REVEN
SCHAKO Group

Electrical interfaces

Wiring instructions

For LED lighting, REVEX®, RSC, UV hoods, REVEN® Protect, EFF hoods

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Introduction

To ensure that Rentschler REVEN GmbH products function properly, it is important to use different cable types for different lines when wiring.

This wiring guide explains the available connection options and which cable type should be used for the respective power or mains line.

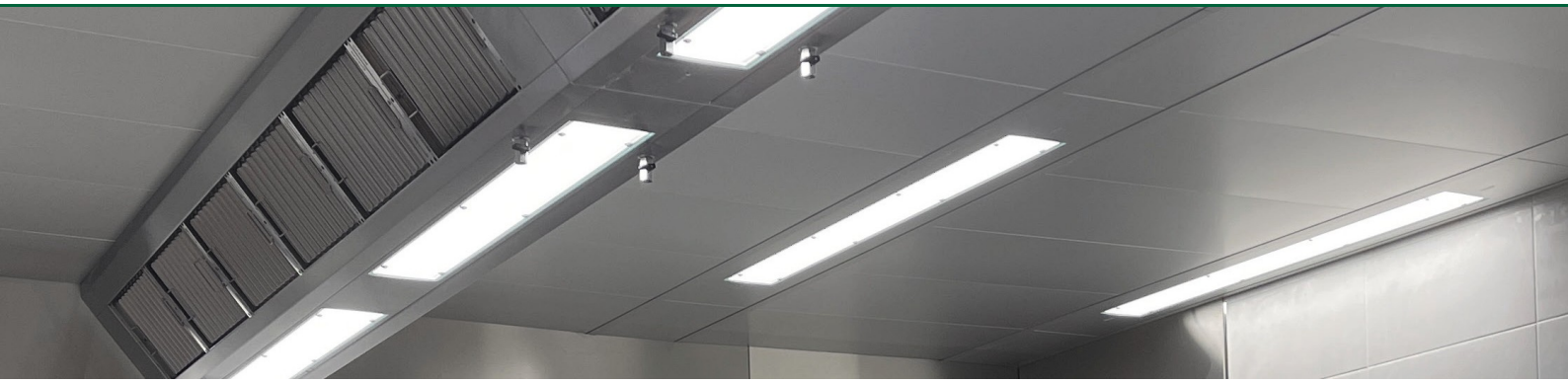
Rentschler REVEN GmbH is responsible for cabling from the on-site power supply to the control cabinet or power supply units, including the installation and connection of the various power, network and Meldeka cables within the exhaust air hoods and ventilation ceilings, including accessories, and ends, if necessary, at the connection to the building management system.

Please refer to the tables and example diagrams for information on which cable type to use for which purpose.

ATTENTION:

For certain cables, the specified cable length must not be exceeded!

LED lighting



Connection options

REVEN® LED lights can be individually integrated into numerous light management systems using optional extension components.

1. The simplest method is to operate them via a conventional 230 V light switch.
2. It is also possible to control the lights via lighting control systems such as DALI technology.

The LED light sources for the entire ventilation ceiling or the LED light sources for each work area are connected to the terminal boxes provided for this purpose (see Fig. 1).

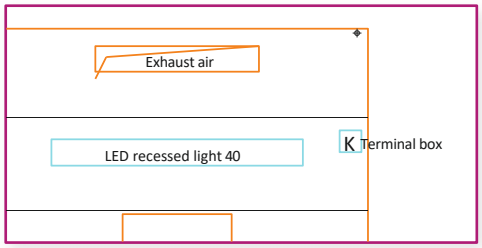


Fig. 1: Detail of a CAD drawing of a kitchen hood roof with terminal box marked.

Each terminal box is equipped with a 5-core cable. If the lighting is to be controlled via the DALI system, please use the two designated wires (black and grey) for this purpose (see Fig. 2).

Connection diagram

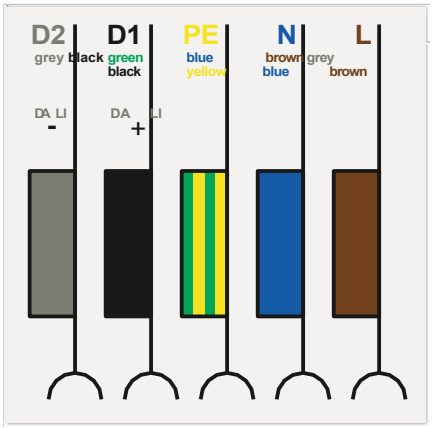
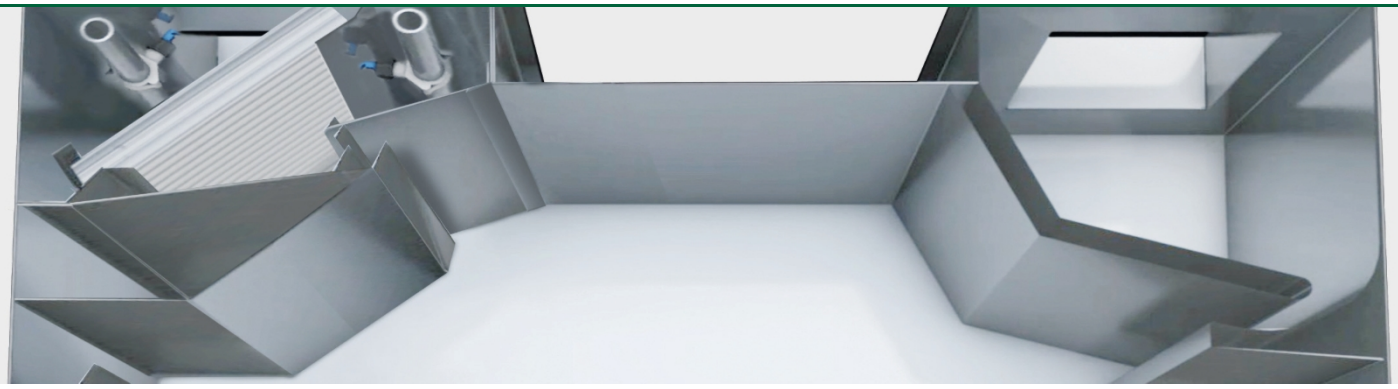


Fig. 2: Connection diagram of the terminal box for LED lighting

Assignment of cable type

	Cable			Cable type
1	Light switch	⟷	Terminal box *(per ceiling, hood or work area)*	NYM-J 5 x 1.5 mm²
2	Switch cabinet *(for DALI technology)*	⟷	Terminal box *(per ceiling, hood or work area)*	NYM-J 5 x 1.5 mm²

REVEX® system



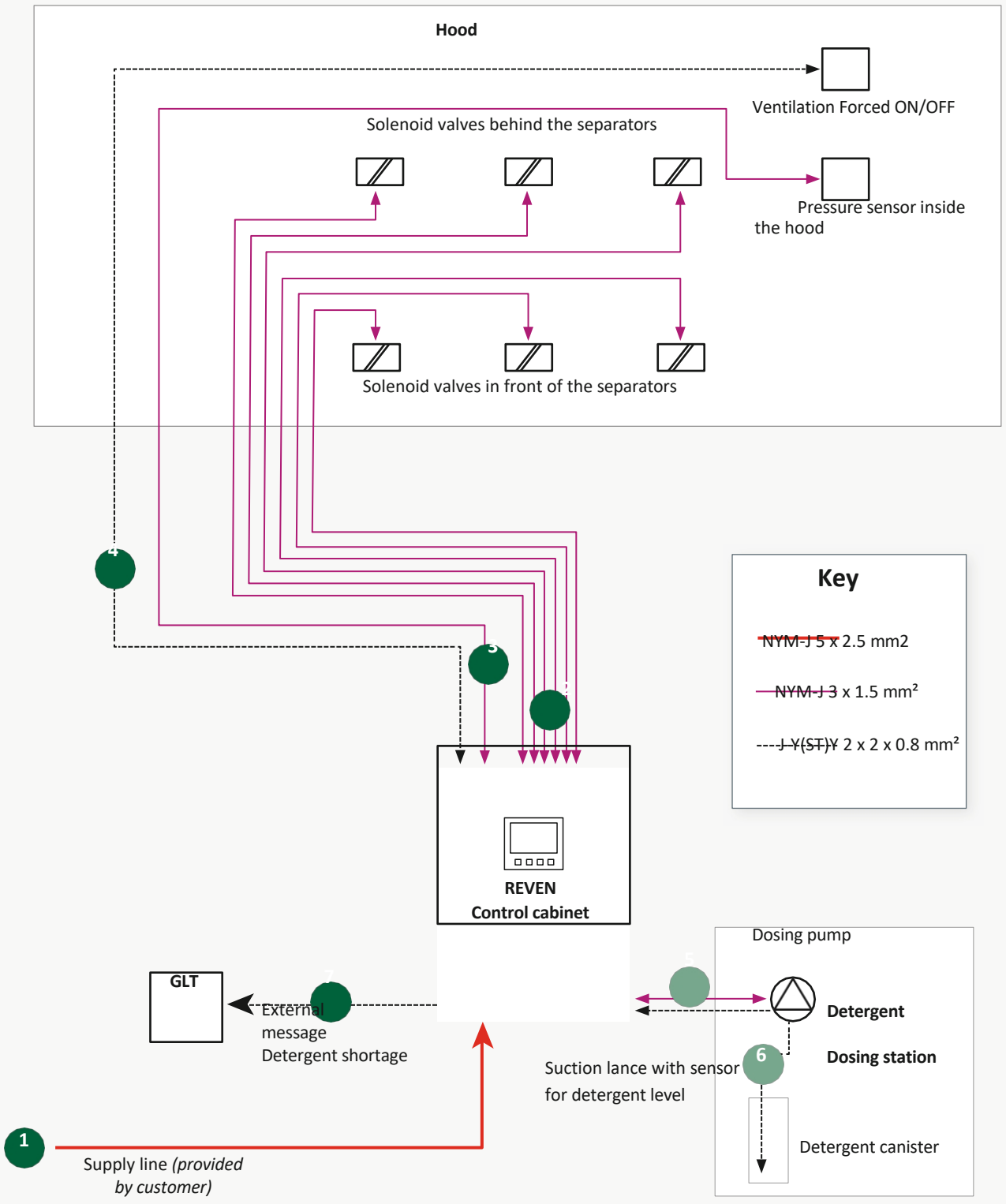
Cabling

REVEN kitchen hoods equipped with a REVEX® system (for programmed cleaning and disinfection infection) require precise execution of the complex cabling of the individual components.

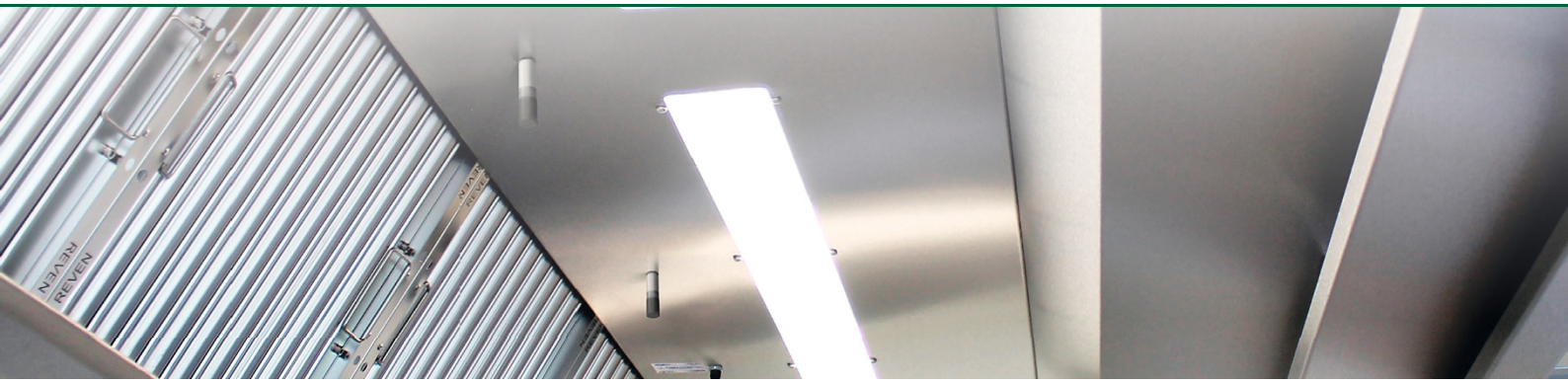
Assignment of cable types

	Cable			Cable type
1	Supply cable *(on site)*	⟷	Control cabinet	NYM-J 5 x 2.5 mm2
2	Control cabinet	⟷	per solenoid valve	NYM-J 3 x 1.5 mm²
3	Pressure monitoring *(control cabinet)*	⟷	Pressure sensor *(per cover)*	NYM-J 3 x 1.5 mm²
4	Ventilation control *(control cabinet)*	⟷	Ventilation (exhaust air) Forced ON/OFF *(hood)*	J-Y(ST)Y 2 x 2 x 0.8 mm²
5	Control *(control cabinet)*	⟷	Dosing pump *(if not next to control cabinet)*	NYM-J 3 x 1.5 mm²
6	Level monitoring *(control cabinet)*	⟷	Detergent sensor *(if not next to control cabinet)*	J-Y(ST)Y 2 x 2 x 0.8 mm²
7	Detergent shortage message *(control cabinet)*	⟷	GLT	J-Y(ST)Y 2 x 2 x 0.8 mm²

Example of a connection diagram for a REVEX® hood



RSC control



Star wiring

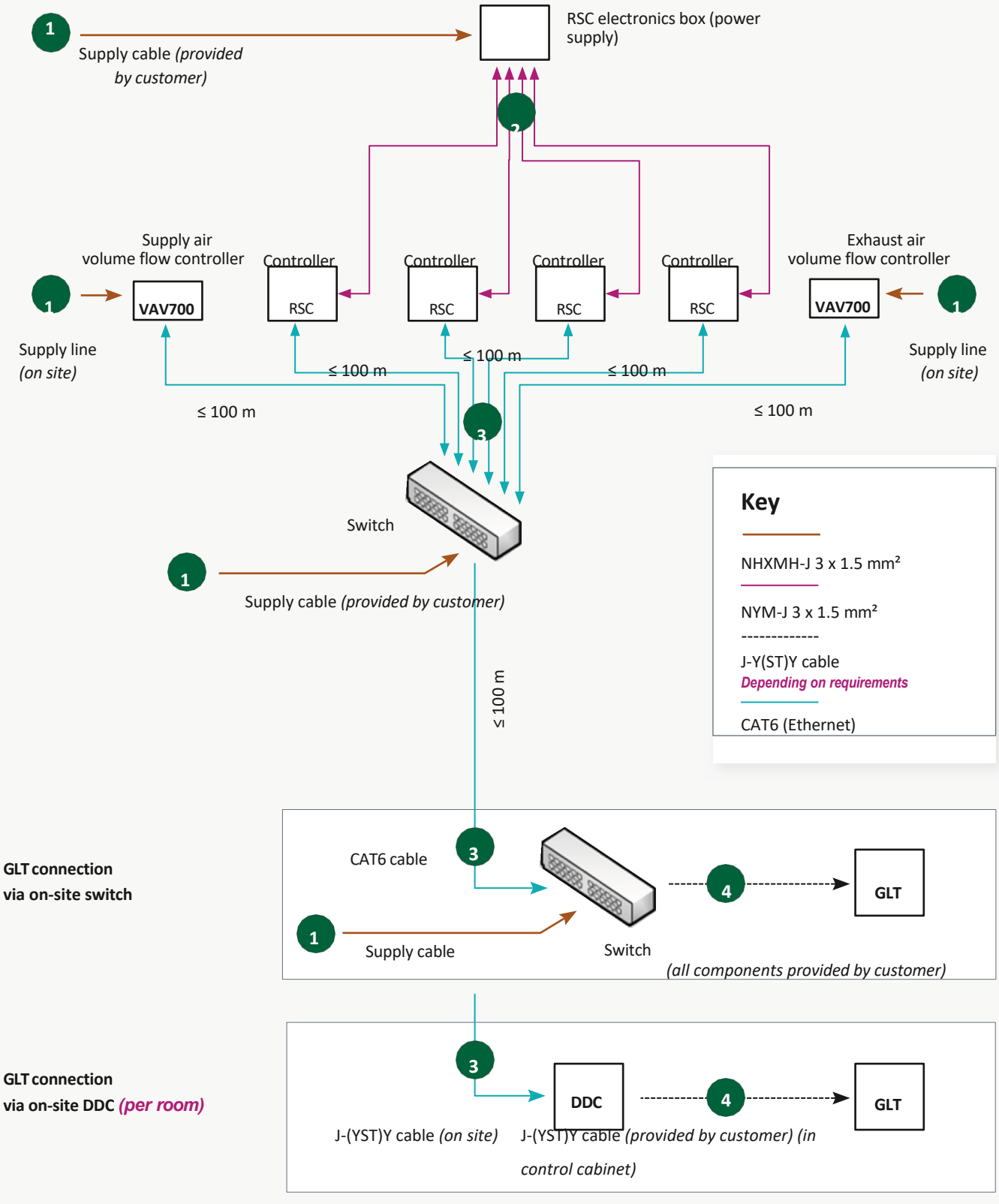
All devices (RSC electronics box/VAV700 supply air/exhaust air volume flow controllers) require a 230 VAC power supply, cable type NHXMH-J 3 x 1.5 mm² (halogen-free).
The RSC devices (controllers) and the associated supply air/exhaust air volume flow controllers are networked via a switch with CAT6 cables (standard Ethernet).

The connection to the building management system is made either via a switch provided by the customer with CAT6 cable or, room by room, via a DDC (Direct Digital Control) provided by the customer with J-(YST)Y cable. This substation of the building management system is usually housed in the control cabinet.

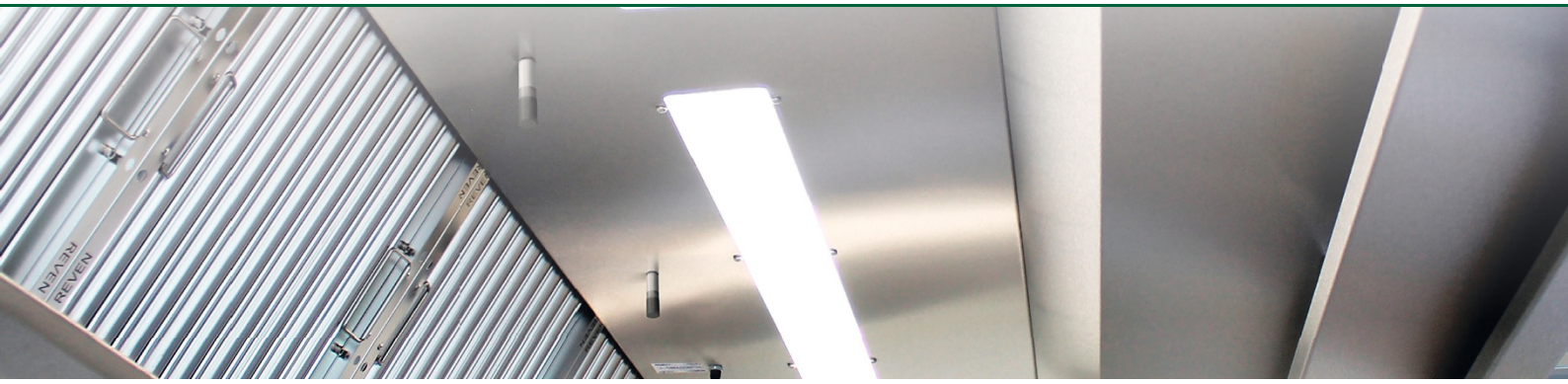
Assignment of cable types (star cabling)

Line				Cable type
1	Supply line *(on site)*	⟷	Power supply *(hood roof)*	NHXMH-J 3 x 1.5 mm2
	Supply cable *(on site)*	⟷	VAV700 Supply air/exhaust air *(usually on hood roof)*	NHXMH-J 3 x 1.5 mm2
	Supply line *(on site)*	⟷	Switch *(room and provided by customer)*	NHXMH-J 3 x 1.5 mm2
2	Power supply *(hood roof)*	⟷	Controller (RSC device with sensor) *(hood)*	NYM-J 3 x 1.5 mm2
3	Switch *(Room)*	⟷	Controller / VAV700 Supply air/exhaust air *(Hood)*	CAT6 (Ethernet) ***Max. length 100 m***
	Switch *(Room)*	⟷	Switch *(on site)*	CAT6 (Ethernet) ***Maximum length 100 m***
	Switch *(room)*	⟷	DDC *(control cabinet)*	CAT6 (Ethernet) ***Maximum length 100 m***
4	Switch *(on site)*	⟷	GLT *(on site)*	J-Y(ST)Y cable ***Depending on requirements***
	DDC *(control cabinet)*	⟷	GLT *(on site)*	J-Y(ST)Y cable ***Depending on requirements***

Example 1: Star cabling



RSC control



Daisy chain connection

All devices (power supply unit/VAV700 supply air/exhaust air volume flow controller) require a 230 VAC power supply, cable type NHXMH-J 3 x 1.5 mm² (halogen-free).
The RSC devices and the associated supply air volume flow controllers are networked with each other using CAT6 cables (standard Ethernet) ***with a maximum cable length of 100 metres each***.

The connection to the building management system is made using a J-(YST)Y cable directly via a selected VAV700, the so-called master.

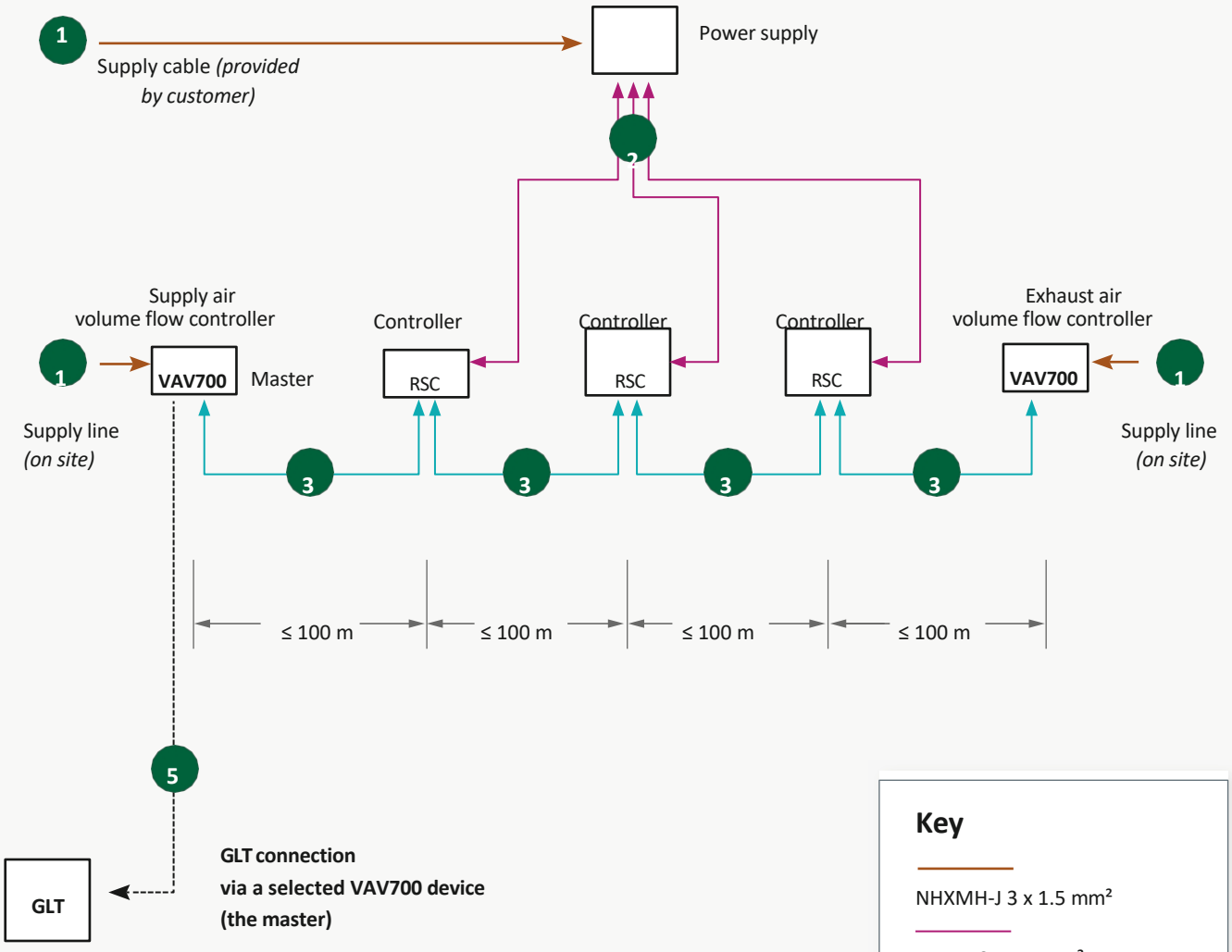
When networking using the daisy chain method, the chains should be limited to one balance group (room) each. ***The maximum number of participants is 32 and must not be exceeded.***

Assignment of cable types (daisy chain connection)

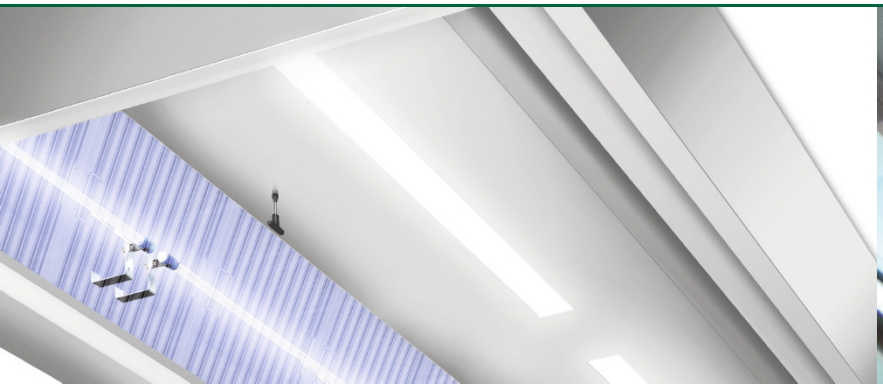
	Line			Cable type
1	Supply cable *(on site)*	⟷	Power supply *(usually on hood roof)*	NHXMH-J 3 x 1.5 mm2
	Supply cable *(provided by customer)*	⟷	VAV700 Supply air/exhaust air *(hood)*	NHXMH-J 3 x 1.5 mm2
2	Power supply *(usually on hood roof)*	⟷	Controller (RSC device with sensor) *(hood)*	NYM-J 3 x 1.5 mm2
3	Controller *(hood)*	⟷	Controller / VAV700 Supply air/exhaust air *(Hoods)*	CAT6 (Ethernet) ***Cable length max. 100 m***
5	Master VAV700 *(hood)*	⟷	GLT *(on site)*	J-Y(ST)Y cable ***Depending on requirements***

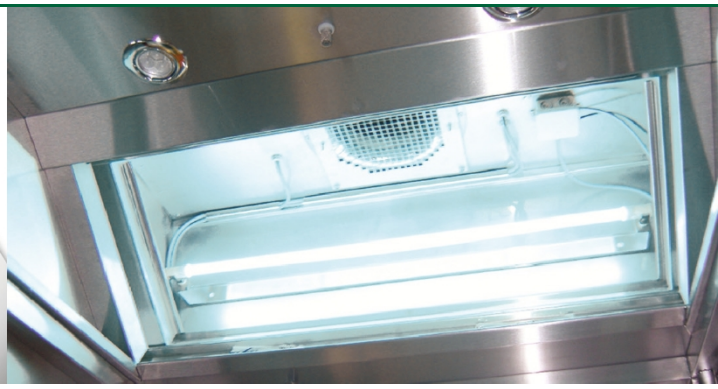
Note: Cables with the numbering 4 are omitted when cabling in a daisy chain configuration.

Example 2: Daisy chain cabling



Kitchen hoods with UV radiation





Connection option for a large control cabinet (standard)

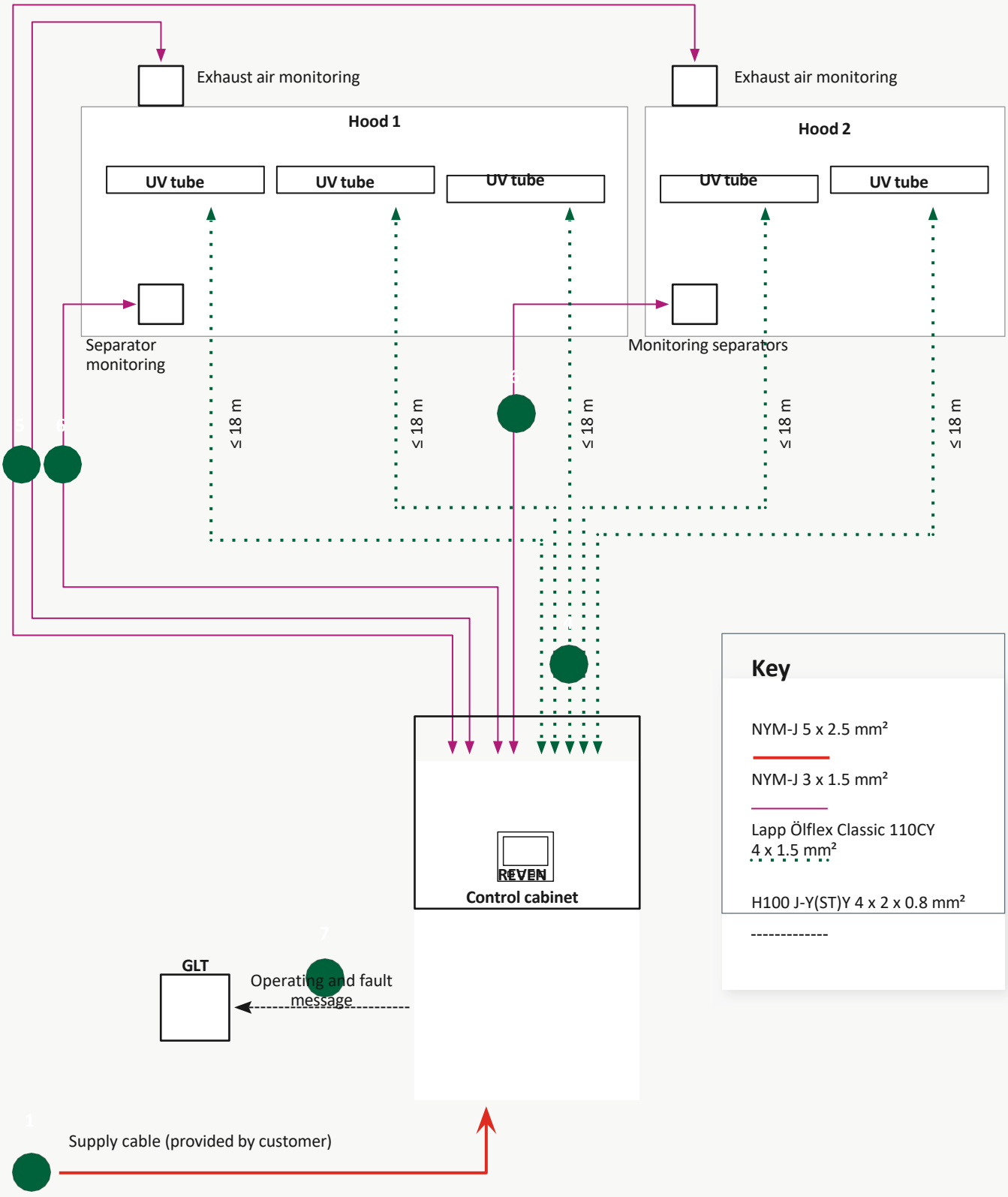
If the dimensions of the control cabinet are 120 x 80 x 30 cm, the ballasts for the UV tubes must be housed in the control cabinet. ***The maximum cable length of 18 m per UV tube must be observed.***

Assignment of cable types (control cabinet 120 x 80 x 30 cm)

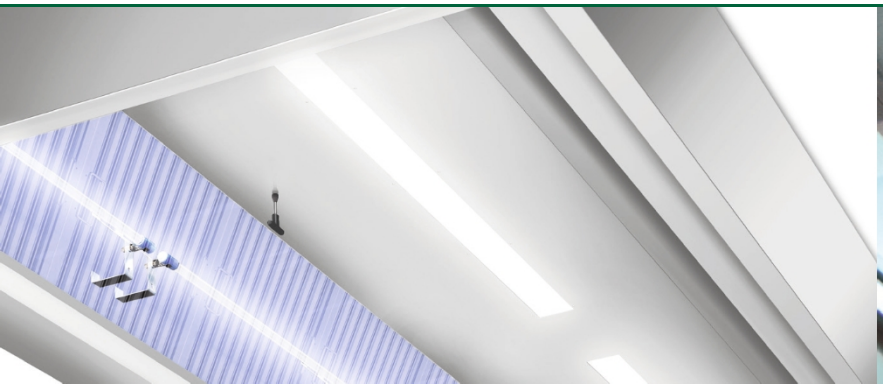
	Cable			Cable type
1	Supply line *(on site)*	⟷	Control cabinet	NYM-J 5 x 2.5 mm2
4	Ballast *(control cabinet)*	⟷	per UV tube	one Lapp Ölflex Classic 110CY 4 x 1.5 mm2 (shielded without protective conductor) ***Max. length 18 m***
5	Safety shutdown *(control cabinet)*	⟷	Exhaust air monitoring *(per hood)*	NYM-J 3 x 1.5 mm²
6	Safety shutdown *(control cabinet)*	⟷	Separator monitoring *(per hood)*	NYM-J 3 x 1.5 mm²
7	Operating and fault message *(control cabinet)*	⟷	GLT *(on site)*	J-Y(ST)Y 4 x 2 x 0.8 mm²

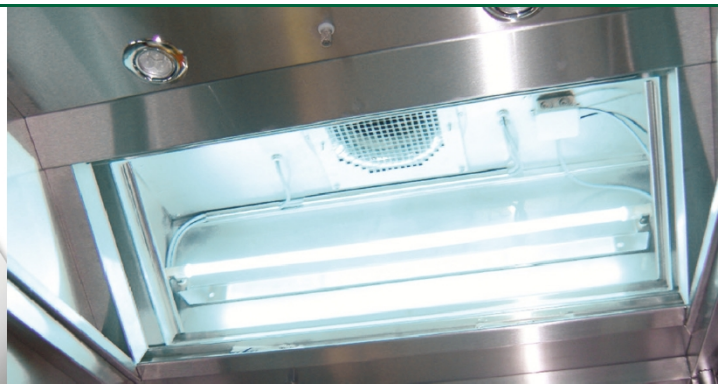
Note: Cables numbered 2 and 3 are only used when a control cabinet measuring 60 x 60 x 30 cm is used (see page 12) and are not required for standard cabling.

Standard: Connection example for UV tubes via the REVEN control cabinet



Kitchen hoods with UV radiation





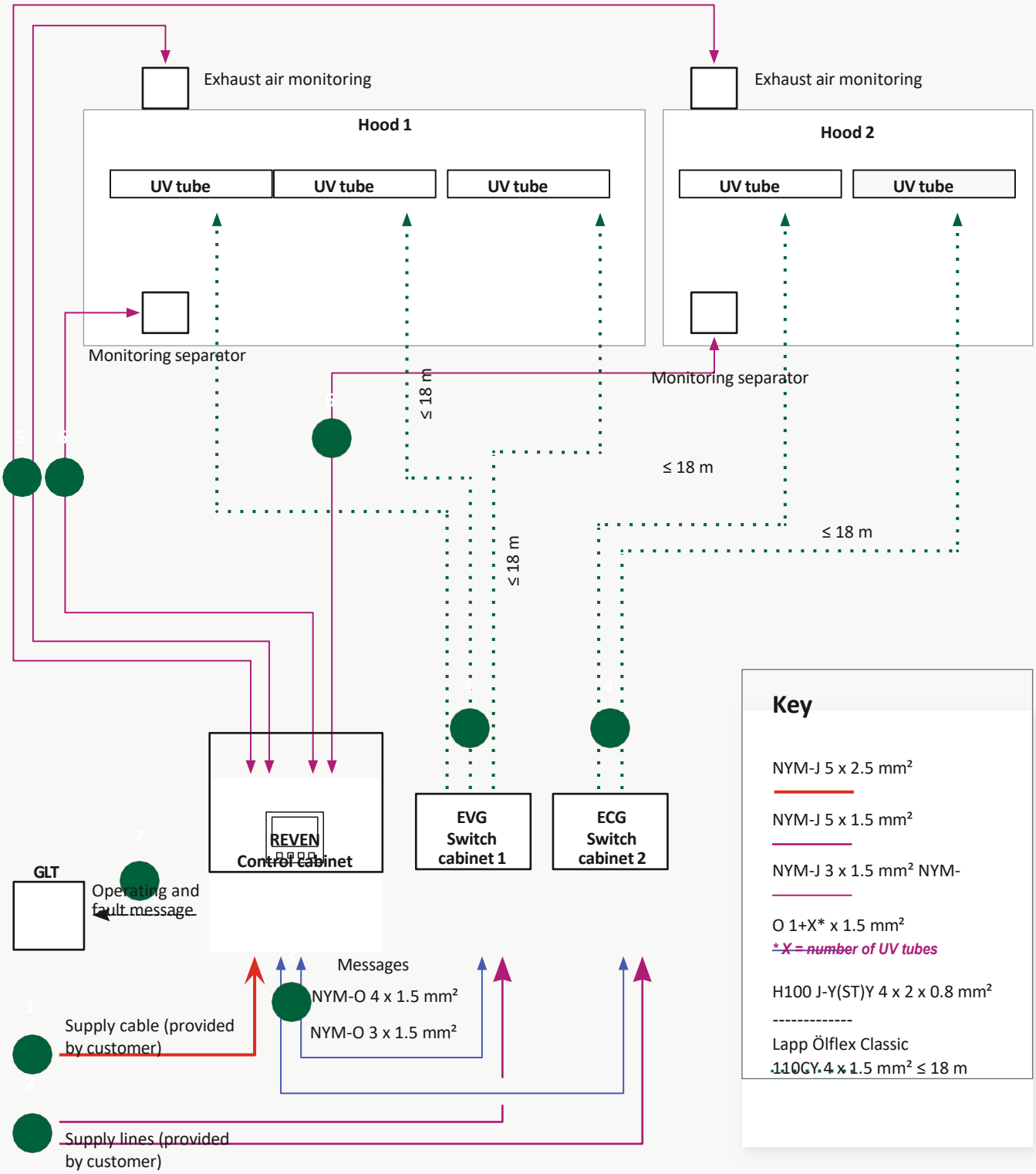
Connection option with ECG control cabinets (special case)

If the dimensions of the control cabinet are 60 x 60 x 30 cm, one ECG control cabinet must be installed for each UV hood, in which the ballasts for the UV tubes are housed. ***The maximum cable length of 18 m per UV tube must be observed.***

Assignment of cable types (control cabinet 60 x 60 x 30 cm)

	Cable			Cable type
1	Supply cable *(provided by customer)*	⟷	Control cabinet	NYM-J 5 x 2.5 mm2
2	Supply cable *(control cabinet)*	⟷	per ECG control cabinet	NYM-J 5 x 1.5 mm2
3	Messages *(control cabinet)*	⟷	per EVG switch cabinet *(per hood)*	NYM-O 1 ***+ number of UV tubes*** x 1.5 mm2
4	Ballast *(ECG control cabinet)*	⟷	per UV tube *(per hood)*	One Lapp Ölflex Classic 110CY 4 x 1.5 mm² cable (shielded without protective conductor) ***Max. length 18 m***
5	Safety switch *(control cabinet)*	⟷	Exhaust air monitoring *(per hood)*	NYM-J 3 x 1.5 mm²
6	Safety shutdown *(control cabinet)*	⟷	Separator monitoring *(per hood)*	NYM-J 3 x 1.5 mm²
7	Operating and fault message *(control cabinet)*	⟷	GLT *(on site)*	J-Y(ST)Y 4 x 2 x 0.8 mm²

Special case: Connection example for UV tubes via ECG control cabinets



REVEN® Protect fire extinguishing system

Basic

The entire REVEN® Protect fire extinguishing system operates purely mechanically/pneumatically with pressure switches and does not require a power supply on site.

Each pressure switch has two potential-free contacts (normally closed and normally open contacts) to force the device and ventilation to shut down in the event of a trigger with the message "Power OFF" and "Ventilation OFF".

Normally, a NYM-J 3 x 1.5 mm² connection cable is provided on site for this purpose. However, the electrician decides how the shutdowns and/or a message to the fire alarm control panel are to be implemented in detail. Rentschler REVEN GmbH provides up to three pressure switches if required.

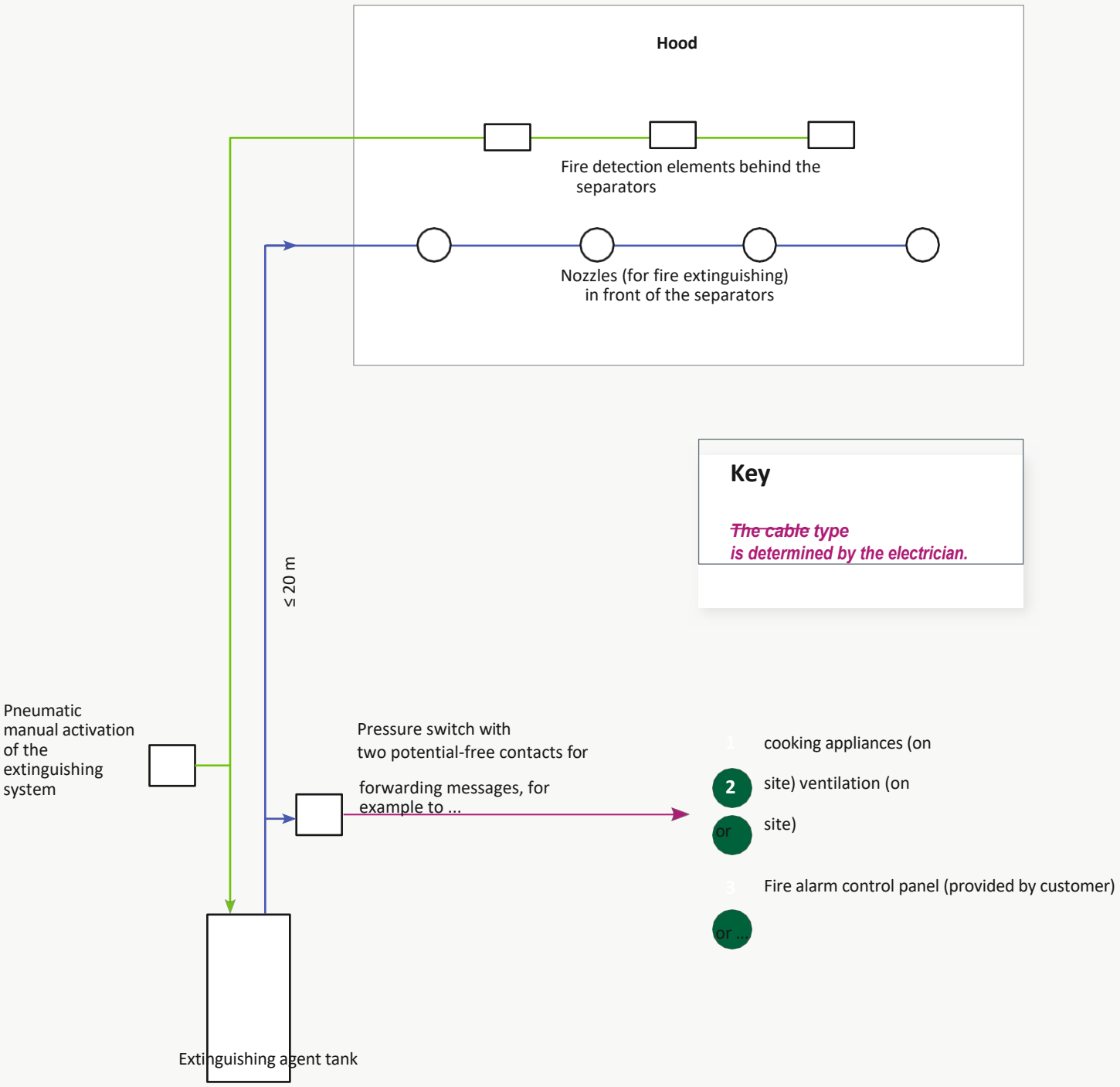
Assignment of cable type

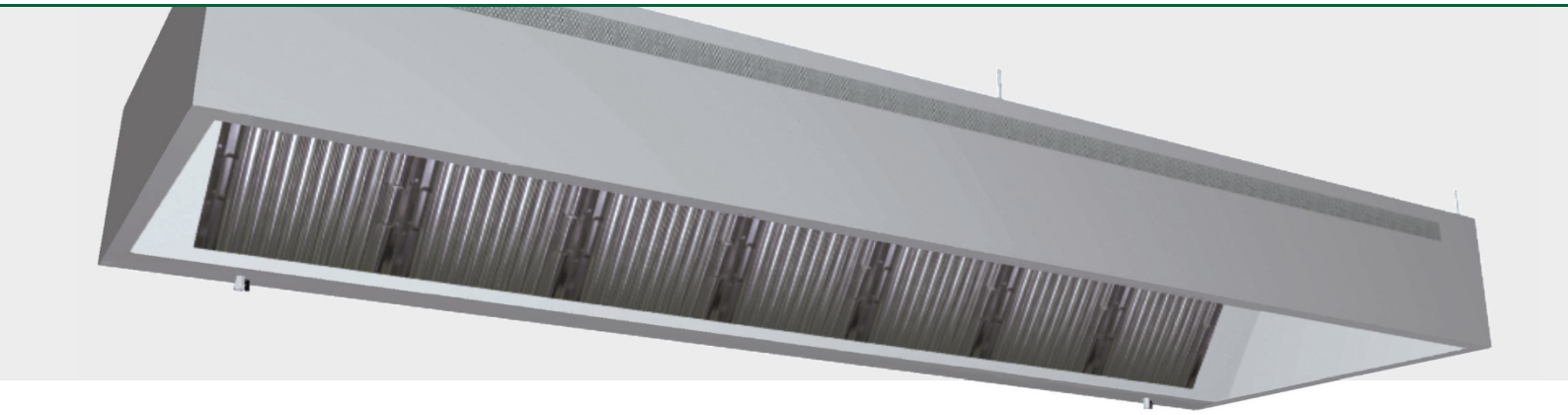
	Cable		Cable type
1	Cooking appliances Automatic power cut-off *(pressure switch)*	⟷ Cooking appliances Power supply *(provided by customer)*	***The cable type is determined by the electrician***
2	Ventilation forced OFF *(pressure switch)*	⟷ Ventilation forced OFF *(on site)*	***The cable type is determined by the electrician***
3	Fire alarm *(pressure switch)*	⟷ Fire alarm control panel *(on site)*	***The cable type is determined by the electrician.***

ATTENTION:

Before starting installation of the REVEN® Protect fire extinguishing system, the "Pre-installation work" form must be available, on which the customer has confirmed with their signature that the pre-installation work specified by Rentschler REVEN GmbH has been carried out.

Example of a connection diagram for the REVEN® Protect fire extinguishing system





Cabling

EFF hoods from REVEN are equipped with a REVEN® efficiency induction system. The required supply air flow is generated by built-in fans.

The supply air fans are controlled in conjunction with the exhaust air fan (provided by the customer) using a NYM-J 3 x 1.5 mm² cable. This is connected to the hood roof to the terminal box labelled "VE". The terminal box without labelling is intended for the LED lighting (see page 3).

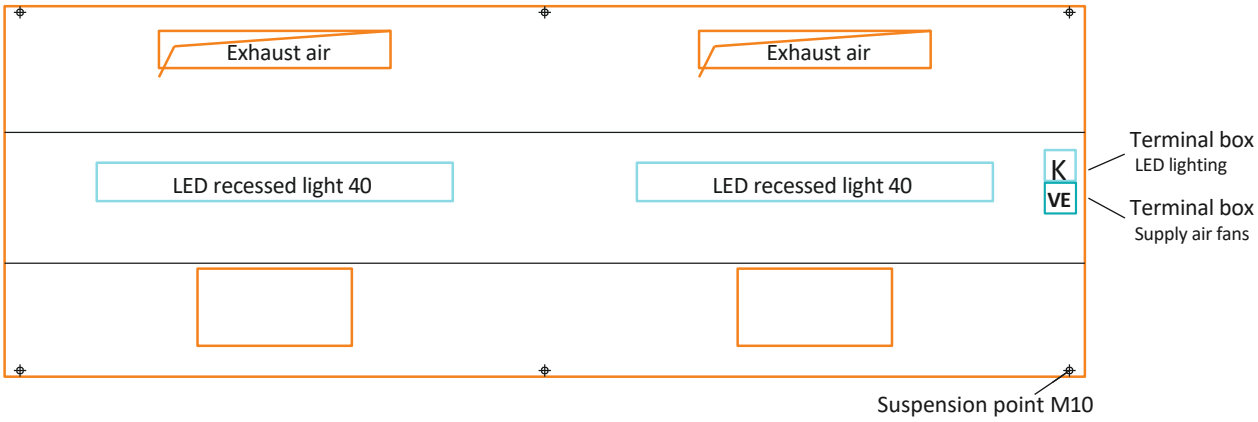


Fig.: CAD drawing of the hood roof of an EFF hood

Assignment of cable types

Cable			Cable type
Exhaust fan control (on site)	⟷	Terminal box "VE" for supply air fan *(hood roof)*	NYM-J 3 x 1.5 mm²