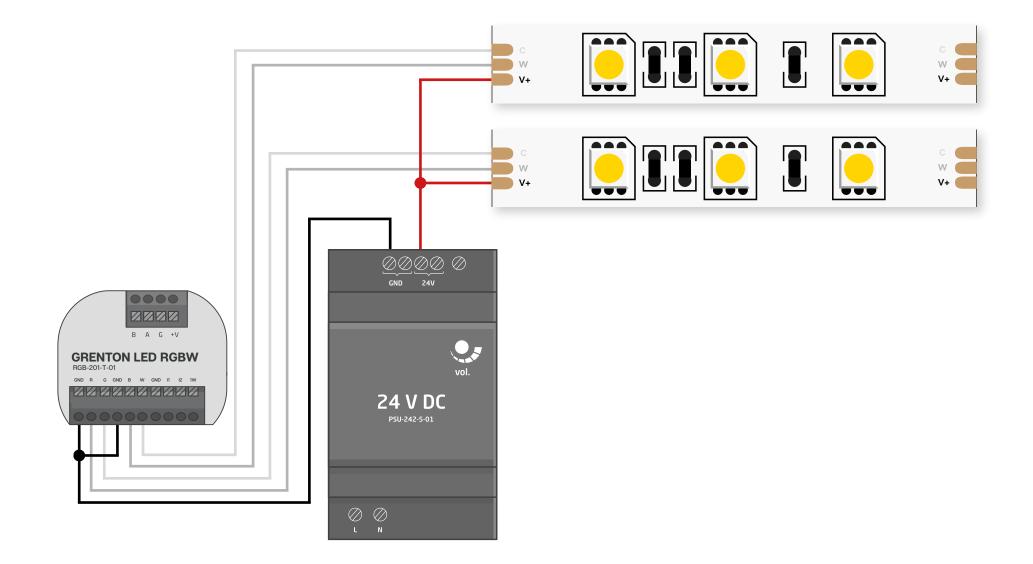
## **Wiring diagram - RGBW LED strips**



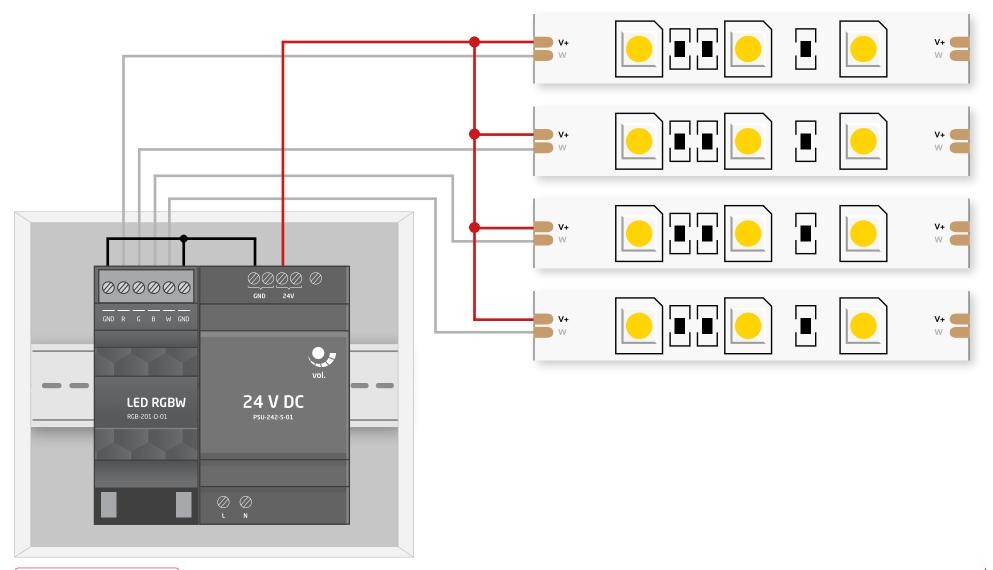
## **Wiring diagram - CTT LED strips**



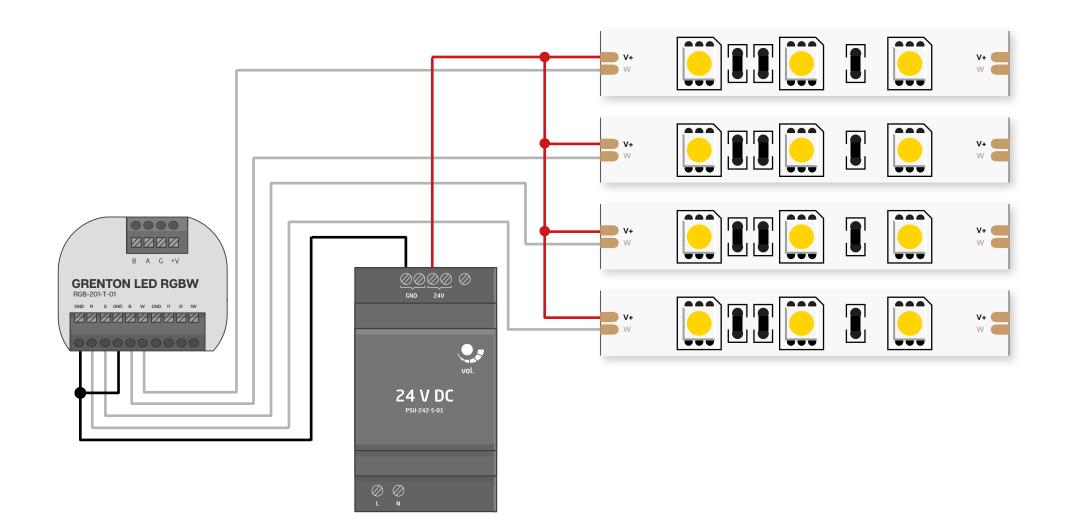
## **Wiring diagram - CTT LED strips**



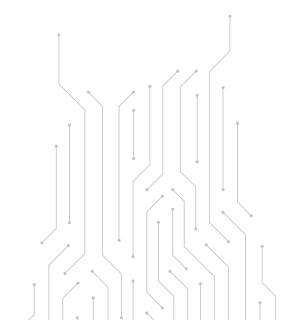
#### LED strips control Wiring diagram - W LED strips



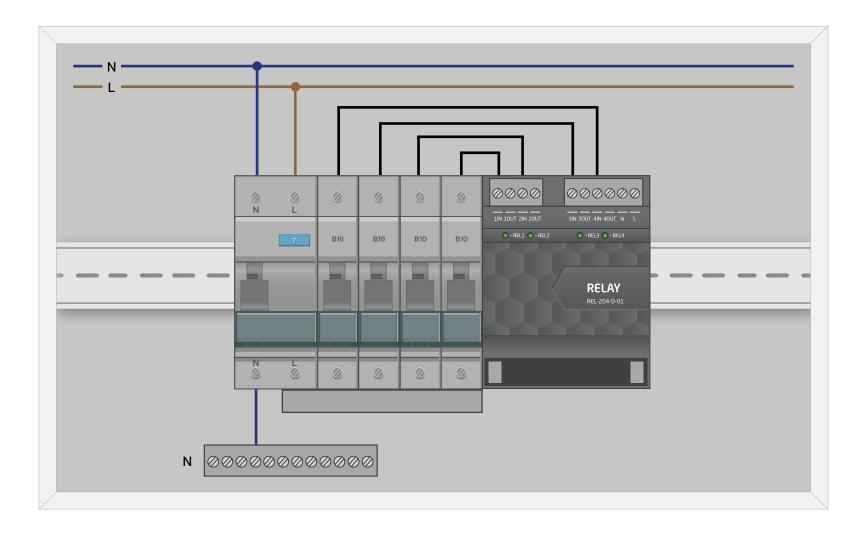
## **Wiring diagram - W LED strips**



## **Modules protection**

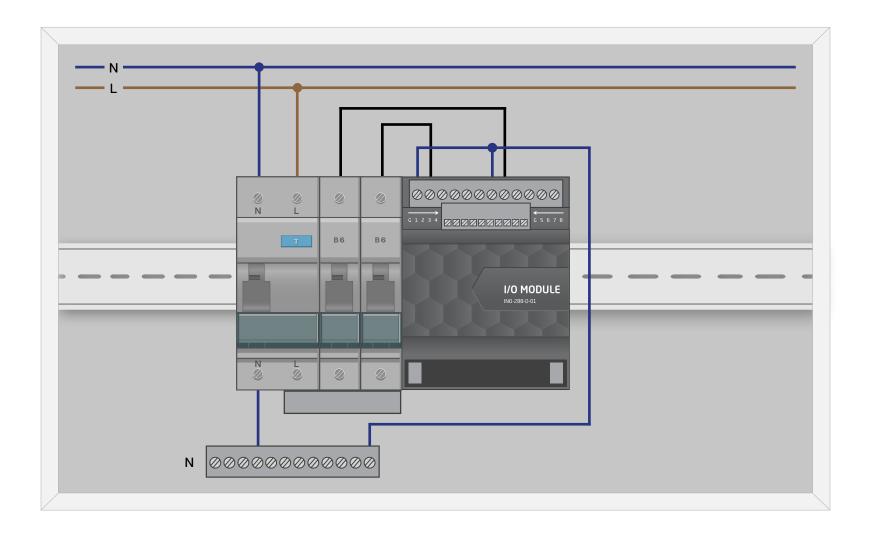


# **Residual current circuit breakers and overcurrent circuit breakers for Relay module**

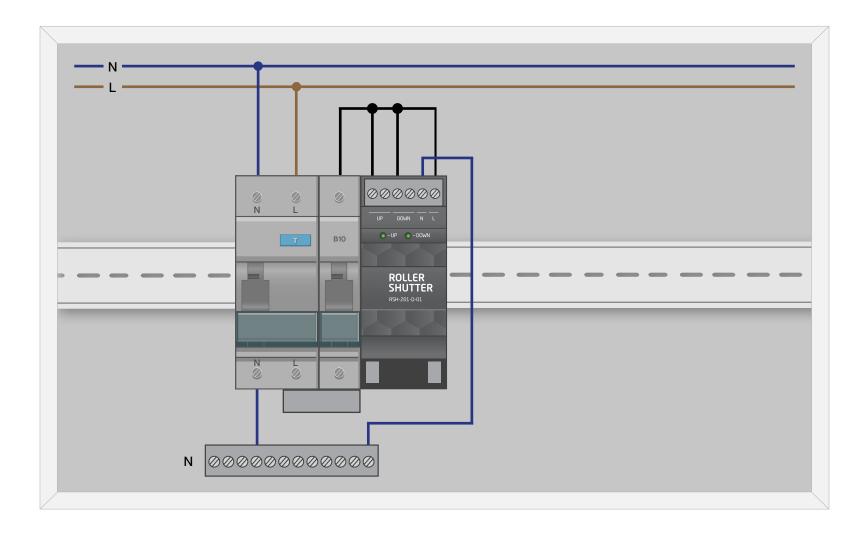


Modules protection

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



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



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

