28.07.2026

KaControl MC

Cable routing plan

System: System Controller

Genau
mein
Klima.

KAMPMANN

The following information on cable types and cable routing must be observed in compliance with VDE 0100 / IEC60364. Otherwise, correct functioning cannot be guaranteed and warranty claims may become invalid as a result.

The installation, operation and maintenance of this equipment must comply with the laws, standards, regulations and directives applicable in each country.

After completion of the installation, a functional test can be carried out by Kampmann customer service for a fee. This can be requested from the service center in Lingen by phone 0591/7108-670 or by email service@kampmann.de.

*): Shielded cable, IY(ST)Y 0.8mm or at least equivalent. Lay separately from power lines.

**): Shielded cable stranded in pairs, e.g. UNITRONIC® BUS LD 2x2x0.22 or equivalent. Lay separately from power lines.

All other connections can be made in NYM-J (or equivalent).
Cable cross-sections of unshielded cables are not specified, as the cable length is included in the cross-section calculation.
Indication of the number of cores incl. protective conductor.

Protect cables installed outdoors against the weather or use equivalent weather-resistant cables.

All installation locations or positions of the switching devices must be coordinated with the construction management.

Install the room temperature sensors in the appropriate temperature zone and not in the vicinity of radiators, heat-radiating lights, opening windows or doors.

Residual current devices must comply with at least Type F as specified in IEC/EN 62423. The rated residual current must be selected in accordance with IEC 60364-4-41 and -5-53 or the relevant national standards (e.g., DIN VDE 0100-410 and -530).

Lines for data or bus signals are shown with the shield connected at one end. Lines for analog signals are shown with the shield not connected. Due to structural or local conditions and depending on the type and level of interference, which can be caused by magnetic and/or electric fields in high and/or low frequency ranges, among other things, a different connection of the shield (connected at both ends or not connected) may be necessary. This must be checked by the customer and, if necessary, carried out differently from the specifications in the documentation!

Cable length for analog input and output signals: max. 30m.

Cable length CANbus network within a secondary air group max. 100m in total.
Switch on 120Ω terminating resistors at both ends of the bus

Ethernet cable length: max. 100m from device to device and/or to switch.

KaControl MC allows you to adjust the baud rate as needed. The baud rate is factory-set to 19200. Connect a 120Ω terminating resistor to both ends of the bus. The following cable lengths are recommended for the corresponding baud rates.

Baud rate	2400	4800	9600	19200	38400	57600
Max. cable length	1200m	1000m	500m	250m	125m	80m
'quieter' area	≤1000m	≤750m	≤400m	≤200m	≤100m	≤60-70m

Any unit fitted with a KaControl MC1 or MC2 control system can be integrated into the building automation system via one of the following interfaces.

KNX BACnet Modbus

System controllers (KaControl MC3 control system) can be integrated into the building automation system using BACnet IP, Modbus TCP or Modbus RTU.

An interface license can be activated either at the factory or after delivery by manually entering the license information. For more information about the interfaces, please visit our website at www.kampmanngroup.com and refer to the relevant license section.

In the case of ventilation units supplied in several parts and fitted with a factory-installed control unit, any cables leading to the field devices may have been disconnected from the control unit and retracted into the relevant enclosure. These cables must be routed back to the control unit and reconnected on site in accordance with the diagram.

Pictures exemplary. Actual appearance may vary.

Webserver

Modbus

ASHRAE BACnet®

Modbus : Modbus TCP license required

BACnet : BACnet IP license required

Ethernet

TP5 -Option-

CAN-Bus

System Controller

hardwired

Heat pump / chiller

Hydraulic box

Air Handling Unit

Outside temperature sensor

Ethernet (Modbus TCP)

Up to 25 groups

Group 1

CAN-Bus

TP2 -Option-

KaControl MC1/MC2 device 1 Modbus

KaControl MC1/MC2 device 2 Modbus

KaControl MC1/MC2 device 3 Modbus

CAN-Bus

Up to 10 groups

Group 2

KaControl MC1/MC2 device 1 Modbus

KaControl MC1/MC2 device 2 Modbus

KaControl MC1/MC2 device 3 Modbus

CAN-Bus

Up to 10 groups

Group 3

KaControl MC1/MC2 device 1 Modbus

KaControl MC1/MC2 device 2 Modbus

KaControl MC1/MC2 device 3 Modbus

CAN-Bus

Up to 10 groups

Group 4

CAN-Bus

TP2 -Option-

KaControl MC1/MC2 device 1 Modbus

KaControl MC1/MC2 device 2 Modbus

KaControl MC1/MC2 device 3 Modbus

CAN-Bus

Up to 10 groups

Group 5

KaControl MC1/MC2 device 1 Modbus

KaControl MC1/MC2 device 2 Modbus

KaControl MC1/MC2 device 3 Modbus

CAN-Bus

Up to 10 groups

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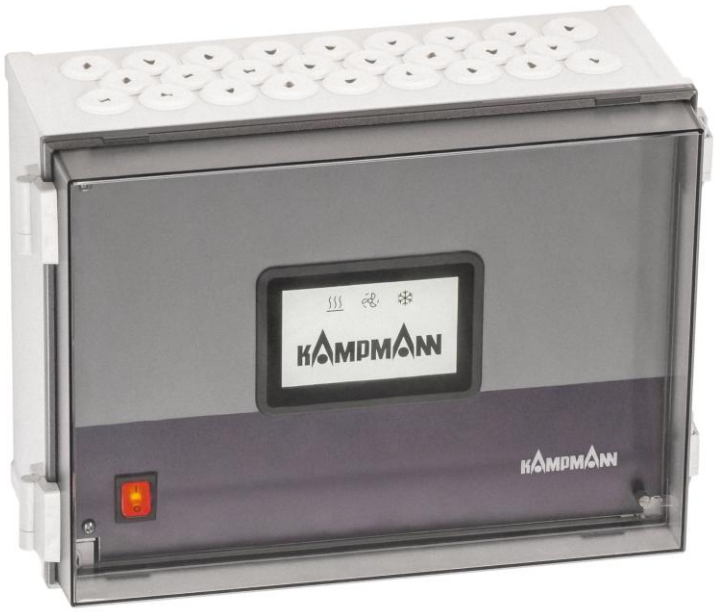
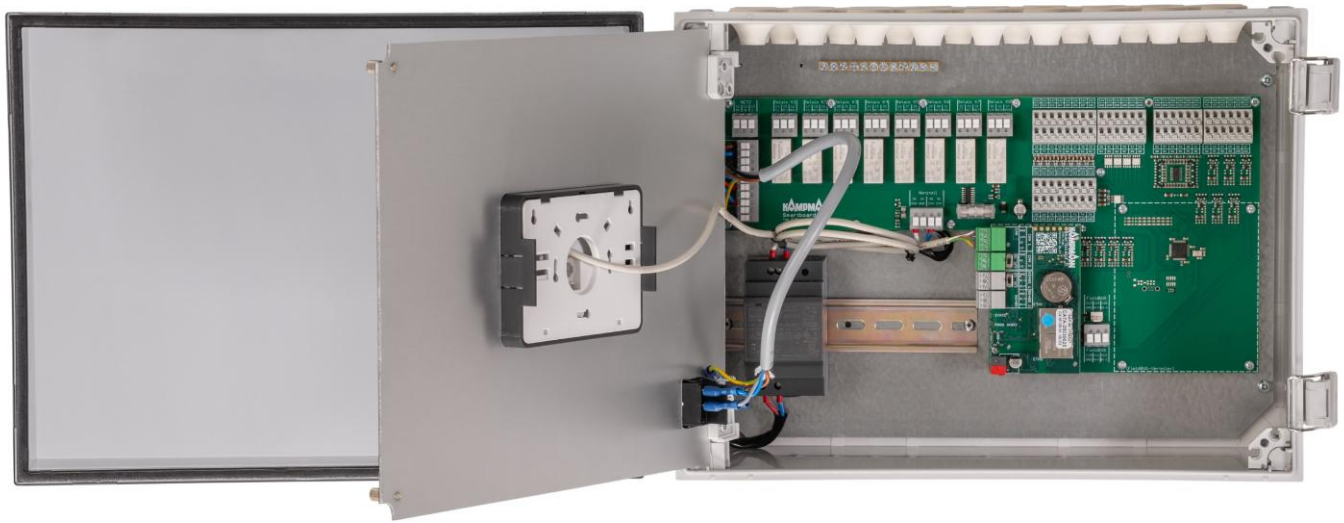
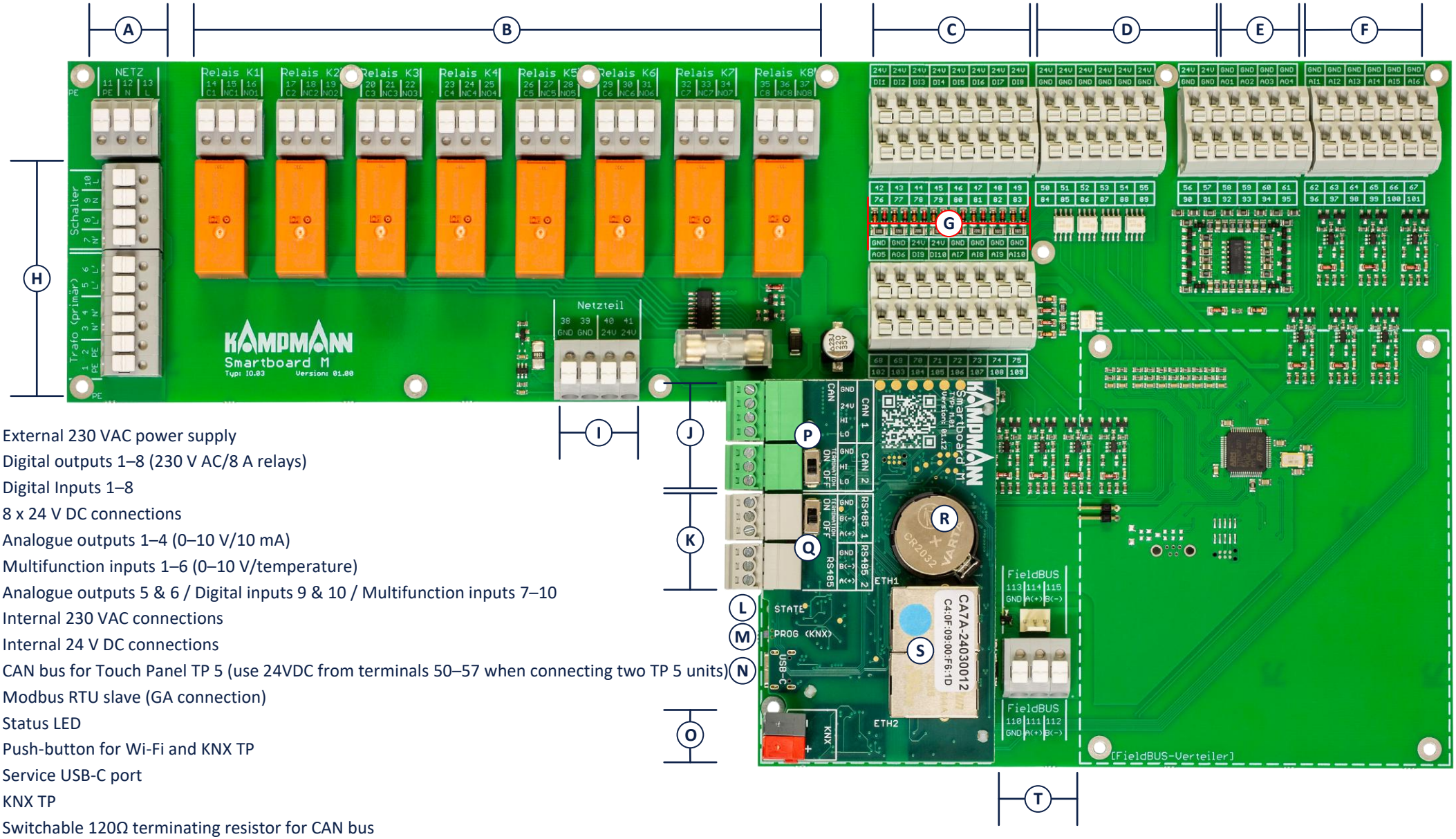
System controller dimensions: W x H x D: 430 x 300 x 180 mm

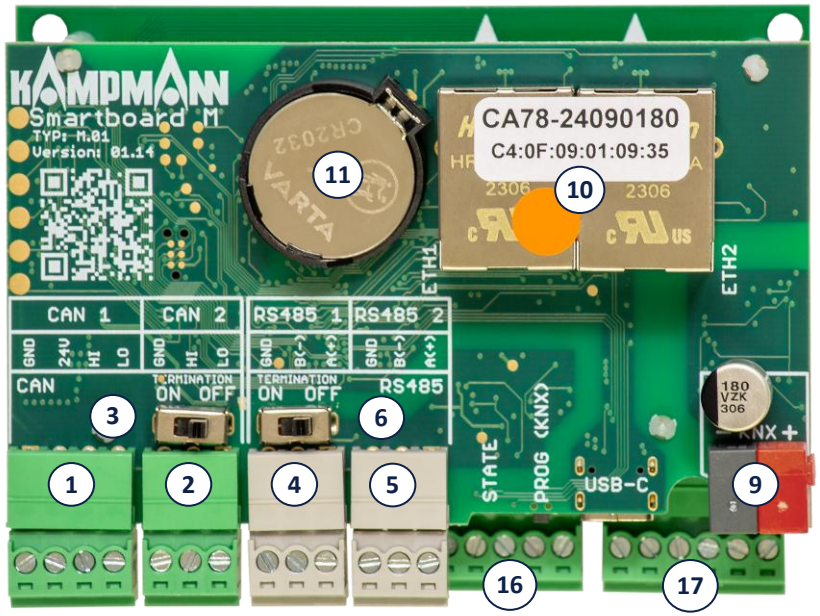
Alternatively, the system controller can also be purchased in combination with a air handling unit. In such cases, the system controller is integrated into the control cabinet or electrical connection box of the respective unit.







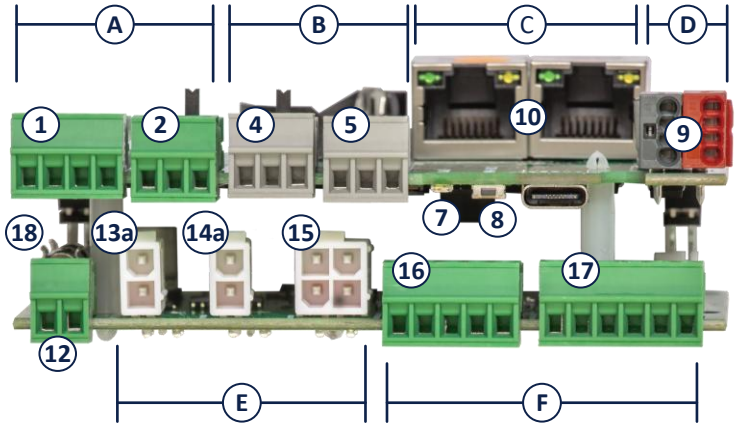
- (A) External 230 VAC power supply
- (B) Digital outputs 1–8 (230 V AC/8 A relays)
- (C) Digital Inputs 1–8
- (D) 8 x 24 V DC connections
- (E) Analogue outputs 1–4 (0–10 V/10 mA)
- (F) Multifunction inputs 1–6 (0–10 V/temperature)
- (G) Analogue outputs 5 & 6 / Digital inputs 9 & 10 / Multifunction inputs 7–10
- (H) Internal 230 VAC connections
- (I) Internal 24 V DC connections
- (J) CAN bus for Touch Panel TP 5 (use 24VDC from terminals 50–57 when connecting two TP 5 units)
- (K) Modbus RTU slave (GA connection)
- (L) Status LED
- (M) Push-button for Wi-Fi and KNX TP
- (N) Service USB-C port
- (O) KNX TP
- (P) Switchable 120Ω terminating resistor for CAN bus
- (Q) Switchable 120Ω terminating resistor for Modbus RTU
- (R) Battery (type CR2032)
- (S) Ethernet connection for the web server, Modbus TCP and BACnet IP with integrated switch
- (T) Modbus RTU Master (connection to secondary air units)



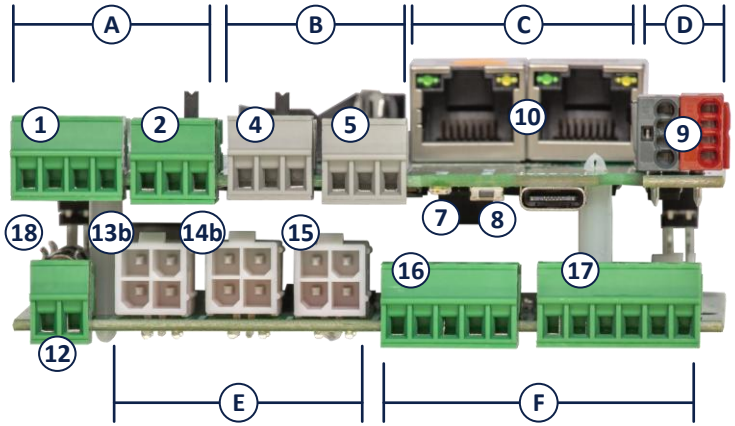
Top view of mainboard

1. Connection CAN bus 4-pin (Touch Panel TP 2) or 3-pin previous device
2. 3-pin CAN bus connection to the following device
3. Switchable 120Ω terminating resistor CAN bus
4. Modbus RTU connection previous device
5. Modbus RTU connection to the following device
6. Switchable 120Ω terminating resistor Modbus RTU
7. Status LED
8. Button for WLAN (WiFi) and KNX TP
9. KNX TP connection terminals
10. Ethernet connection for the web server, Modbus TCP & BACnet IP with integrated switch
11. Battery (type CR2032)
12. 24V DC power supply Smartboard M
13. a) Digital output 1 – for example, for connecting of an open/close valve actuator
    b) Analog output 2 – for example, for connecting of a continuous valve actuator
14. a) Digital output 2 – for example, for connecting of an open/close valve actuator
    b) Analog output 3 – for example, for connecting of a continuous valve actuator
15. Analog Output 1 - for connection of the EC fan motor
16. Multifunction inputs 1 & 2 for connecting sensors/signals
17. Multifunction inputs 3, 4, and 5 for connecting sensors/signals
18. Fuse

A. CAN-Bus
B. Modbus RTU
C. Modbus TCP & BACnet IP
D. KNX TP
E. Outputs
F. Multi function inputs



Front view of smartboard M FCU 2P (xxxM1)



Front view of smartboard M FCU cont (xxxM2)

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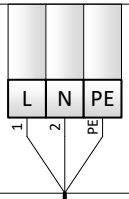
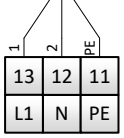
Power supply

230 VAC
50 Hz
Max. 50A

(Fuse on site)
max. conductor cross-section
2.5mm²

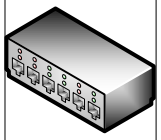


3



-on site-

Switch/Router



On-site network
Ethernet RJ45

BACnet IP or Modbus TCP
Licence required

Ethernet

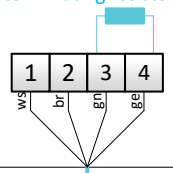
-Option-

Additional Touch Panel TP 5

Type 3311201

-

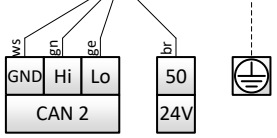
BUS terminating resistor 120Ω



4**

CAN-Bus

Use a twisted-pair cable for the
Hi and Lo signals from the bus



Termination CAN
ON OFF

KaControl MC System Controller

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-Option-

Heat requirement

Check connection terminals!

Release

1 2

2*

hardwired

26 27 28
C5 NC5 NO5

potential free changeover contact, maximal 230VAC / 8A

-Option-

Refrigeration requirement

Check connection terminals!

Release

1 2

2*

hardwired

29 30 31
C6 NC6 NO6

potential free changeover contact, maximal 230VAC / 8A

-Option-

Heat pump

Check connection terminals!

Release | Heating/ Cooling | Fault

1 2 3 4 5 6

6*

hardwired

20 21 22 23 24 25 43 77
C3 NC3 NO3 C4 NC4 NO4 24V DI2

potential free changeover contact, maximal 230VAC / 8A

-Option-

Outdoor temperature sensor

ODA-T

Install on the north-facing side if possible. Protect from direct sunlight!

1 2

2*

hardwired

62 96
GND AI1

KaControl MC System Controller

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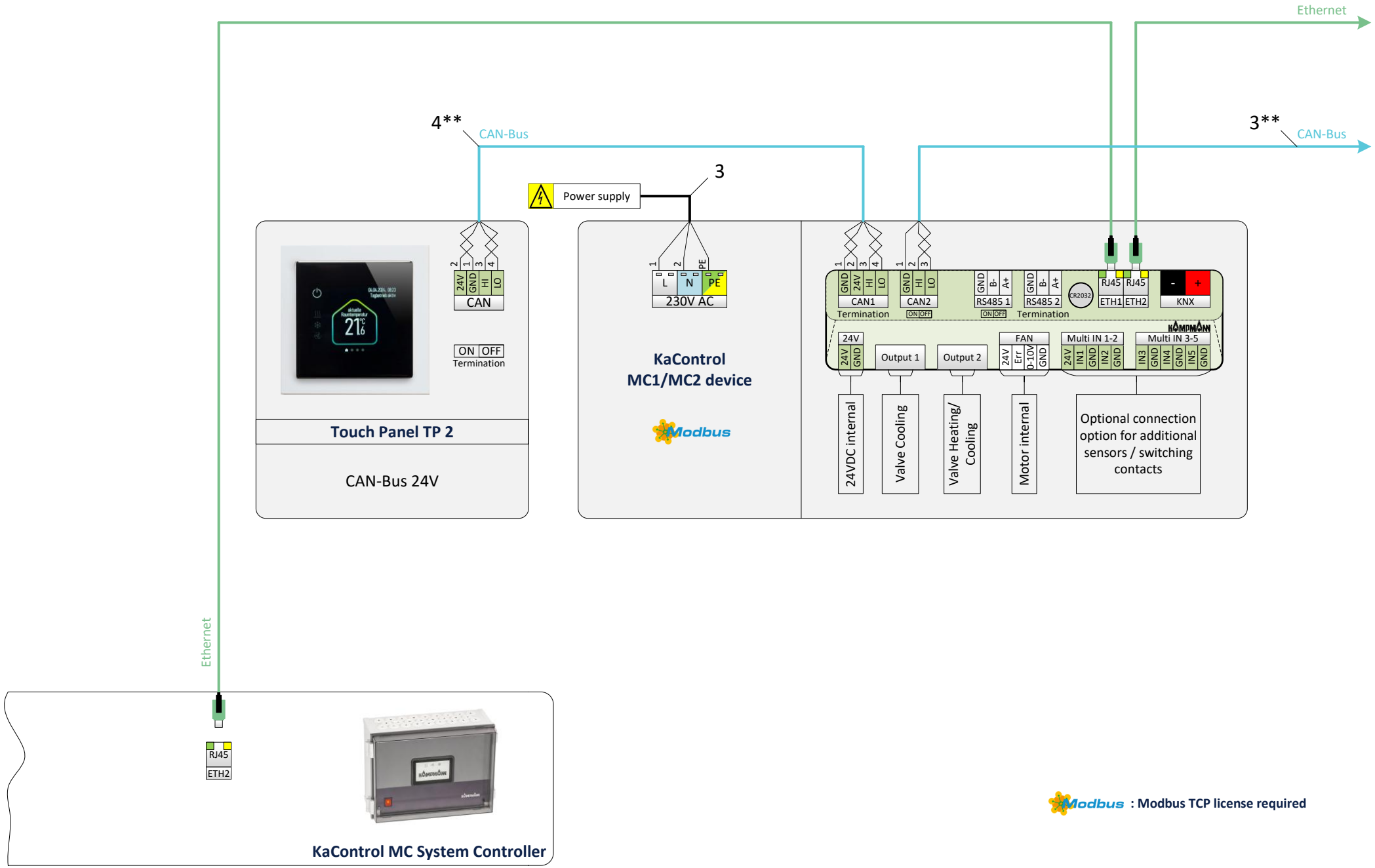

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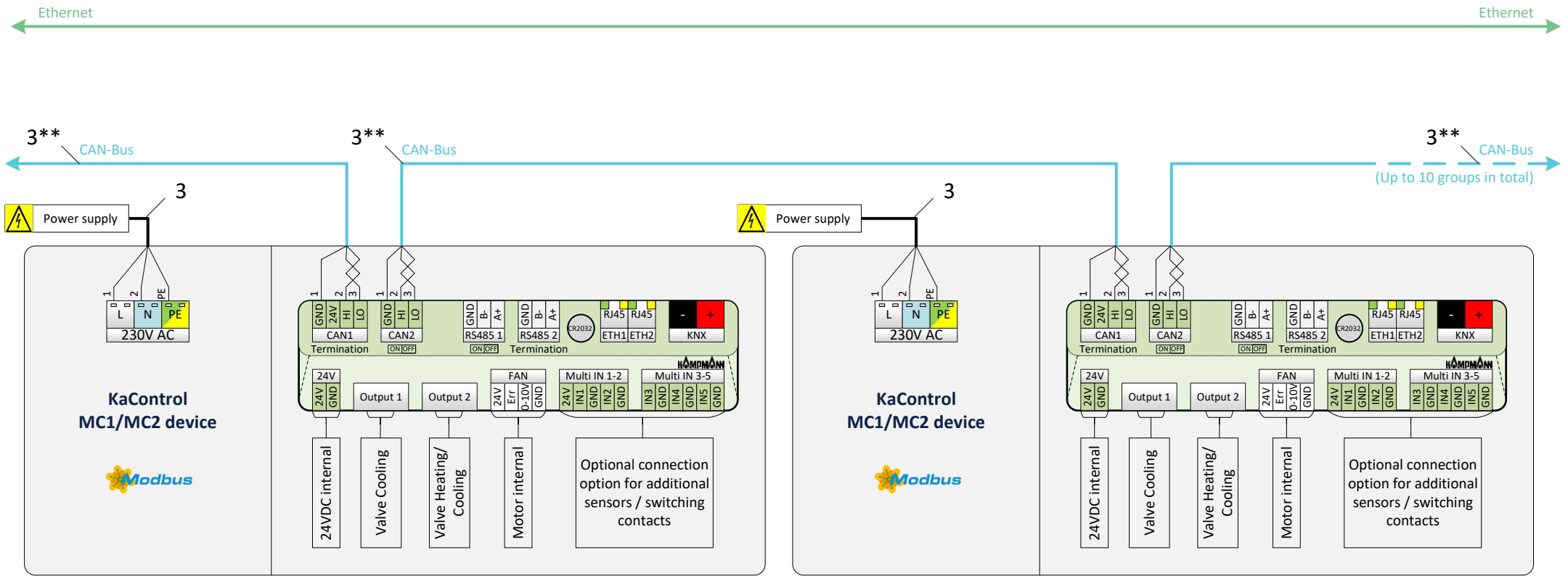

Modbus : Modbus TCP license required

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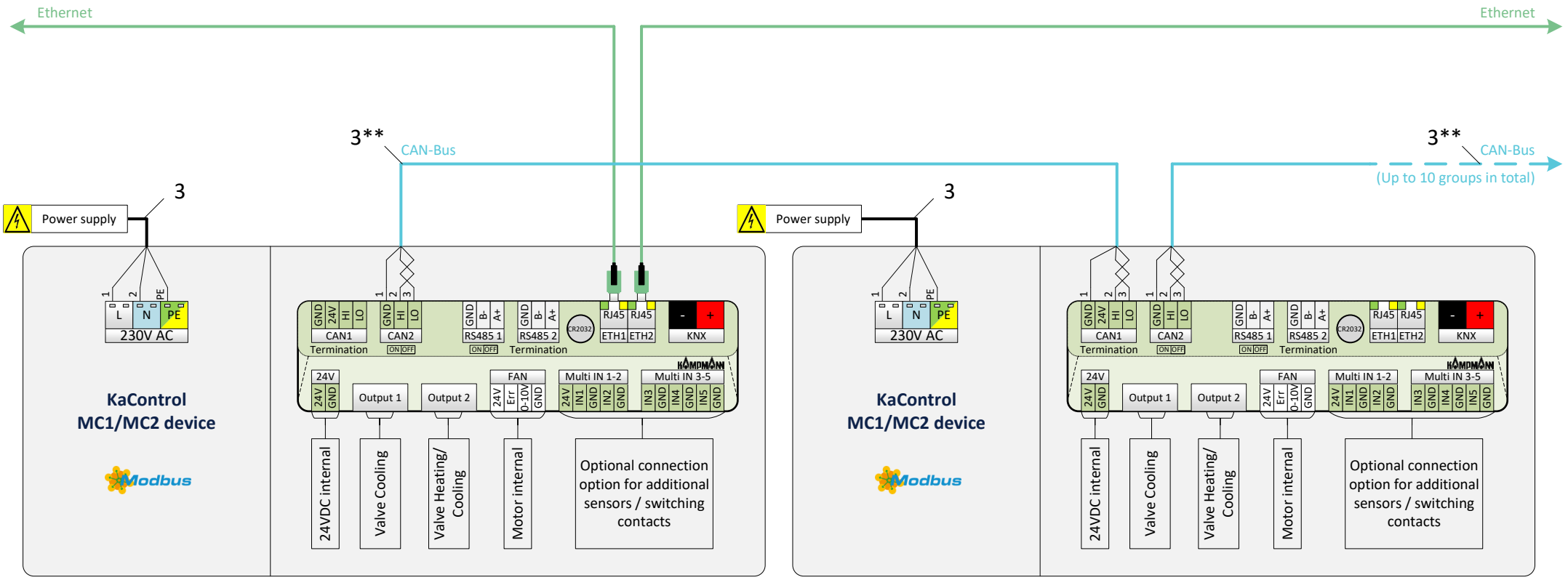
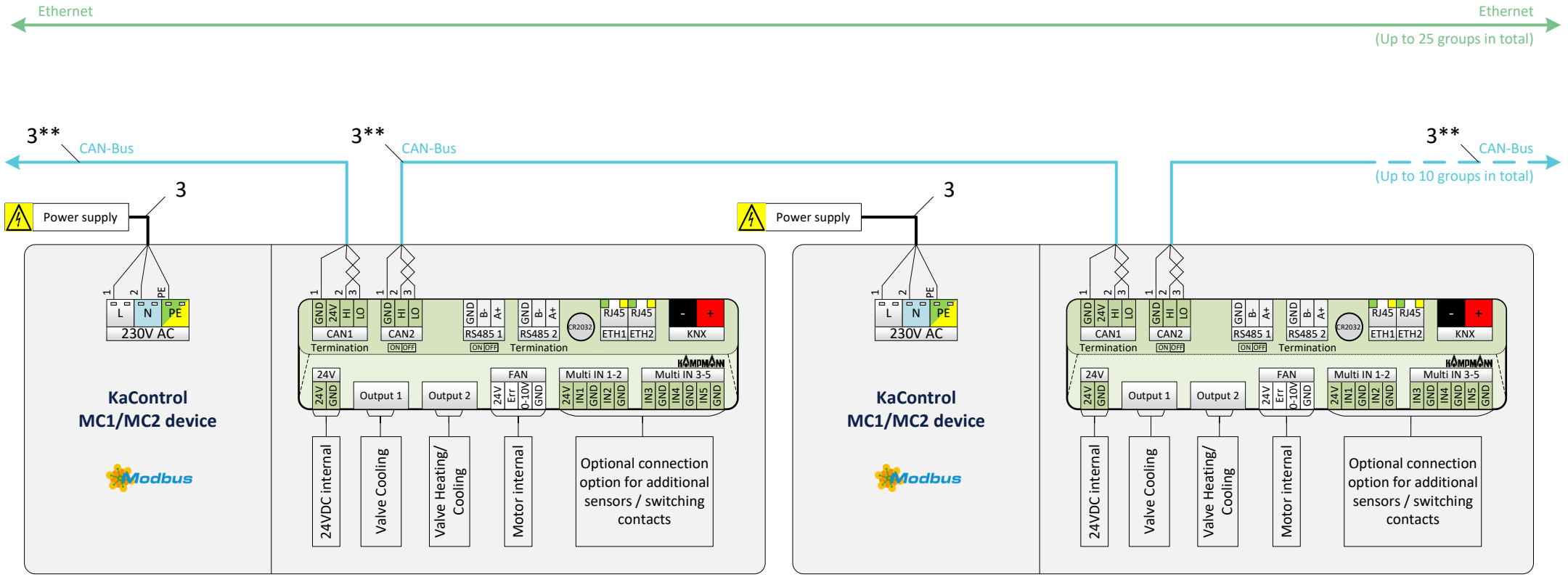


Modbus : Modbus TCP license required

	Author:	Project:	Group 2	Sheet no:	KAMPMANN
	Date: 28.07.2026	Project no:		11 von 13	



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