



- ▶ Install an additional electrical isolating device upstream of every line of connected TQ-Automation modules so that every TQ-Automation module in the line can be electrically disconnected.

NOTE

- Always run data and mains cables separately or in separate conduits. Refer to EN 50174-2.
- The PAT100 module requires no maintenance.

3 Target group

The activities described in this manual must only be carried out by technicians with the following qualifications:

- Training in the installation and commissioning of electrical devices
- Training in electrical hazards and the local safety requirements
- Knowledge of the relevant standards and directives
- Knowledge and observance of this document and all the safety instructions

4 Description

The PAT100 module acts as an extension of the CAB bus within a distributor cabinet (for a jump from one row to another, for example) and to remote TQ-Automation modules in other distributor boxes. A pair of PAT100 modules is needed for every extension.

The first PAT100 module is connected in series to the last module of the row to be extended, while the second PAT100 module is connected upstream of the first module of the row to be connected. The two PAT100 modules are connected to one another with a CAT6 cable.

The maximum bus length specified in the system manual (max. 80 m, depending on the load) should not be exceeded.

The PAT100 module has two interfaces:

- RJ-45 connector for connecting a made-up patch cable
- LSA terminals for punching down a CAT cable, the length of which is determined by the installation specifications

The two interfaces must not be used at the same time.

5 Intended usage

- The PAT100 module may only be used to extend the CAB bus as part of a TQ-Automation system.
- The PAT100 module may only be operated when it is installed on the DIN rail in the distributor box and the protective covers are attached.
- The PAT100 module is approved only for use in dry interior areas.
- Only use the PAT100 module as specified in the documentation provided. Any other usage may result in injury or damage to property.
- For safety reasons, no changes may be made to the PAT100 module, including the software, unless they are expressly approved for the product by TQ-Automation.
- The intended usage also includes compliance with all the notes in these instructions.

NOTE

Any types of usage other than those specified in section 5 „Intended usage“ are regarded as contrary to the intended usage and will invalidate the warranty.

6 Scope of delivery

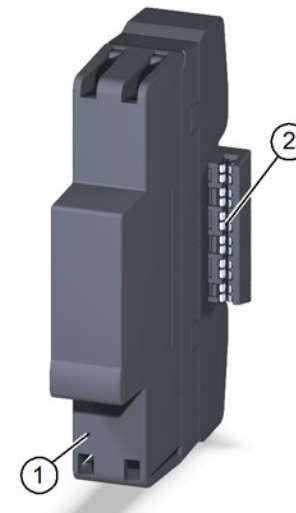


Fig. 1: View of the PAT100 Patch module

Item	Designation	Quantity
1	PAT100 Patch module	2x
2	Backplane connector*	1x
-	Installation instructions	1x

* The backplane connector is used to connect adjacent backplanes of other modules.

7 Technical data

Bus system/cable	
Bus system	CAB bus
CAT cable or patch cable category	CAT-6 or higher
Housing protection	
IP code	IP20
Protection class	II
Ambient conditions	
Ambient temperature	
— Operation	0 °C to 50 °C
— Storage	-25 °C to 60 °C
Relative humidity (non condens.)	50 % to 95 %
Air pressure during operation	790 hPa to 1070 hPa
Dimensions/weight	
Dimensions (W x H x D)	17.5 mm x 95 mm x 67 mm, width equals 1 DIN unit
Weight	0.05 kg
Handling	
Max. altitude during operation	2000 m above sea level

8 Installation



Danger of death by electric shock.

Only CAB bus signals and voltages may be routed via the PAT100 module. Components of other TQ-Automation modules on the same DIN rail do carry potentially fatal voltages, however.

- ▶ Disconnect the connection points from the power supply.
- ▶ Secure the fuses to prevent switching on again.
- ▶ Make sure that the conductors to be connected are voltage-free.

8.1 Tools and equipment

- Punch-down tool for making up CAT cables

8.2 Install PAT100 modules

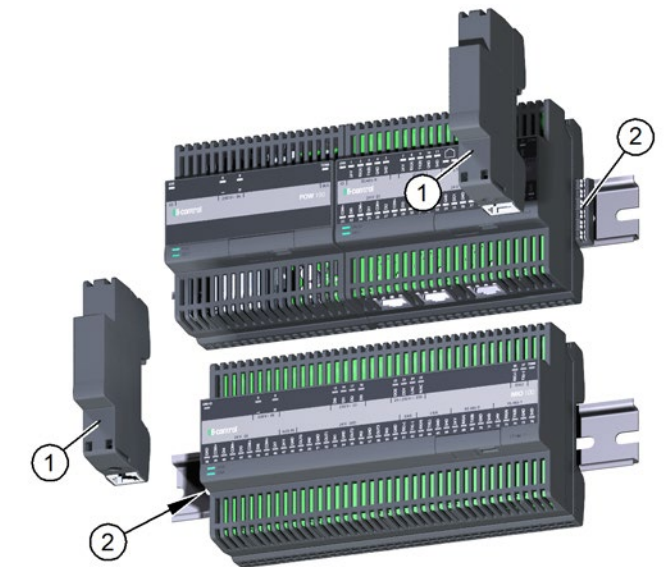


Fig. 2: Attach PAT100 modules

- ▶ Plug two PAT100 modules (item 1 in Fig. 2) into the backplane connectors (item 2 in Fig. 2) of the TQ-Automation modules that you want to connect.

NOTE

- ▶ Please observe that the PAT module is always oriented with the RJ45 socket (item 1 in Fig. 3) or CAT cable (item 8 in Fig. 3) facing down.

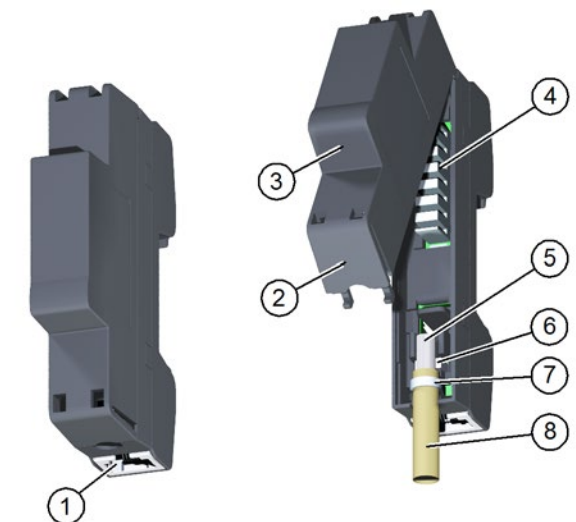


Fig. 3: Connect PAT100 modules with patch cable or CAT cable
There are two ways to electrically connect the PAT100 modules with a cable:

- Connection with a patch cable
 - ▶ Plug the patch cable connectors into the appropriate RJ-45 sockets (item 1 in Fig. 3) on the two PAT100 modules.
- Connection with a CAT cable
 - ▶ Press the tab (item 2 in Fig. 3) on the underside of the cover (item 3 in Fig. 3) up slightly. Swivel the cover up and lift it out.
 - ▶ Use the punch-down tool to punch the conductors of the CAT cable (item 8 in Fig. 3) onto the LSA terminals (item 4 in Fig. 3).

NOTE

- ▶ Wire the conductors of the CAT cable all in accordance with TIA-568A or all in accordance with TIA-568B.
- ▶ Make sure that the shielding (item 5 in Fig. 3) of the CAT cable reaches the GND contact (item 6 in Fig. 3).
- ▶ Fix the CAT cable with a cable tie (item 7 in Fig. 3) and replace the cover.

NOTE

Do NOT connect a patch cable and a CAT cable at the same time.

8.3 Start up the PAT100 module

NOTE

- ▶ Carry out an insulation measurement before starting up.
- ▶ Switch on the POW100 mains adapter. The L LED (no. 6) on the POW100 module and the RUN LED on the POW100 module light up green.
- ▶ Check the RUN LEDs of all connected TQ-Automation modules.

9 Environmentally-friendly disposal

- ✂ The PAT100 module must not be disposed of in the residual waste bin.
- ▶ Dispose of the PAT100 module in accordance with the electronic waste disposal regulations that apply on site.

10 Fault finding

- The RUN LEDs on all the TQ-Automation modules on the next DIN rail do not light up.
 - Fault in the wiring of the patch cable or CAT cable. Check that the wiring is correct.
 - Fault in the PAT100 module. Contact Customer Service.

11 Contact

If you have technical problems with the product, contact TQ-Automation Customer Service. We will need the following information to be able to give you specific help:

- Serial number of the PAT100 module
- Description of the fault

TQ-Systems GmbH
Mühlstr. 2, Gut Delling
D-82229 Seefeld
Germany

Phone: +49 (0) 8153 9308-699
Internet: www.tq-automation.com
Email: info@tq-automation.com

12 Network example – TQ-Automation modules arranged centrally

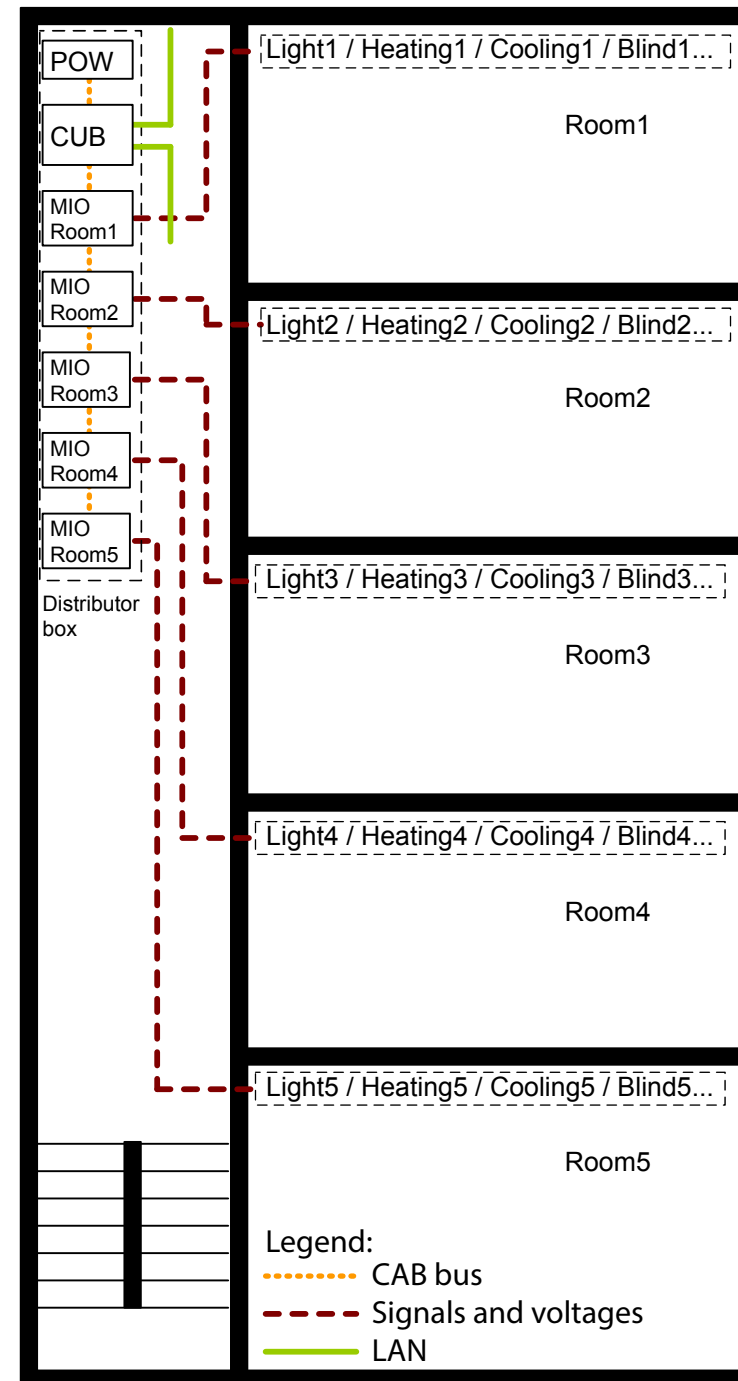


Fig. 4: TQ-Automation modules arranged centrally

13 Network example – Distributed TQ-Automation modules connected via internal CAB bus

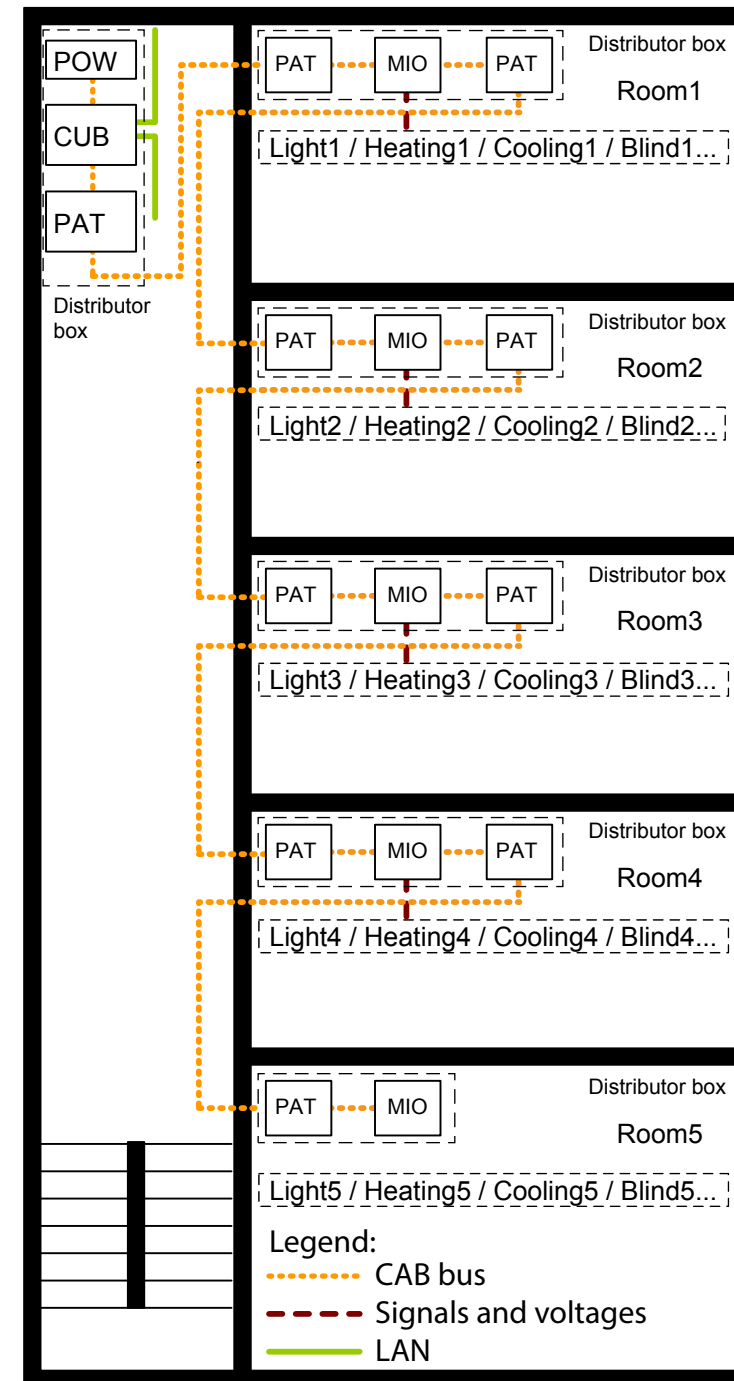


Fig. 5: Distributed TQ-Automation modules connected via internal CAB bus

14 Network example – Distributed TQ-Automation modules connected via LAN

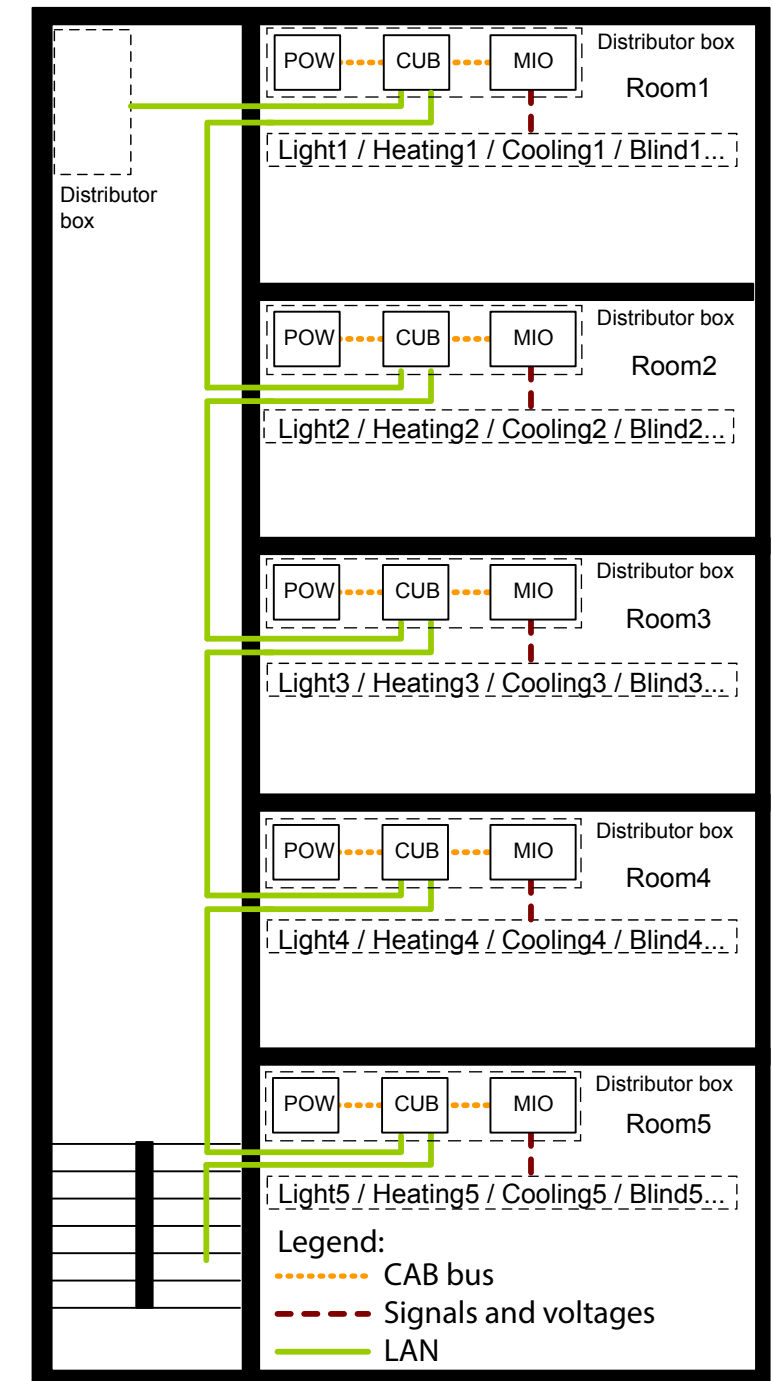


Fig. 6: Distributed TQ-Automation modules connected via LAN