

Rittal – The System.

Faster – better – everywhere.

LCP Rear Door CW



Passive module

3314.615 3314.625

3314.630 3314.650

3314.815 3314.825

3314.830 3314.850

Active module

3314.020 3314025

Water module

3314.635

Assembly and installation instructions

ENCLOSURES

POWER DISTRIBUTION

CLIMATE CONTROL

IT INFRASTRUCTURE

SOFTWARE & SERVICES

FRIEDHELM LOH GROUP



Foreword

Dear Customer,

Thank you for choosing a Rittal LCP Rear Door CW (also referred to hereafter as "LCP").

Please take the time to read this documentation carefully and pay particular attention to the safety instructions in the text and to section 2 "Safety instructions".

This is the prerequisite for:

- safe assembly of the LCP Rear Door CW,
- safe handling and
- the most trouble-free operation possible.

Please keep the complete documentation readily available so that it is always on hand when needed.

We wish you every success!

Yours

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We are always happy to answer any technical questions regarding our entire range of products.

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1 Notes on documentation

1.1 Storing the documents

The assembly and installation instructions as well as all applicable documents are an integral part of the product. They must be issued to everyone who works with the unit and must always be available and on hand for the operating and maintenance personnel.



1.2 Symbols in these operating instructions

The following symbols are used in this documentation:



Danger!

Hazardous situation which will result in death or serious injury if the instructions are not followed.



Warning!

Hazardous situation which may lead to death or serious injury if the instructions are not followed.



Caution!

Hazardous situation which may lead to (minor) injuries if the instructions are not followed.



Note:

Information concerning individual work steps, explanations or tips for simplified procedures. Also indicates situations which may result in material damage.

- This symbol indicates an "Action Point" and shows that you should perform an action / work step.

1.3 Associated documents

In conjunction with these assembly and installation instructions, the superordinate system documentation (if available) also applies.

Rittal GmbH & Co. KG is not responsible for any damage which may result from failure to comply with these assembly and installation instructions. The same applies to failure to comply with the valid documentation for any accessories used.

1.4 Normative notes

1.4.1 Legal information concerning the operating instructions

We reserve the right to make changes in content. Rittal GmbH & Co. KG will not be held liable for any mistakes in this documentation. Liability for indirect damages associated with the supply or use of this documentation is excluded to the extent allowable by law.

1.4.2 Copyright

The distribution and duplication of this document and the disclosure and use of its contents are prohibited unless expressly authorised.

Offenders will be liable for damages. All rights created by a patent grant or registration of a utility model or design are reserved.

2 Safety instructions

The LCP Rear Door CW produced by Rittal GmbH & Co. KG is developed and produced with due regard to all safety measures. Nevertheless, the unit still poses a number of unavoidable dangers and risks. These safety instructions provide an overview of these dangers and the necessary safety precautions. In the interests of your own safety and the safety of others, please read these safety instructions carefully before assembling and commissioning the LCP Rear Door CW!

Follow the user information found in these instructions and on the unit carefully.

2.1 General safety instructions

Please observe the following general safety instructions.

- Wear your personal protective equipment for all work performed on the unit (see section 2.9 "Personal protective equipment").
- Please do not make any changes to the LCP Rear Door CW that are not described in these assembly and operating instructions or other associated manuals.
- The LCP Rear Door CW should only be combined and operated with the prescribed Rittal system accessories.
- The LCP Rear Door CW service door may be opened only by appropriately qualified service personnel.
- Other than these general safety instructions, ensure you also observe the specific safety instructions when performing the tasks described in the following chapters.

2.2 Safety instructions for transportation

- There is risk of injury if the entire packaging unit collides with people during relocation. Transport the units by qualified specialists trained by Rittal.
- There is risk of injury from heavy components. Use suitable transport/auxiliary equipment (e.g. lifting eyebolt, load handling equipment and lifting gear).
- There is risk of injury from falling loads. Do not stand under suspended loads when transporting the unit with a hoist trolley, a forklift, or a crane.
- There is risk of injury caused by the unit toppling. Transport the unit only lying flat lashed down on a pallet, and in its original packaging! If it is not possible to transport the unit lying flat to the installation site due to local conditions, it must be transported by at least two persons that secure the unit from toppling.

2.3 Safety instructions for assembly

- Assemble the units by qualified specialists trained by Rittal.
- When unpacking the LCP Rear Door CW, there is risk of being crushed between the unit and the packaging. Wear personal protective equipment before lifting out the unit (as with all work on the unit)!
- There is risk of injury caused by the unit toppling. In the upright position, there is risk of the LCP Rear Door CW tipping over when it is not connected to a server rack. Have a second person secure the unit in an upright position or secure it to a hoist using a lifting eyebolt and lifting gear. The unit must **not** be lifted by lifting eyebolts when in the upright position.
- There is risk of injury from falling loads. If the server rack is not fully equipped, there is risk of tipping when the LCP Rear Door CW is swivelled away. Heavy equipment should be installed in the bottom part of the server rack. Where necessary, secure the server rack to the floor to prevent it tipping over.

- There is risk of being trapped between the server rack and the LCP Rear Door CW, particularly in the hinge area during assembly. Ensure that no limbs are in the danger area when the LCP Rear Door CW is being moved.
- There is risk of being trapped between the server rack and the LCP Rear Door CW when screwing the components together. Ensure that no limbs are in the danger area.
- There is risk of being trapped between the active module and the LCP Rear Door CW (passive module) when incorporating the active module. Ensure that no limbs are in the danger area.
- There is risk of injury should the water module fall (especially when installed in the roof section). Wear personal protective equipment!
- The units may need to be assembled in a warm environment, especially for a retrofitted active module. Ensure that the assembly personnel are sufficiently fit to avoid collapse due to heat effects.

2.4 Safety instructions for installation

- There is risk of being trapped when screwing on the cooling medium pipes. Wear personal protective equipment before beginning assembly and cleaning work!
- There is risk of injury in the event of leakage, particularly when using the passive module without the active module and water module. The operating company must provide shut-off valves in the cooling water pipes so that work can be performed on the unit without water pressure.

2.5 Safety instructions for operation

- There is risk of malfunction or damage. Do not modify the unit. Use only original spare parts.
- An increased noise level may occur during operation of the LCP Rear Door CW. Wear your personal protective equipment!
- Proper operation can only be ensured if the unit is operated under the intended ambient conditions. As far as possible, observe the ambient conditions for which the unit was designed, e.g. temperature, humidity, air purity.
- The cooling water medium necessary for the control system must be available throughout the entire operating time.
- It is vital that the manufacturer's consent is obtained before adding anti-freeze!

2.6 Safety instructions for maintenance

- There is risk of cut injuries, particularly from sharp edges of the heat exchanger module. Wear personal protective equipment before beginning assembly and cleaning work!
- When removing and installing the active module, there is risk of injury from sharp edges in the interior of the LCP Rear Door CW, the active module falling, high air speeds and noise. Wear your personal protective equipment!
- There is risk of injury from the fan impellers. Keep persons and objects away from the fan impellers! Open the service door only when the power supply is disconnected and fan impellers are stationary! Always use mechanical protection when working! Tie long hair back! Do not wear loose clothing! The fan runs automatically when power is switched on!
- Observe the relevant safety data sheet for all work with the cooling medium.

2.7 Safety instructions for shutdown

- During storage and transportation below freezing point, the water circuit should be drained completely using compressed air!

2.8 Operating and technical staff

The installation, commissioning, maintenance and repair of this unit must be performed by qualified mechanical specialists.

Only instructed personnel may work on the unit while in operation.

2.9 Personal protective equipment

Personal protective equipment, which should as a minimum include waterproof protective gloves and safety goggles, must be worn during any work on the unit when personnel might come into contact with cooling medium (for deployment of a water-glycol mixture).

Personal protective equipment, consisting of at least cut-resistant gloves and safety shoes, must be worn, especially during assembly, installation and maintenance of the unit.

We also recommend the wearing of suitable ear muffs and a hair net when working near the unit.

For all work on the unit, in particular on the air outlet side, wearing safety goggles is recommended to prevent eye injuries caused by the high air speeds.

2.10 RoHS compliance

The LCP Rear Door CW fulfils the requirements of EU Directive 2011/65/EU that restricts the use of hazardous substances in electrical and electronic equipment (RoHS) from 1 July 2011.



Note:

The corresponding information about the RoHS Directive can be found on our website at www.rittal.com.

Safety instructions in accordance with Regulation (EC) No. 1907/2006

The product contains the following SVHC materials:

SVHC ingredient	CAS No.
4,4'-isopropylidendiphenol	80-05-7
Lead	7439-92-1
Cadmium	7440-43-9
Mercury	7439-97-6
Lead titanate	12060-00-3
Lead oxide	1317-36-8
Boron trioxide	1303-86-2

Tab. 1: SVHC ingredients

According to the manufacturer, there are no health risks provided the product is handled correctly during use.

After use, the product must be disposed of properly in accordance with the applicable statutory regulations.

2.11 IT safety instructions

To ensure the availability, confidentiality and integrity of data, products, networks and systems must be protected against unauthorised access.

Such protection can be achieved only with organisational and technical measures. To satisfy the increased safety requirements, Rittal recommends the observance of the following measures. Furthermore, more detailed information can be found on the websites of Bundesamt für Sicherheit in der Informationstechnik (Federal Office for IT Security – BSI).

2.11.1 Measures for products and systems

Do not embed products and systems unprotected in public networks.

- Make sure that the system is only operated in protected networks.

Configure the firewall

- To protect your networks, and the embedded products and systems against external effects, configure a firewall.
- Also deploy a firewall for segmentation of a network or to isolate a controller.

Consider defence-in-depth mechanisms during the planning phase.

- Consider defence-in-depth mechanisms for your plant planning.
- Defence-in-depth mechanisms cover several levels of mutually coordinated security measures.

Restrict access authorisations

- Restrict access authorisations to networks and systems to only persons that need an authorisation.

Protect accesses

- Do not use the default passwords; instead, use secure, long passwords containing numbers, a mix of upper case and lower case letters, symbols and no repetitions.
- Create random passwords with a password manager.

Deploy the current firmware version

- Ensure that the current Rittal firmware is deployed on all units.
- The firmware can be downloaded from the associated product pages in the Internet.
- Observe the associated Release Notes for new firmware versions.

Deploy the latest security software

- To identify and eliminate security threats, such as viruses, trojans and other malicious software, security software should be installed on all PCs and smartphones, and kept up-to-date.
- Deploy whitelist tools to monitor the unit context.
- Deploy an intrusion-detection system to validate the communication of your plant.

Perform regular threat analyses

- Rittal recommends that you perform regular threat analyses.
- The threat analyses allow you to determine whether your adopted measures are effective.

Protect USB ports against access

- USB ports must be protected against physical access. Ensure that no unauthorised persons have access to USB ports.
- Sensitive data can be read for an unauthorised access to USB ports.

3 Product description

3.1 Unit setup

3.1.1 Passive module

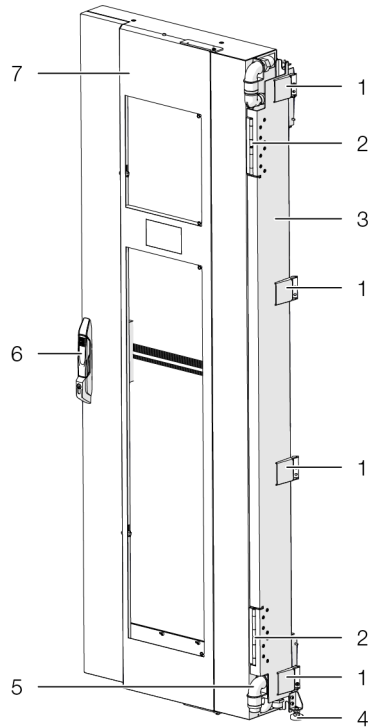


Fig. 1: LCP Rear Door CW (passive module) – front view

Key

- 1 Frame with four outer fastening points of the LCP Rear Door CW (4x)
- 2 Hinges (2x)
- 3 LCP Rear Door CW
- 4 Assembly foot
- 5 Cooling water connection, inlet
- 6 Door handle
- 7 Service door for access to the heat exchanger / active module

The LCP Rear Door CW consists of the so-called passive module, ultimately a rear door with heat exchanger and side frame.

The LCP Rear Door CW is assembled with four screws on the rear frame of the server rack and thus closes the server rack with a 2-point locking mechanism. In addition, the LCP Rear Door CW is fixed to the server rack with two support brackets.

A maintenance door is assembled in the centre of the LCP Rear Door CW. Whilst closed, this provides access protection for the heat exchanger. Alternatively, the active module can be assembled here.

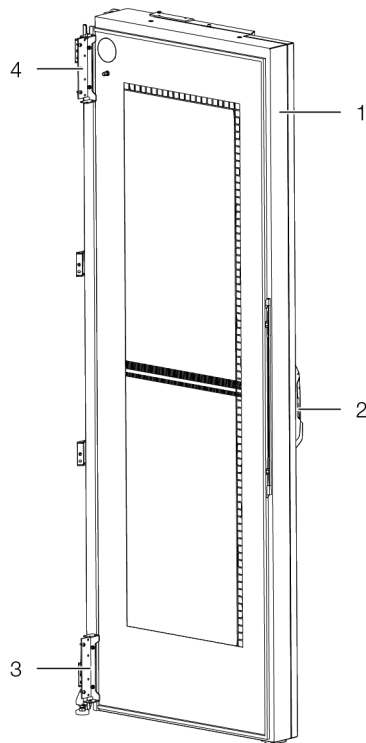


Fig. 2: LCP Rear Door CW (passive module) – rear view

Key

- 1 Enclosure
- 2 Door handle
- 3 Bottom support bracket
- 4 Top support bracket

Air/water heat exchanger with cooling water connection

The air/water heat exchanger is assembled in the LCP Rear Door CW. The cooling water connection is connected to the main connections of the cooling water inlet and return by two DN 25 (AG 1") externally threaded pipes. As standard, the connection nozzles are positioned vertically downwards.

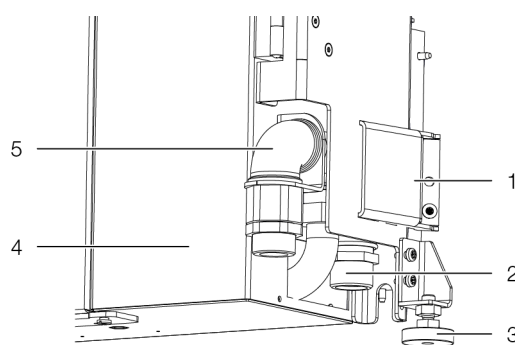


Fig. 3: Bottom connection nozzles on the LCP Rear Door CW

Key

- 1 Frame
- 2 Cooling water connection, return
- 3 Assembly foot
- 4 LCP Rear Door CW
- 5 Cooling water connection, inlet

An upward connection is also available on request as an option.

3 Product description

EN

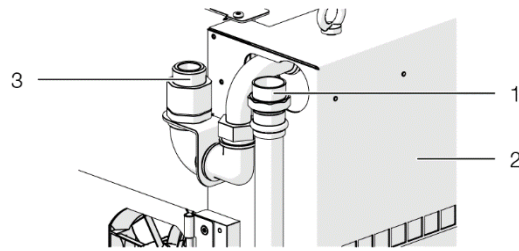


Fig. 4: Top connection nozzles on the LCP Rear Door CW

Key

- 1 Cooling water connection, return
- 2 LCP Rear Door CW
- 3 Cooling water connection, inlet



Note:

If the LCP Rear Door CW is equipped with the optional water module, the water module is connected to the connection nozzles and only from there to the on-site cooling water supply.

3.1.2 Active module

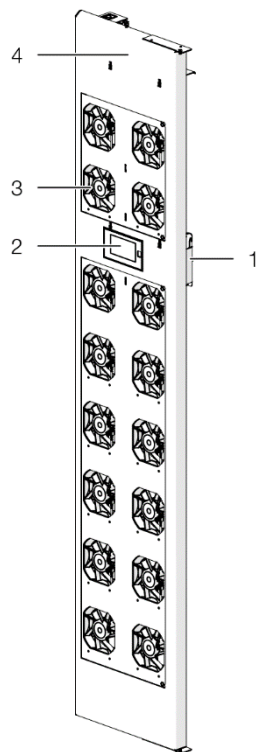


Fig. 5: Active module – front view

Key

- 1 I/O Board holder
- 2 Display (optional – assembled in the service door)
- 3 Fan (16x)
- 4 Active module

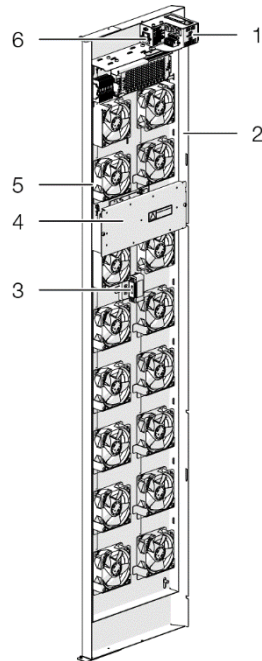


Fig. 6: Active module – rear view

Key

- 1 Network and sensor connections
- 2 Active module
- 3 CMC III temperature/humidity sensor
- 4 I/O Board holder
- 5 Fan (16x)
- 6 Mains connection

The active module consists essentially of 16 fans arranged on a common base plate. The active module is assembled completely inside the LCP Rear Door CW. The fans are controlled via a common control unit assembled in the centre of the active module.

The fans can be operated continuously from 10% – 100%.

The fans are assembled on the rear of the active module. The connections for the power supply and the control lines are also located on the rear of the active module. The air intake side of the LCP Rear Door CW is positioned against a sealing profile. This means that when installed, the fans are directly connected to the air/water heat exchanger of the LCP Rear Door CW, and thus ensure a problem-free and direct channelling of the air from the air/water heat exchanger to the active module.

3.1.3 Water module

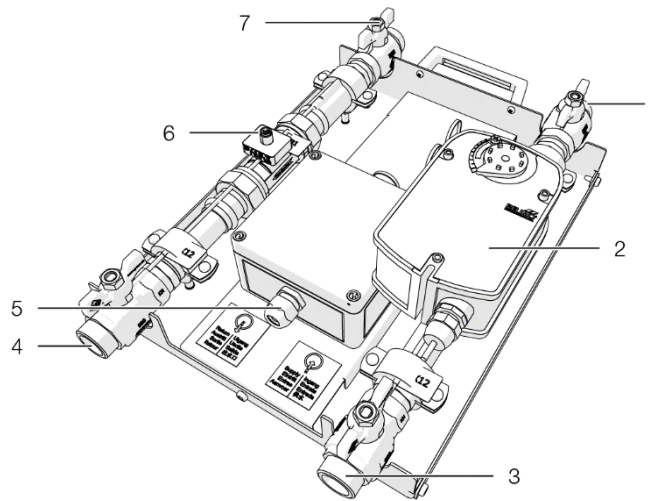


Fig. 7: Water module

Key

- 1 LCP Rear Door CW cooling water connection, inlet
- 2 Belimo stop valve
- 3 Cooling water connection, building inlet
- 4 Cooling water connection, building return
- 5 Cable with plug (X7) for connection to the active module
- 6 Flow sensor
- 7 LCP Rear Door CW cooling water connection, return

The piping for the building cooling water connection (inlet and return) of the LCP Rear Door CW runs in the water module. The water module pipes must be connected to the corresponding connections on the LCP Rear Door CW, as appropriate for the water module positioning. A motorised control stop valve is located in the cooling water inlet pipe to control the cooling water flow. A flow sensor is located in the cooling water return pipe. The cooling water connection is connected to the main inlet and return connections by two G1" externally threaded pipes for flange gaskets. The connection nozzles are arranged horizontally. The cooling water connection to the cold water network can be made by either rigid pipework or flexible hoses, which are available from the Rittal accessory range.

3.2 Proper and improper usage

The LCP Rear Door CW is an air/water heat exchanger that cools closed housings in which IT components such as servers, switches or similar are installed. The LCP Rear Door CW must always be used in conjunction with a cold water supply, typically a chiller or free cooler. The water supply must always be a closed circuit. The water quality over the entire service life must conform to the specifications in these instructions. The unit must be deployed within the technical operating limits described in these instructions.

The Rittal LCP Rear Door CW active module may be integrated only into an LCP Rear Door CW passive module and operated there.

The unit is state of the art and built according to recognised safety regulations. Nevertheless, improper use can pose a threat to the life and limb of the user or third parties, or result in possible damage to the plant and other property. Consequently, the unit must only be used properly and in a technically sound condition! Any malfunctions which impair safety should be rectified immediately. Follow the operating instructions!

Proper use also includes following the operating instructions and fulfilling the inspection and maintenance conditions.

Improper use may result in danger. Examples of improper use include:

- Use of impermissible tools.
- Improper operation.
- Improper rectification of malfunctions.
- Use of spare parts which are not authorised by Rittal GmbH & Co. KG.

3.3 LCP Rear Door CW scope of supply (passive module)

LCP Rear Door CW (passive module) scope of supply includes:

Quantity	Parts
1	LCP Rear Door CW, ready for connection
1	<ul style="list-style-type: none"> - 4x countersunk screws (Mat. No. 341690) - 4x M6 polystop nuts - 1x mounting aid (levelling foot) - 12x screws M5 x 12 (Torx 30) - 2x support brackets VX-TS connection from inside - 1x sealing roll, self-adhesive - 1x assembly and installation instructions (short form)

Tab. 2: Scope of supply



Note:

Please refer to the accompanying note for the scope of the supply of the optional components "Active module" and "Water module".

4 Transport and handling

4.1 Transport

Depending on the scope of supply or configuration, the LCP Rear Door CW components are supplied on a pallet for each unit (stacked four high) incl. the corresponding dispatch bag.



Danger! Injury due to falling loads!

Do not stand under suspended loads when transporting the unit with a hoist trolley, a forklift, or a crane.



Warning! Risk of injury caused by toppling the unit!

Transport the unit only lying flat lashed down on a pallet!



Warning! Risk of injury!

Please note the maximum weights that may be lifted by individuals. It may be necessary to use lifting gear.

4.2 Unpacking



Caution!

There is a general risk of being crushed when removing the LCP Rear Door CW components from the packaging.



Note:

Unpacking the passive module is described in detail below. The optional components "Active module" and "Water module" are unpacked similarly.

The LCP Rear Door CW is supplied lying flat on a pallet.

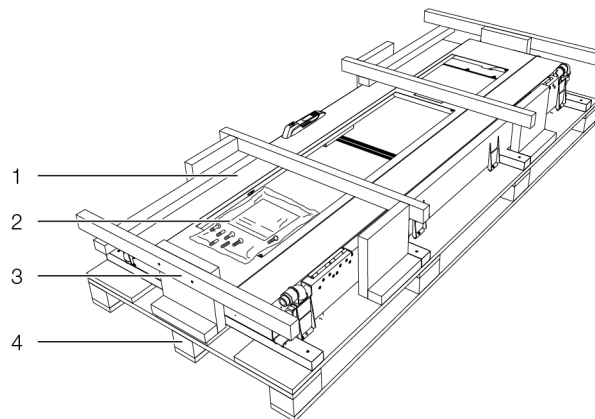


Fig. 8: LCP Rear Door CW on pallet

Key

- 1 LCP Rear Door CW
- 2 Dispatch bag
- 3 Transport clamps
- 4 Pallet

- Remove all transport clamps of the LCP Rear Door CW top and bottom, on the front and on the left-hand side of the LCP Rear Door CW. The transport clamps are screwed together with wood screws. The LCP Rear Door CW now lies between the side transport clamps on the pallet, wrapped in air-cushioned foil.

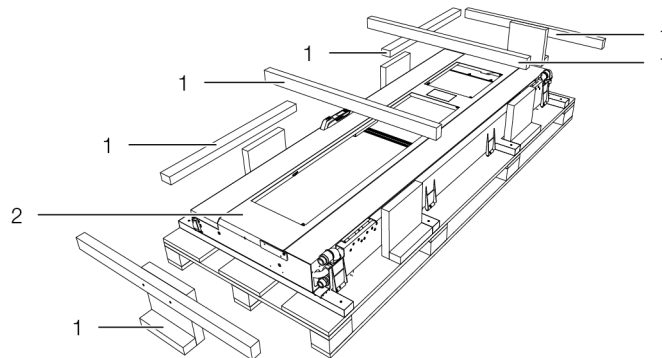


Fig. 9: Removing the transport clamps

Key

- 1 Transport clamps
- 2 LCP Rear Door CW

- Remove the accessories from the packaging.

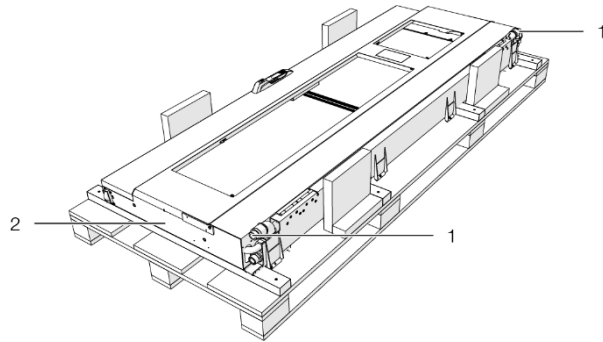


Fig. 10: LCP Rear Door CW after removing the transport clamps

Key

- 1 Water connections
- 2 LCP Rear Door CW

- If necessary, also remove the side transport clamps or lift out the unit with two persons.
- Take care not to place or lay the unit on the water connections.
- Place the unit in a suitable position and remove the air-cushioned foil.
- Check the unit for any damage that may have occurred during transport.



Warning! Risk of injury caused by toppling the unit!
In the upright position, there is risk of the LCP Rear Door CW tipping over when it is not connected to a server rack. Secure the unit in an upright position with a second person.

- Proceed similarly with the other optional components "Active module" and "Water module". The "Active module" is also packed in air-cushioned foil inside the cardboard packaging.

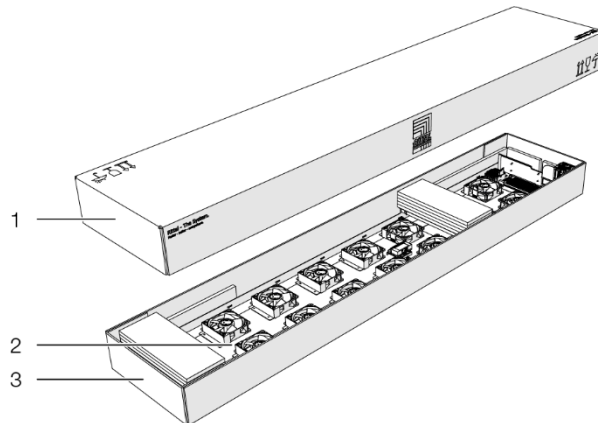


Fig. 11: Removing the snap-on cover on the active module

Key

- 1 Snap-on cover
- 2 Active module
- 3 Cardboard packaging

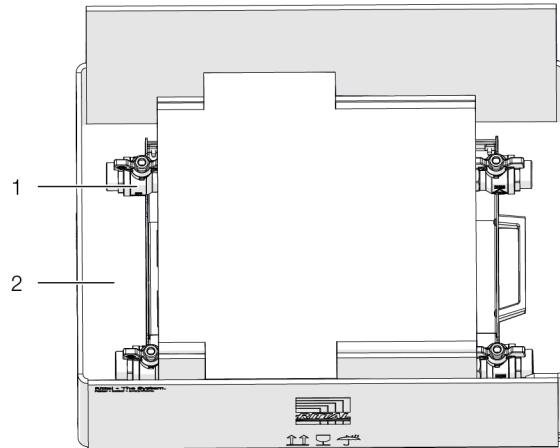


Fig. 12: Opened packaging of the water module

Key

- 1 Water module
- 2 Cardboard packaging



Note:

After unpacking, the packaging materials must be disposed of in an environmentally friendly way. It consists of the following materials: wood, polyethylene foil (PE foil), strap, corrugated cardboard.

5 Assembly and installation

5.1 General



Warning! Injury due to falling loads!

If the server rack is not fully equipped, there is risk of tipping when the LCP Rear Door CW is swivelled away! Heavy equipment should be installed in the bottom part of the server rack.

Where necessary, secure the server rack to the floor to prevent it tipping over.



Caution! Risk of malfunction or damage!

Assemble the units by qualified specialists trained by Rittal.

5.1.1 Installation site requirements

The LCP Rear Door CW is an air/water heat exchanger for IT equipment.

Please observe the following general notes on the installation site:

- The installation site of the LCP Rear Door CW must be protected from external weather conditions.
- The installation room should be sealed in order to avoid uncontrolled air exchange with the environment.
- The fresh air supply should be reduced to a minimum, in accordance with generally recognised technical regulations.
- If the intake air to the installation room is cooled by an air-conditioning system, ensure that the relative air humidity is adapted to the water inlet temperature of the LCP Rear Door CW. This avoids condensation and ensures maximum energy efficiency.

- The unit must not be located or operated at sites accessible to the general public. Only appropriately authorised personnel should have access to the installation site.

In order to ensure problem-free operation of the LCP Rear Door CW, the following conditions for the installation site should be observed:

Supply connections required on-site

Connection type	Connection description:
Power connection:	110...240 V, 1~, 50/60 Hz Line protection in accordance with wiring plan (see section 10 "Wiring plan").
Cooling water connection:	15 °C inlet temperature (depending on relative humidity) Max. 10 bar permissible operating pressure Volumetric flow: in accordance with the configuration DN 25 (G1") external pipe thread

Tab. 3: Supply connections required on-site



Note:

For the cooling water connection, also observe the notes and specifications in section 6.2 "Cooling water connection" and the further descriptions in the assembly, installation and operating instructions.



Recommendation:

To facilitate servicing of the LCP Rear Door CW, maintain a distance of at least 1 m between the rear of the unit and the nearest wall.

Floor conditions

- The floor of the installation area should be rigid and level.
- Choose the installation site carefully so that the unit is not situated on a step or uneven surface, etc.

Climate conditions

In accordance with the technical specifications (see section 9 "Technical specifications").



Recommendation:

Room temperature +22 °C at 50% relative air humidity, according to ASHRAE directive.

Installation guidelines

The positioning in the rack suites must be considered when planning the installation site. In particular, care should be taken to ensure that external air flows are not pointing directly to the rear of the LCP Rear Door CW. Such counter-flows prevent hot air from being expelled by the LCP Rear Door CW, leading to the formation of a hot spot inside the server rack.

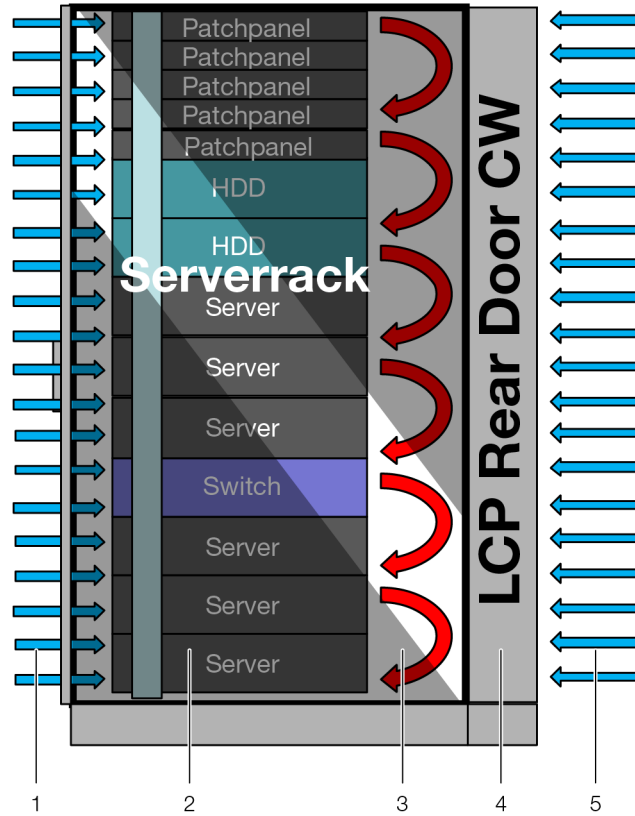


Fig. 13: Incorrect external air flow

Key

- 1 Cold ambient air
- 2 Server rack with installed units
- 3 Hot spot caused by failure to expel hot air
- 4 LCP Rear Door CW with air/water heat exchanger
- 5 External air flow to the LCP Rear Door CW

A serial layout is the best option. This means the cold air generated by the LCP Rear Door CW is drawn in by a server rack behind it. The LCP Rear Door CW installed there cools the air in this server rack, etc.

If several server racks are positioned adjacent to one another, each rack must be partitioned separately. To this end, we recommend using a partition between two racks, and a corresponding side panel as the termination.

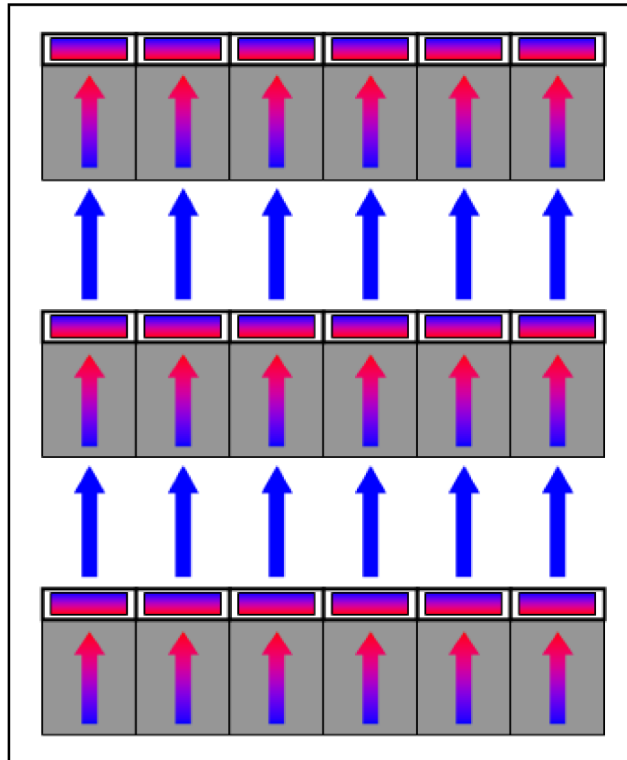


Fig. 14: Serial layout

5.2 Assembly procedure

5.2.1 General

Before the LCP Rear Door CW can be installed onto the server rack, the following work must be performed:

- Seal the server rack,
- Dismantle the rear server rack door, if present
- Remove the locking pieces for the divided rear door and
- Dismantle the right-hand side panel, if present.

5.2.2 Seal the server rack

In order to ensure targeted air routing in the system, the server rack is vertically divided into hot air and cold air zones by sealing the 19" level.

Proceed as follows to seal the 19" level:

- If the server rack is only partially configured, seal the open zones of the 19" level using blanking plates. Screw these tightly into the server rack from the rear.



Note:

Blanking plates in the various height units (U) and narrow air baffle plates are available from the Rittal accessory range.

5.2.3 Dismantle the rear server rack door

For buying the LCP Rear Door CW, the rear door of the server rack (if present) must be removed. Rather than the existing server door, the frame of the LCP Rear door CW is bayed to the server rack frame.

Proceed as follows to dismantle the server rack door:

- Release and open the server rack door.

5 Assembly and installation

EN



Note:

Support the server rack door so that it cannot fall during removal. If needed, work with a second person.

- Remove the rear door from the hinge, as appropriate for the installed rear door.

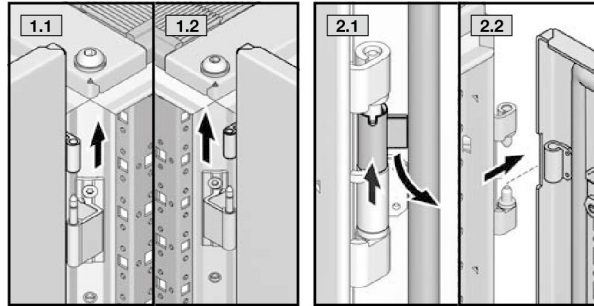


Fig. 15: Removing the rear door

Key

- 1 Vertically divided sheet steel door
- 2 One-part sheet steel door

- On each hinge, loosen the fastening screws used to secure it to the server rack.

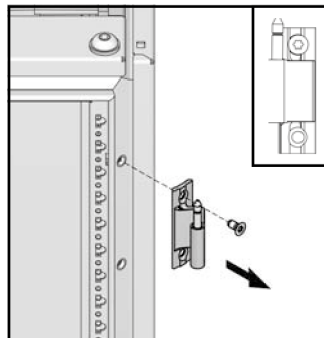


Fig. 16: Door hinge – dismantling

- Remove the rack hinges from the rear.

5.2.4 Fit the door latch mechanisms



Recommendation:

The following descriptions assume that the unit is installed in the standard version with the "door hinge on the right".

To lock the LCP Rear Door CW with the server rack, two locking pieces from the scope of supply are attached to the centre on the handle side.

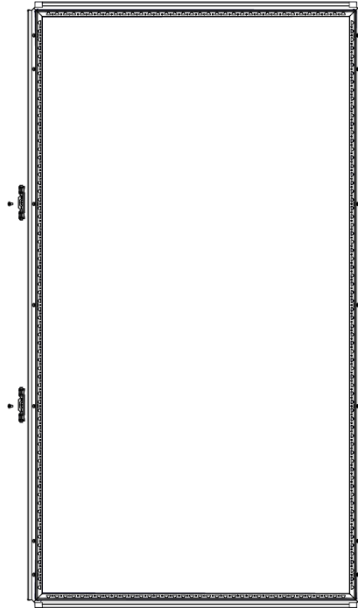


Fig. 17: Locking pieces

- Rotate the first locking piece so that the "L" marking is legible.
- Screw the locking piece through the bottom opening on one of the two middle mounting positions in the server rack.
- Similarly, attach the second locking piece to the handle side on the server rack.

5.2.5 Assembling LCP Rear Door CW



Warning! Risk of injury caused by toppling the unit!

Due to local conditions, it may not be possible to transport the unit lying flat to the installation site. In this case, the unit must be transported by at least two persons who secure it against toppling.



Caution! Danger of becoming trapped!

There is risk of being trapped between the server rack and the LCP Rear Door CW, particularly in the hinge area during assembly. Ensure that no limbs are in the danger area when the LCP Rear Door CW is being moved.



Caution! Danger of becoming trapped!

There is risk of being trapped between the server rack and the LCP Rear Door CW when screwing the components together. Ensure that no limbs are in the danger area.



Note:

The LCP Rear Door CW must be assembled by least two persons.

- When transporting the unit in an upright position, at least two persons must be assigned to ensure that the unit does not tip.
- Transport the LCP Rear Door CW to the immediate vicinity of the installation site and place it behind the server rack on which it should be assembled.

5 Assembly and installation

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While the unit is still lying, the assembly foot must first be fitted to the unit. To do this:

- Measure the distance from the floor to the lower, first hole on the rack to which the frame is attached later.
- Select from the three holes, the two that best match the distance (top or bottom).

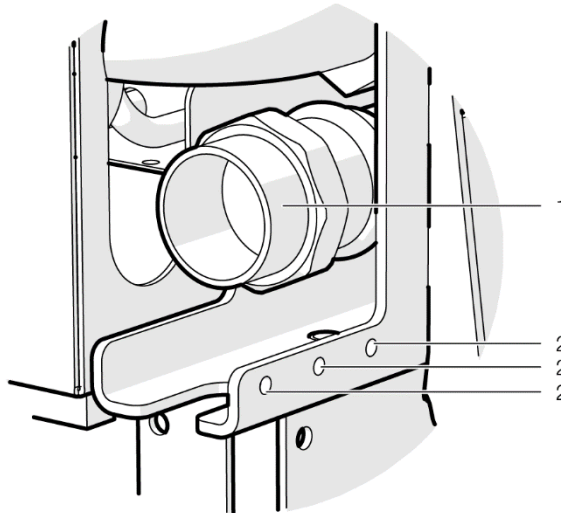


Fig. 18: Fastening point of the assembly foot (unit lying flat)

Key

- 1 Cooling water connection, return
- 2 Fastening points (3x)

- Mount the assembly foot bracket to the frame using two fastening screws.

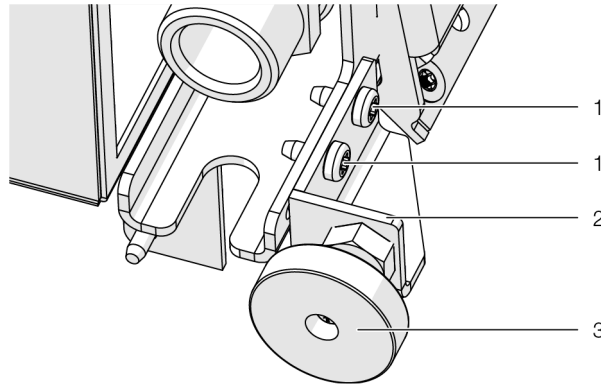


Fig. 19: Fastening the assembly foot (here the top position)

Key

- 1 Fastening screws (2x)
- 2 Assembly foot bracket
- 3 Assembly foot

- Finally, adjust the assembly foot on the thread to set the previously measured distance.

The two support brackets from the accessories bag must then be mounted to the top and bottom of the rack.

- Then mount the upper support bracket on the rack using four fastening screws.

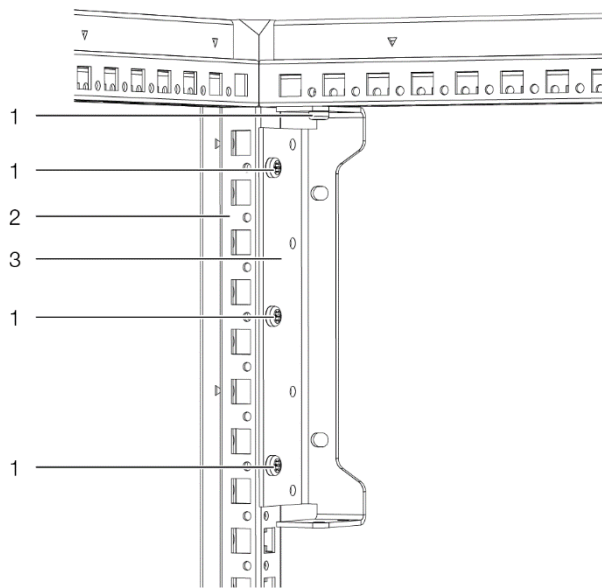


Fig. 20: Fastening the top support bracket to the rack

Key

- 1 Fastening screws (4x)
- 2 Server rack
- 3 Upper support bracket

■ Mount similarly the lower support bracket on the rack using four fastening screws.

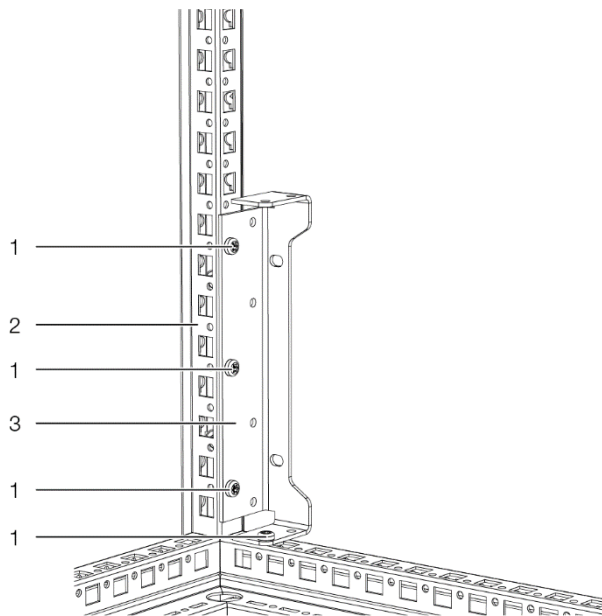


Fig. 21: Fastening the lower support bracket to the rack

Key

- 1 Fastening screws (4x)
- 2 Server rack
- 3 Lower support bracket

There is a transport castor at the bottom of the LCP Rear Door CW for safely swivelling the LCP Rear Door CW away from the server rack and back into the end position on the server rack.

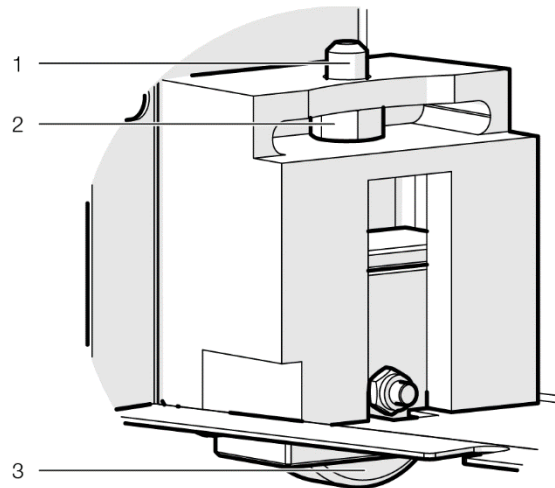


Fig. 22: Transport castor on the LCP Rear Door CW

Key

- 1 Threaded rod
- 2 M10 nut for setting the height
- 3 Transport castor

- Also adjust the position of the transport castor on the LCP Rear Door CW lying flat using the nut so that the castor is approximately level with the assembly foot.

In this position, the LCP Rear Door CW should later remain at the height of the server rack during the swivelling movement (i.e. it should neither rise nor sink).

The LCP Rear Door CW can then be mounted on the rack.

- Align the LCP Rear Door CW to the server rack with at least two persons.
- Rotate the LCP Rear Door CW so that the fastening points and the cooling water connections are on the right-hand side.
- Push the LCP Rear Door CW onto the server rack and align so that the four outer fastening points (item 1) of the LCP Rear door CW are flush with the corresponding openings in the server rack.

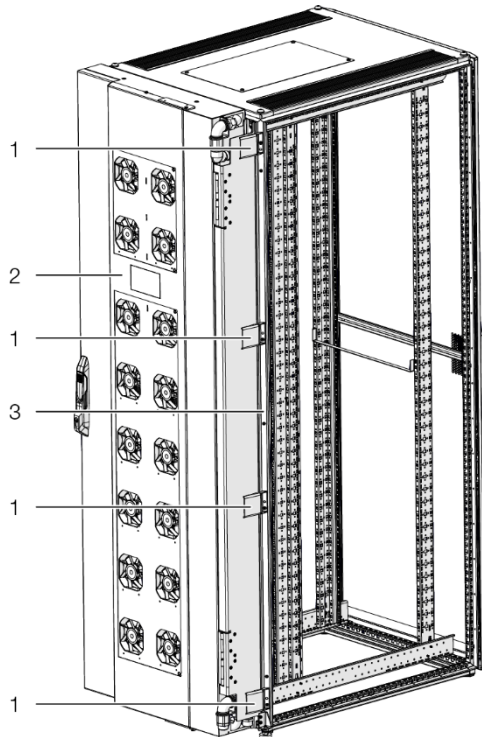


Fig. 23: Frame with four attachment holes of the LCP Rear Door CW

Key

- 1 Frame with four attachment holes
- 2 LCP Rear Door CW
- 3 Server rack

■ Screw the frame onto the four fastening points to which the standard server rack door hinges are attached.

The LCP Rear Door CW is also screwed to the inside of the server rack at the top and bottom.

■ Swing the LCP Rear Door CW away from the server rack to provide access to the rear of the server rack.

■ Fasten the frame at the top to the support bracket with two polystop nuts from the accessories.

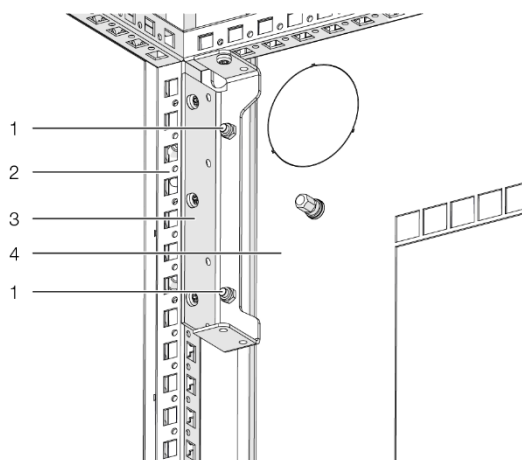


Fig. 24: Fastening the upper support bracket to the frame

Key

- 1 Polystop nuts (2x)
- 2 Server rack
- 3 Upper support bracket
- 4 LCP Rear Door CW (inside)

■ Fasten the frame at the bottom inside also with two polystop nuts from the scope of supply.

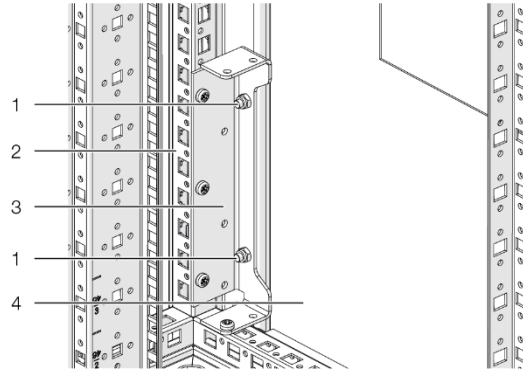


Fig. 25: Fastening the lower support bracket to the frame

Key

- 1 Polystop nuts (2x)
- 2 Server rack
- 3 Lower support bracket
- 4 LCP Rear Door CW (inside)

■ Ensure that the LCP Rear Door CW is in contact with the server rack.

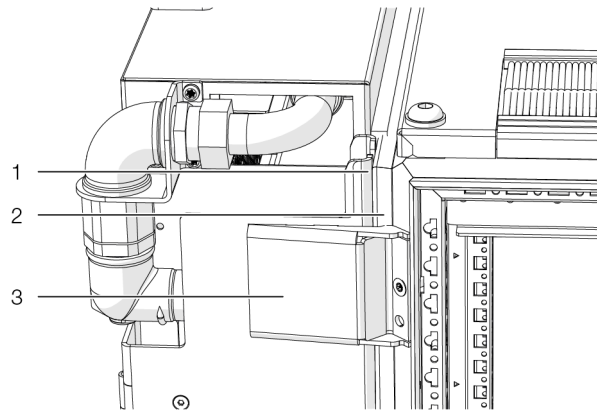


Fig. 26: Placing the LCP Rear Door CW on the server rack

■ Remove the assembly foot from the LCP Rear Door CW.

■ Establish an earthing connection between the LCP Rear Door CW and the rack frame as well as between the passive module and the service door.



Note:

Observe the information in the wiring plan (see section 10 "Wiring plan") when establishing the earthing connections.

5.3 Assembling the active module and the water module

Depending on the LCP Rear Door CW construction, the active module and, if necessary, the water module must be assembled after the actual unit has been assembled on the server rack. The necessary descriptions can be found in the detailed assembly, installation and operating instructions.

5.4 Placement of the pressure sensors

The closed-loop control of the fan speed with reference to the pressure difference requires at least one, maximum two, differential pressure sensors (7030.150). They are available from the Rittal accessory range.

- Assemble the differential pressure sensor in the server rack in accordance with the instructions supplied with the sensor.
- When assembling the associated air hoses, ensure that the two measuring points for reference pressure and comparison measurement are not in a direct air flow.
- Connect the pressure sensor to the CAN bus connection of the Climate Controller.

The sensor is then managed via the "Real Devices" in the tree on the LCP Rear Door CW web site.

6 Installation

6.1 Electrical connection

Electrical connection of the LCP Rear Door CW is necessary only when it is equipped with the optional active module as well as, if applicable, the water module.

General



Note:

Please keep this electrical documentation readily available so that it is always on hand when needed. This is the only documentation which is authoritative for the unit.



Caution!

Work on electrical systems or equipment may be performed only by a qualified electrician or by trained personnel under the guidance and supervision of a qualified electrician. All work must be performed in accordance with electrical engineering regulations.



Caution!

The unit may only be connected after the personnel mentioned above have read this information.



Caution!

Use only electrically insulated tools.



Caution!

Wear personal protective equipment.



Caution!

The connection regulations of the responsible power supply company must be observed.



Caution!

The voltage values shown in the wiring plan or on the rating plate must match the mains voltage.



Caution!

The pre-fuse specified in the wiring plan / rating plate should be provided to protect the cable and equipment from short-circuits. The unit must be individually fused.



Caution!

The unit must be connected to the mains via an isolating device which ensures at least 3 mm contact opening when switched off.



Caution!

The unit must be installed in accordance with national wiring regulations.



Caution!

The electrical installation must comply with the NEC and CEC standards for the USA and Canada.



Caution!

A line protection switch (external 16 A circuit-breaker) must be provided in the fixed wiring.



Caution!

No additional control equipment may be connected upstream of the unit at the supply end.



Note:

Complete separation is the contact separation of a pole to ensure the equivalent of basic insulation in accordance with IEC 61058-1 between the supply grid and the parts to be separated.

The electrical connection of the LCP Rear Door CW is made at the type C14 unit installation plug.

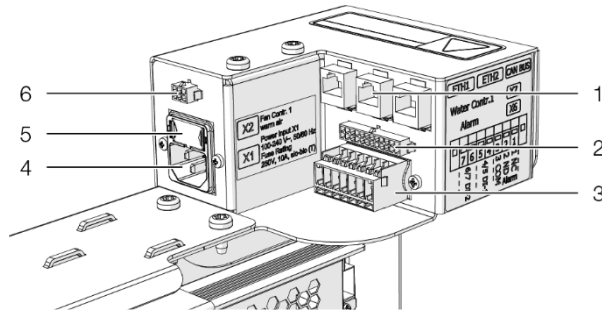


Fig. 27: Connections in the rear upper area

Key

- 1 Network connections and CAN bus RJ45 (ETH1, ETH2 and CAN bus)
- 2 Water module connection (X7)
- 3 Signal connector connection (X6)
- 4 IEC unit connector C-14 (X1)
- 5 Fuse holder
- 6 Hot air NTC sensors connection (X2)

- Connect a cable with a C13 socket to the unit installation plug.



Note:

All cables plugged into the LCP Rear Door CW must be secured to the housing with two cable ties as strain relief (jumper punchings).

6.2 Cooling water connection



Warning! Risk of being trapped when screwing on cooling medium pipes!

Wear personal protective equipment before beginning assembly and cleaning work!



Caution! Risk of malfunction or damage!

The cooling water medium necessary for the control system must be available throughout the entire operating time.



Caution! Risk of malfunction or damage!

It is vital that the manufacturer's consent is obtained before adding anti-freeze!

The LCP Rear door CW is connected to the cold water network via two DN 25 (AG 1") threaded pipe connections (external thread) on the inlet and return). As standard, the connection nozzles are positioned vertically downwards. In this instance, connection to the on-site cold water network is made in a downward direction, through a raised floor if present, or optionally initially on the water module. Alternatively, the connection can be made from the top of the unit.

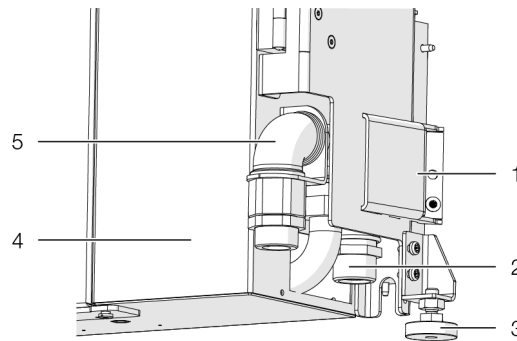


Fig. 28: Bottom cooling water connection

Key

- 1 Frame
- 2 Cooling water connection, return
- 3 Assembly foot (not yet dismantled here)
- 4 LCP Rear Door CW
- 5 Cooling water connection, inlet



Caution!

When installing, observe the applicable specifications concerning water quality and water pressure.



Recommendation:

Ideally, when using a water/glycol mixture, the LCP Rear Door CW is connected to the cooling water circuit via a water/water heat exchanger.

Benefit:

- Reduction of water volumes in the secondary circuit,
- Setting of a defined water quality,
- Setting of a defined inlet temperature and
- Setting of a defined volumetric flow.

6.3 Bleeding the air from the heat exchanger

A valve is fitted at both the uppermost and the lowermost point of the heat exchanger package in the LCP Rear Door CW. When the unit is delivered, both valves are fully closed; before commissioning, the unit should be bled using the vent valve at the uppermost point.



Warning! Danger of cut wounds, especially from the sharp edges of the heat exchanger module!

Wear personal protective equipment before beginning assembly and cleaning work!

Proceed as follows to bleed the unit:

- Swivel the LCP Rear Door CW service door away from the server rack. The vent valve is located at the top of the heat exchanger.

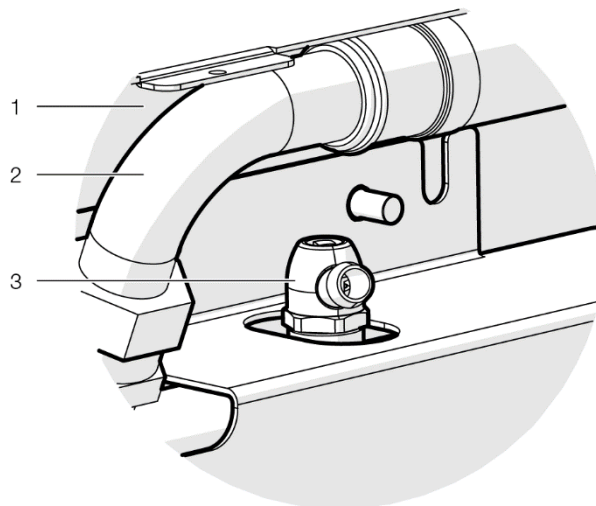


Fig. 29: Vent valve at the top of the heat exchanger

Key

- 1 LCP Rear Door CW
- 2 Cooling water pipe
- 3 Vent valve

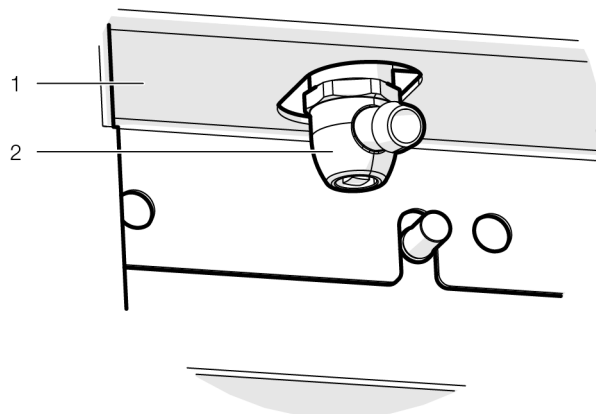


Fig. 30: Drain valve at the bottom of the heat exchanger

Key

- 1 LCP Rear Door CW
- 2 Drain valve

- Attach a vent hose (12 mm diameter) to the upper vent valve.
- Position a collecting vessel underneath the open end of the vent hose to collect any escaping water.
- Open the vent valve with a square key (5 mm) until the hiss of escaping air can be heard.
- Wait until water escapes from the vent hose, then close the valve again fully.
- Then open the vent valve again slightly and check whether any more air escapes.
- If so, keep the vent valve open until water escapes again.
- Repeat this process until there are no bubbles visible in the vent hose for a significant period of time, ensuring that there is no air left in the system.
- Once bleeding is complete, remove the vent hose again.

7 Operation on the display (optional)

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- Close the LCP Rear Door CW service door and lock it.



Note:

The system is usually bled during the course of commissioning. This process may need to be repeated if the unit does not supply the desired cooling output



Note:

The heat exchanger can be completely drained at the lower drain valve (e.g. for storage below freezing point).

7 Operation on the display (optional)

The LCP Rear Door CW (with active module) can also be equipped with a display as option. The unit can be operated directly on this display.



Fig. 31: "Home" screen page

Key

- 1 Main part of the screen page
- 2 Switch to the "Info" screen page
- 3 Switch to the "Configuration" screen pages
- 4 Switch to the "Door opening" screen page
- 5 Switch to the "Coolant circuit" screen pages (cooling medium)
- 6 Switch to the "Air circuit" screen pages (air circuit and fan)
- 7 Switch to the "Home" screen page

The corresponding submenus from each screen page can be accessed by buttons at the bottom of the display. The submenu provides detailed information on the associated area and the unit can be configured.

8 Storage and disposal



Caution! Risk of malfunction or damage!

During storage and transportation below freezing point, the water circuit should be drained completely using compressed air!

During storage, the air/water heat exchanger must be laid flat.

Disposal can be performed at the Rittal plant.

- Please contact us for advice.

Draining:

During storage and transportation below freezing point, the air/water heat exchanger should be drained completely.



Caution! Risk of environmental contamination!

If a water-glycol mixture is deployed, it must be disposed of in accordance with the applicable regional regulations.

9 Technical specifications

9.1 Output class 15 kW

Technical specifications	
Description/Model No.	LCP Rear Door CW / 3314.615 (height 2000 mm, width 600 mm)
Description/Model No.	LCP Rear Door CW / 3314.625 (height 2200 mm, width 600 mm)
Description/Model No.	LCP Rear Door CW / 3314.815 (height 2000 mm, width 800 mm)
Description/Model No.	LCP Rear Door CW / 3314.825 (height 2200 mm, width 800 mm)
Dimensions and weight	
Depth [mm]	180
Usable U	42
Opening angle of door	180°
Weight [kg]	Height 2000 mm, width 600 mm: 70 Height 2200 mm, width 600 mm: 75 Height 2000 mm, width 800 mm: 80 Height 2200 mm, width 800 mm: 90
Cooling circuit	
Cooling medium	Saline and low-salinity water based on VDI 2035 plus max. 50 volume percent Antifrogen-N
Cold water inlet temperature [°C]	+10...+30 and at least 3 K above the dew points of the ambient and flowing air
Permissible operating pressure PS1 [bar]	10
Fill quantity of heat exchanger [l]	8
Volumetric flow of water [l/min]	0...80
Water connection	DN 25 (AG 1")
Rated cooling output	
Cooling output, sensitive [kW]	15
Air volumetric flow [m³/h]	2550 (air from IT equipment)
Room air temperature [°C]	+24 (LCP Rear Door CW air outlet temperature)
Relative humidity [%]	43

9 Technical specifications

EN

Technical specifications	
Other specifications	
Ambient operating temperature range [°C]	10...50
Sound pressure level	Depends on the installed equipment of the server rack.
Degree of protection	IP 10B
Colour	RAL 7035 and RAL 9005, finely textured matt (service door)

Tab. 4: 15 kW output class technical specifications

9.2 30 kW output class (with active module)

Technical specifications	
Description/Model No.	LCP Rear Door CW / 3314.630 (height 2000 mm, width 600 mm)
Description/Model No.	LCP Rear Door CW / 3314.650 (height 2200 mm, width 600 mm)
Description/Model No.	LCP Rear Door CW / 3314.830 (height 2000 mm, width 800 mm)
Description/Model No.	LCP Rear Door CW / 3314.850 (height 2200 mm, width 800 mm)
Dimensions and weight	
Depth [mm]	180
Usable U	42
Opening angle of door	180°
Weight [kg]	Height 2000 mm, width 600 mm: 75 Height 2200 mm, width 600 mm: 80 Height 2000 mm, width 800 mm: 85 Height 2200 mm, width 800 mm: 95
Cooling circuit	
Cooling medium	Saline and low-salinity water based on VDI 2035 plus max. 50 volume percent Antifrogen-N
Cold water inlet temperature [°C]	+10...+30 and at least 3 K above the dew points of the ambient and flowing air
Permissible operating pressure PS1 [bar]	10
Fill quantity of heat exchanger [l]	8
Volumetric flow of water [l/min]	0...80
Water connection	DN 25 (AG 1")
Rated cooling output	
Cooling output, sensitive [kW]	30
Air volumetric flow [m ³ /h]	5000 (air from IT equipment)
Room air temperature [°C]	+24 (LCP Rear Door CW air outlet temperature)
Relative humidity [%]	43

Technical specifications	
Other specifications	
Ambient operating temperature range [°C]	10...50
Sound pressure level	Depends on the installed equipment of the server rack.
Degree of protection	IP 10B
Colour	RAL 7035 and RAL 9005, finely textured matt (service door)

Tab. 5: 30 kW output class technical specifications

9.3 Active module

Technical specifications	
Description/Model No.	Active module for LCP Rear Door CW / 3314.020 (height 2000 mm)
Description/Model No.	Active module for LCP Rear Door CW / 3314.025 (height 2200 mm)
Rated voltage [V]	100...240 V/1~
Rated frequency [Hz]	50/60
Rated input [kW]	0.47
Full-load amperes [A]	4.8 – 2.0
Dimensions and weight	
Depth [mm]	123
Weight [kg]	Height 2000 mm: 19 Height 2200 mm: 20
Other specifications	
Ambient operating temperature range [°C]	10...50
Sound pressure level at 1 m distance	Depends on the installed equipment of the server rack. However, max. 78 dB(A) with 16 BLDC fans / I/O board / display (optional) at 100% speed and 71 dB(A) at 50% speed.
Sound power level	87 dB(A) at 100% speed, 77 dB(A) at 50% speed.
Degree of protection	IP 2X
Colour	RAL 9005 fine texture matt

Tab. 6: Active module technical specifications

9.4 Water module

Technical specifications	
Description/Model No.	Water module for LCP Rear Door CW / 3314.635
Rated voltage (DC) [V]	24

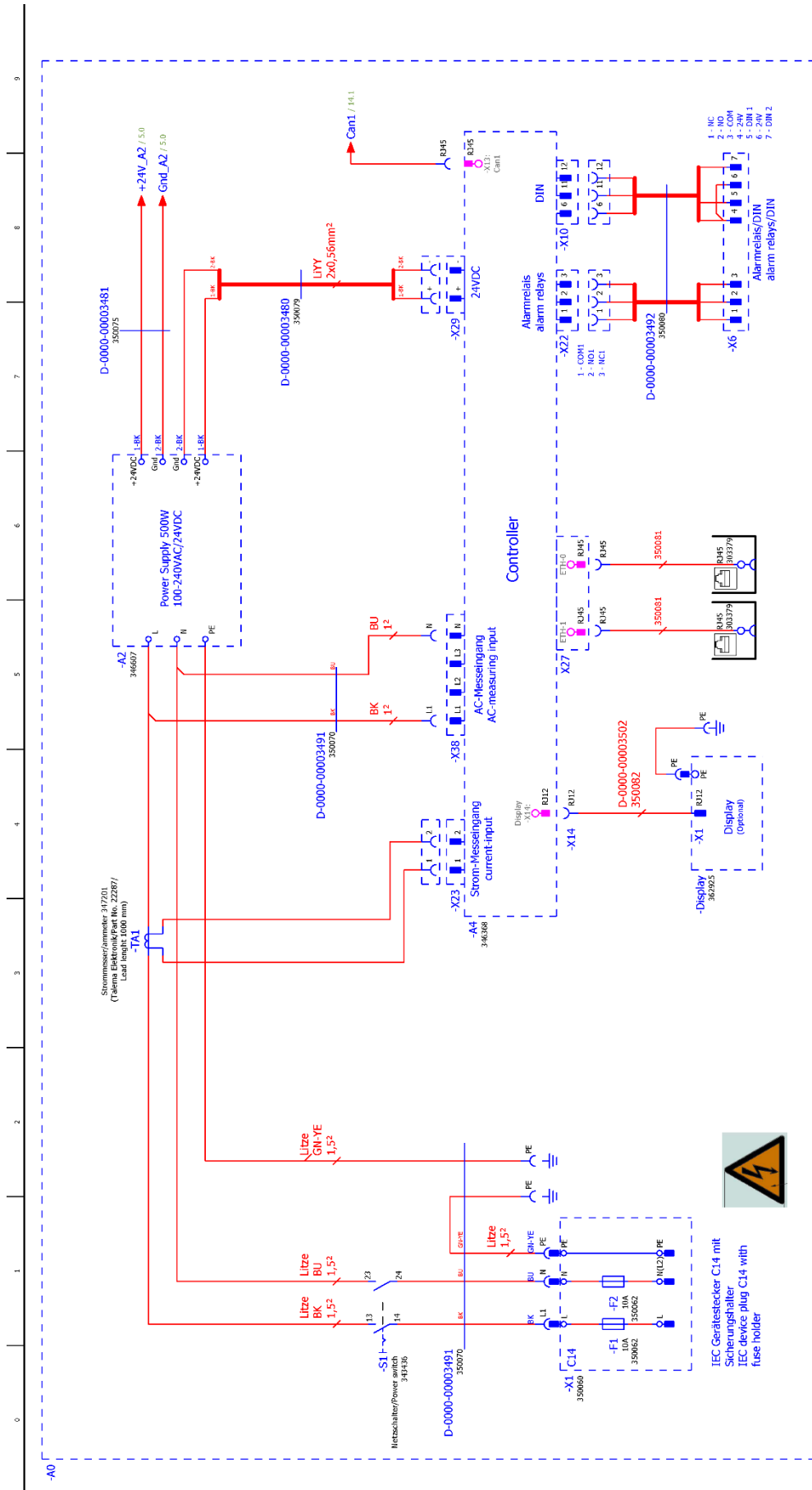
9 Technical specifications

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Technical specifications	
Rated input [kW]	0.01
Full-load amperes [A]	0.40
Dimensions and weight	
Width x height x depth [mm]	340 x 184 x 502
Weight [kg]	10
Other specifications	
Ambient operating temperature range [°C]	10...55
Degree of protection	IP 54
Colour	RAL 7035

Tab. 7: Water module technical specifications

10 Wiring plan

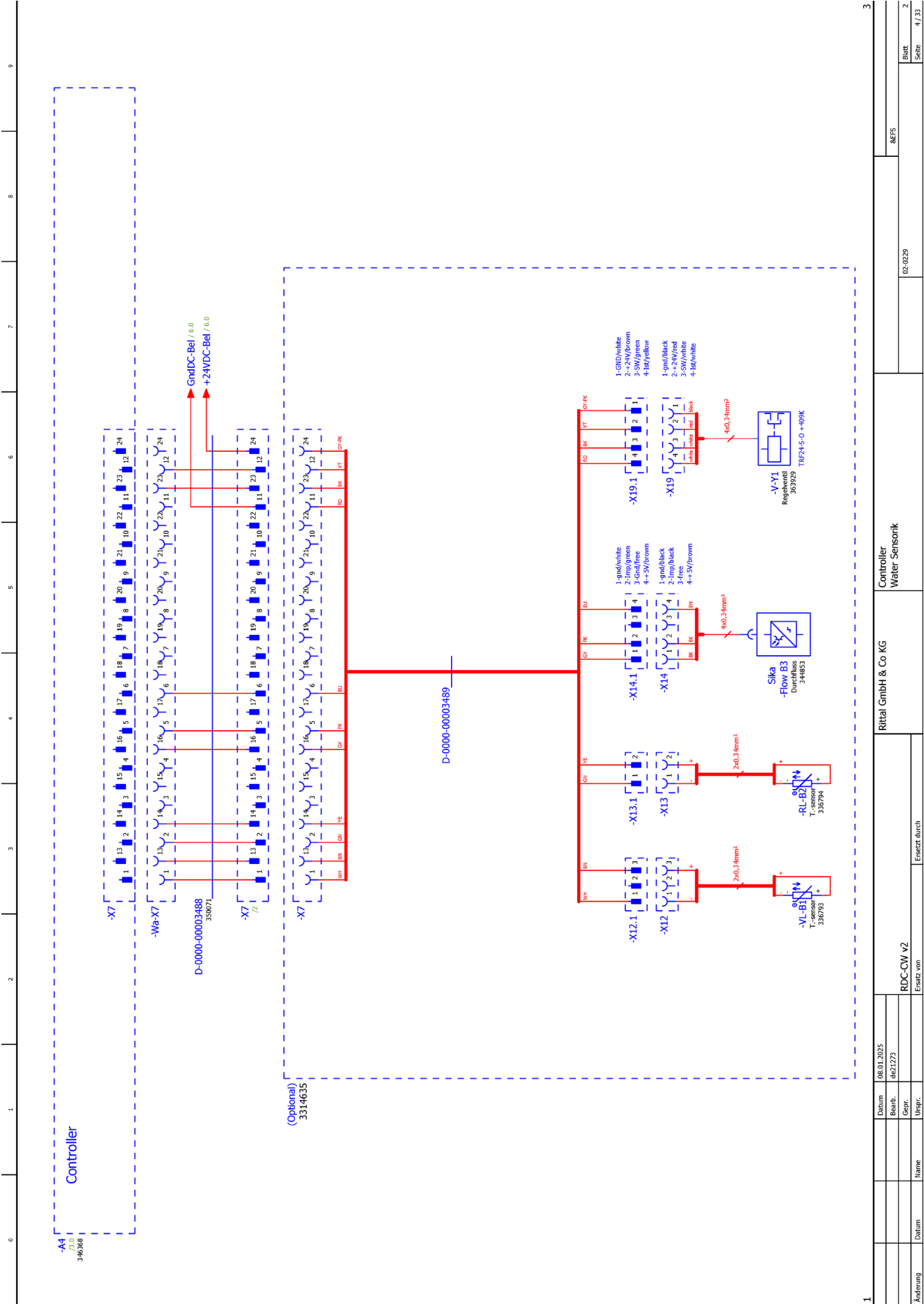


Kundenseite/Customer page
 Nennspannung/nominal voltage U = 1~ 100-240VAC, 50/60Hz; L1, N, PE/L1+L2+PE
 Full Load Amperage (FLA): 4.8A/115VAC, 2.4A/230VAC
 Versicherung/Inlet fuse: 10A
 Elektrische Leistung/Electrical power P = 500W
 Überspannungskategorie/Overvoltage category II
 Bemessungsstromspannung Uimp = 4000 V
 Bemessungsisolationsspannung/rated surge voltage Ui = 500 V
 Geräteserien/Device Series:
 LCP Rear Door CW, Gen 1

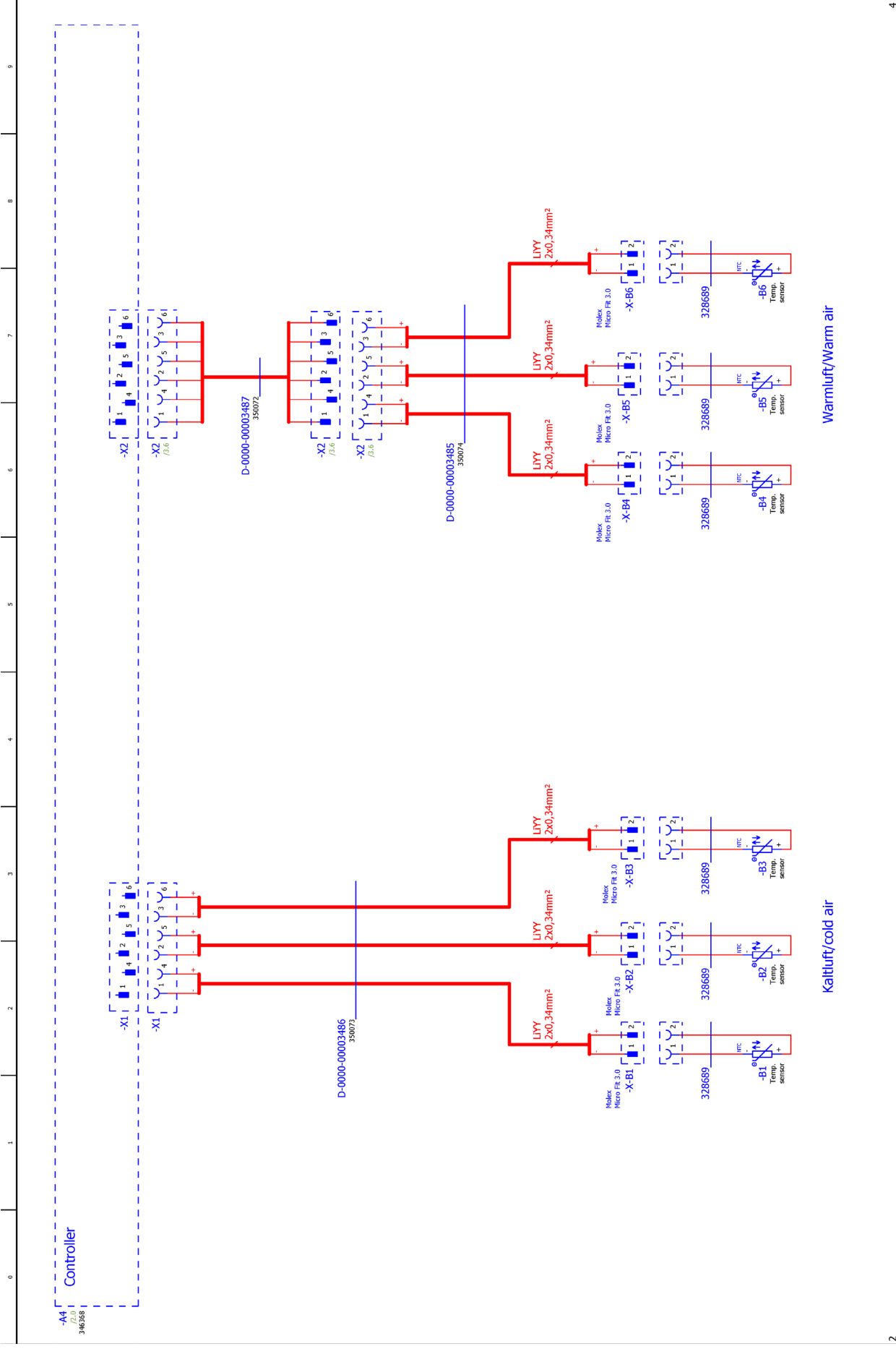
Rittal GmbH & Co KG		AC Power Supply	
RDC-CW v2		09.02.2019	
Ersatz von		Ersatz durch	
Datum	28.01.2025	RIF/S	
Bearb.	dl21273	Blatt	
Gepr.		Seite	
Usg.		1 / 33	

10 Wiring plan

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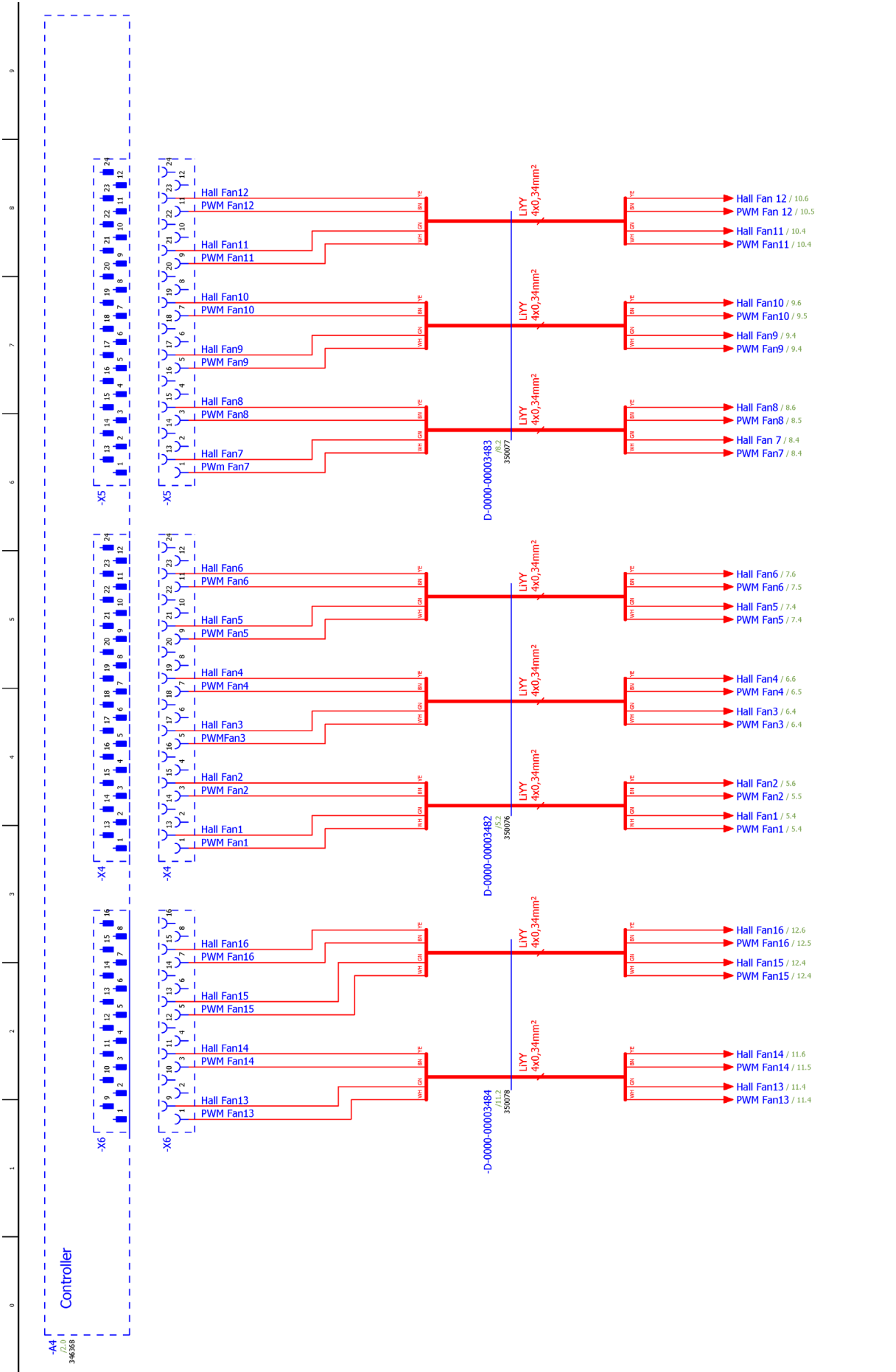
1		3		3	
Änderung	Datum	Rittal GmbH & Co KG		Controller Water Sensorik	
		RDC-CW v2		100-0029	
		Ersetzt von		Blatt	
				Seite	
				4 / 13	
				REF5	
				100-0029	
				Blatt	
				Seite	
				4 / 13	



2		Rittal GmbH & Co KG		Controller Temperatur WL/KL		02-0229		8EFS	
3		RDC-CW v2		Ersatz von		Ersetzt durch		Blatt Seite 3	
4		27.09.2024		4e21273				Seite 5/33	
Datum		Bearb.		Gepr.		Urspr.			
Änderung		Datum		Name					

10 Wiring plan

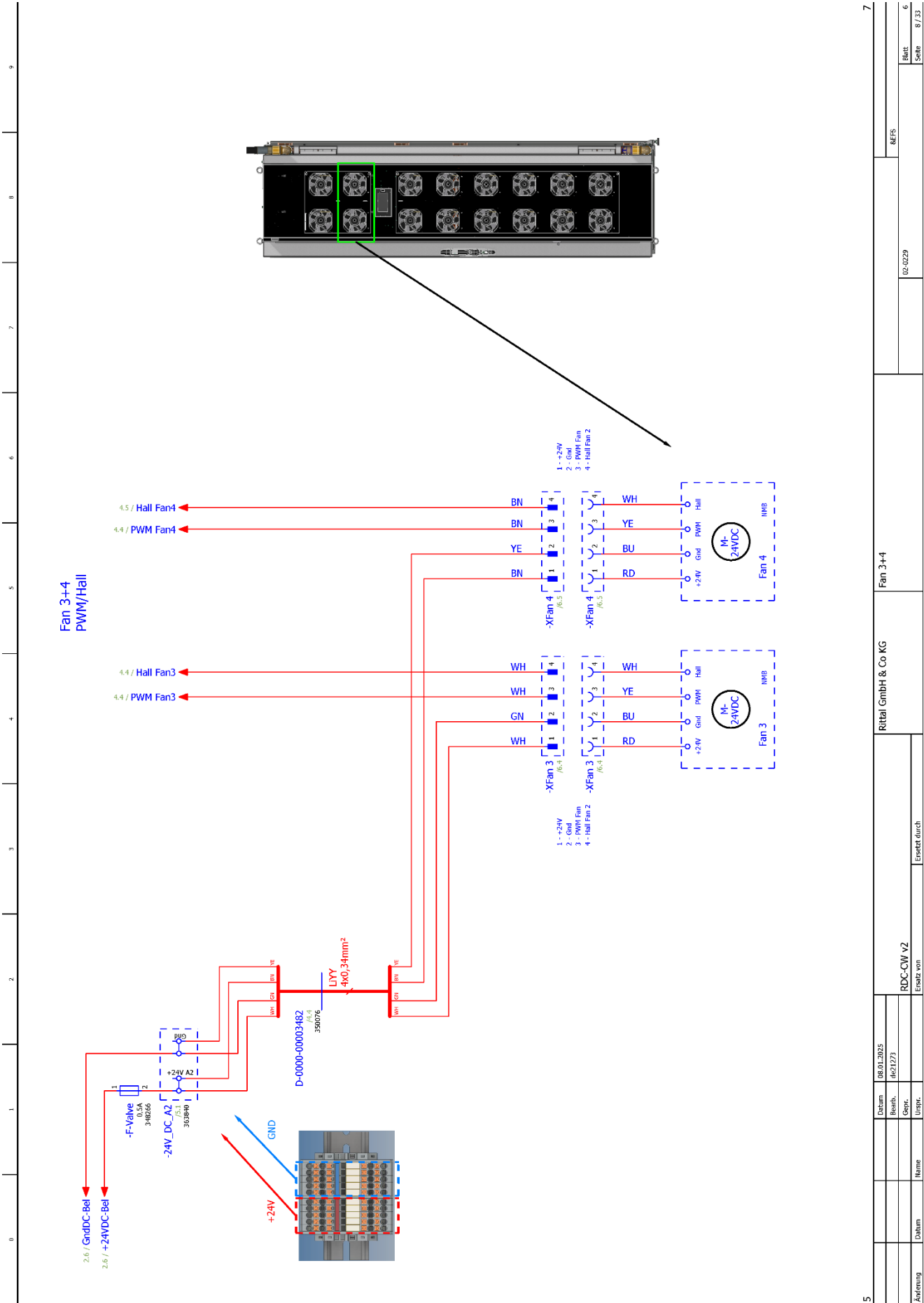
EN



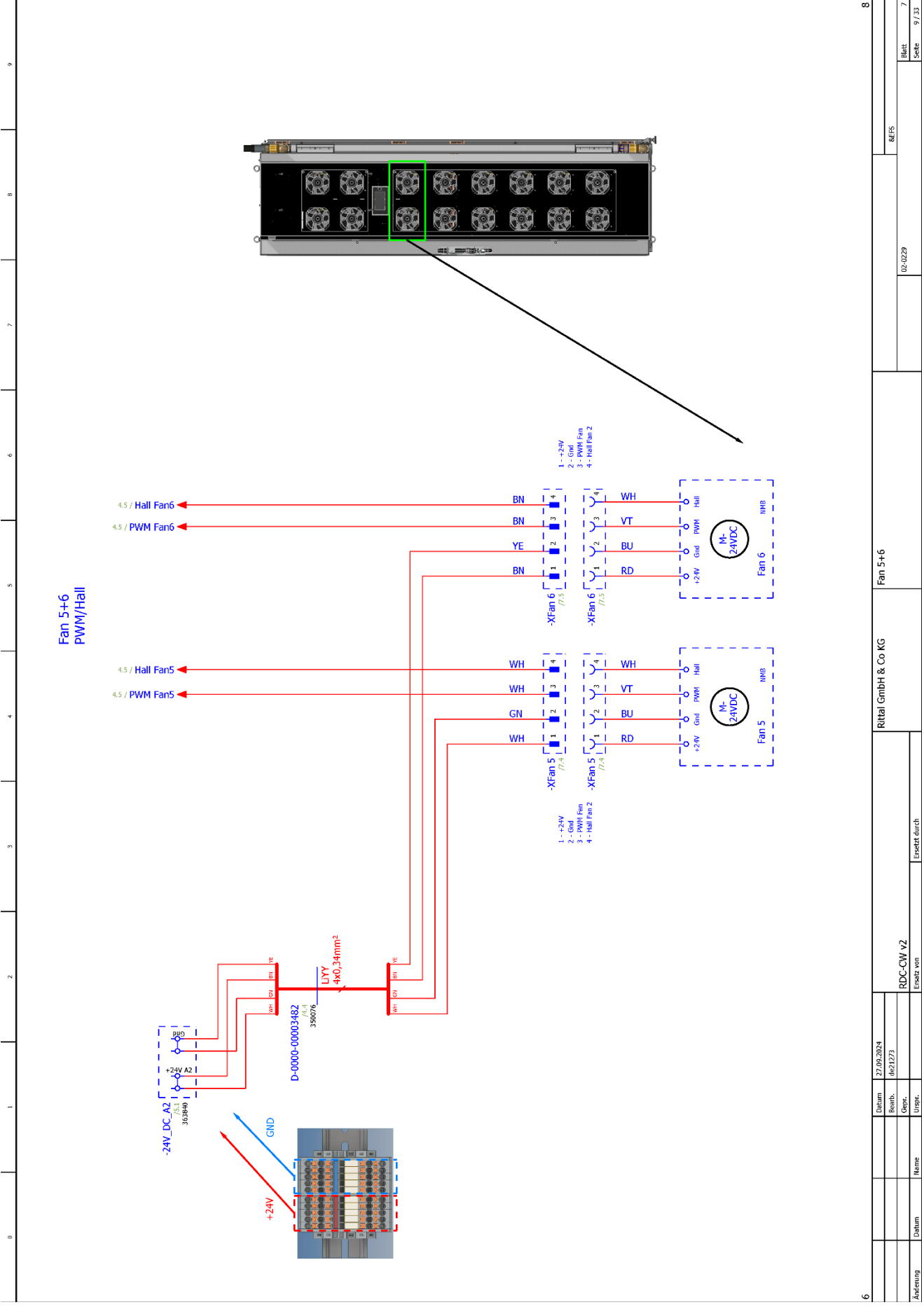
3		Rittal GmbH & Co KG		Controller Lüfter PWM/Hall		102-0229		8EFS		5	
Datum		27.09.2024		RDC-CW v2		Ersetzt von		Blatt		4	
Bearb.		462123		Ersetzt durch				Seite		6 / 31	
Gepr.											
Uspr.											
Änderung		Datum		Name							

10 Wiring plan

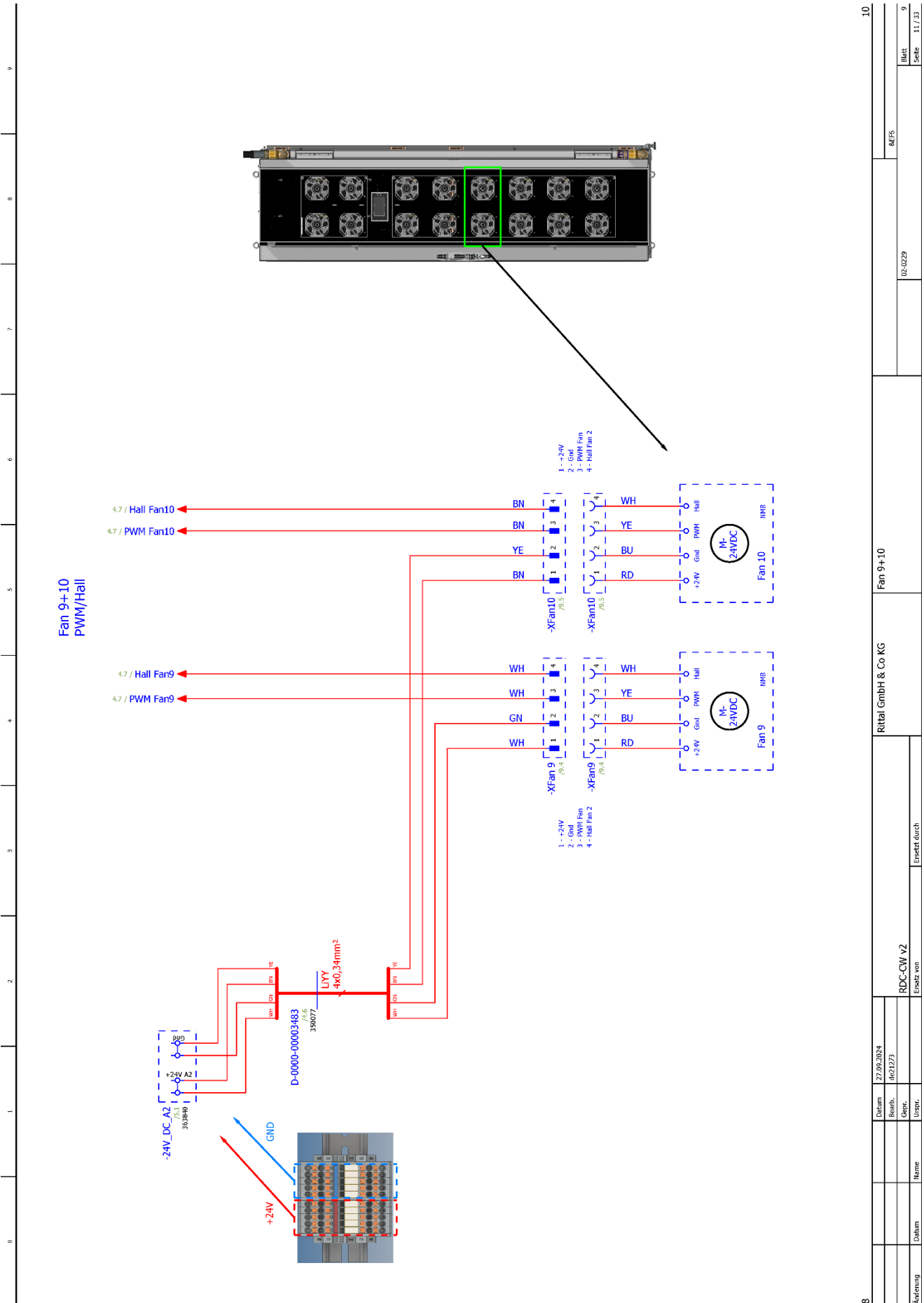
EN



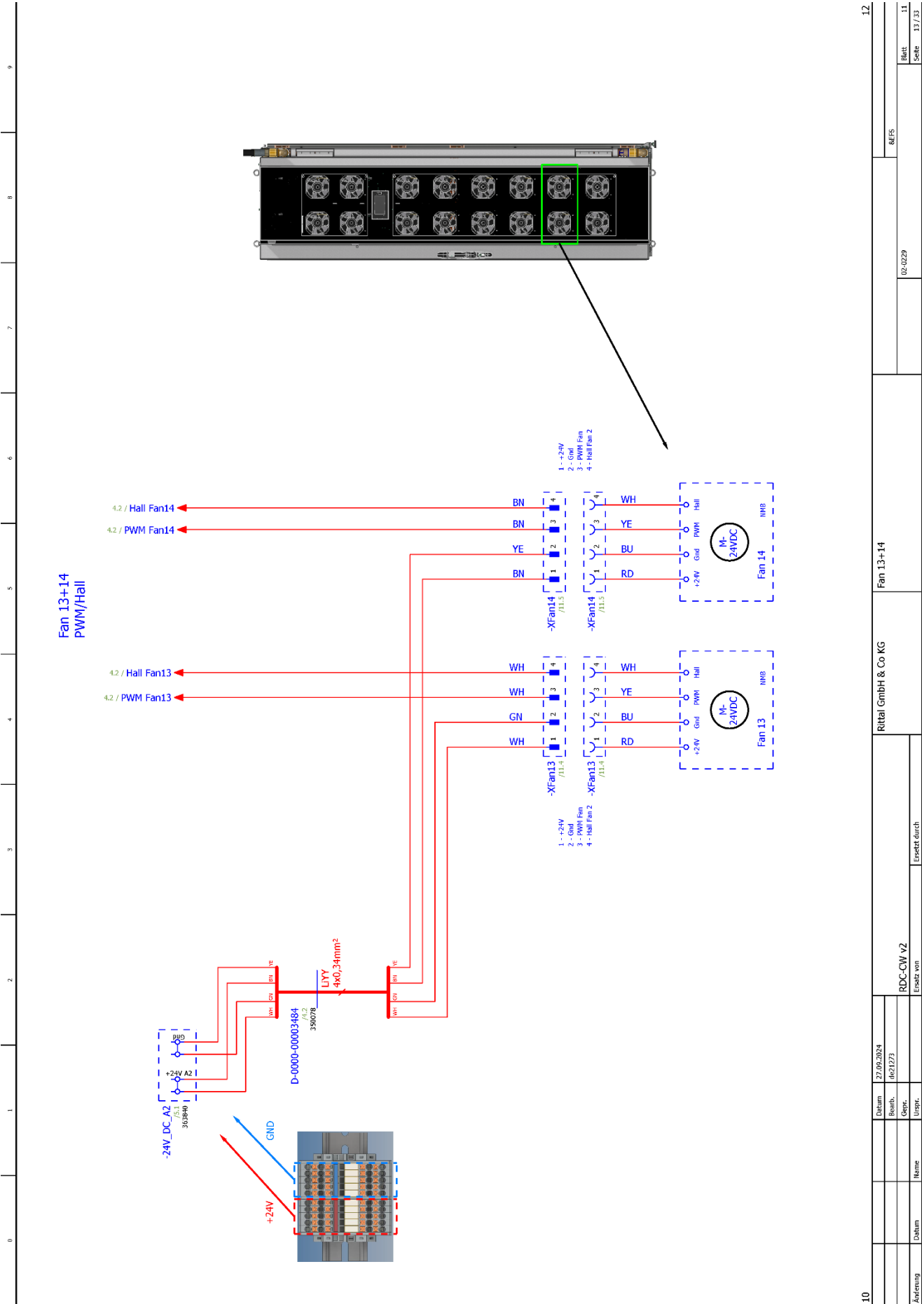
5		Rittal GmbH & Co KG		Fan 3+4		8EF5	
Datum	08.01.2025	Erstellt durch		102-0229		Blatt 6	
Reimb.	11021273	Ersatz von		RDC-CW v2		Seite 8/33	
Genr.							
Umrp.							
Datum							
Name							



6		8		9	
Änderung	Datum	Home	Urspr.	Gepr.	Bearb.
Rittal GmbH & Co KG			Fan 5+6		
RDC-CW v2			Ersatz von		
27.09.2024			02.02.2019		
de/12/3			8EFS		
			Blatt		
			Seite		
			7		
			9 / 33		

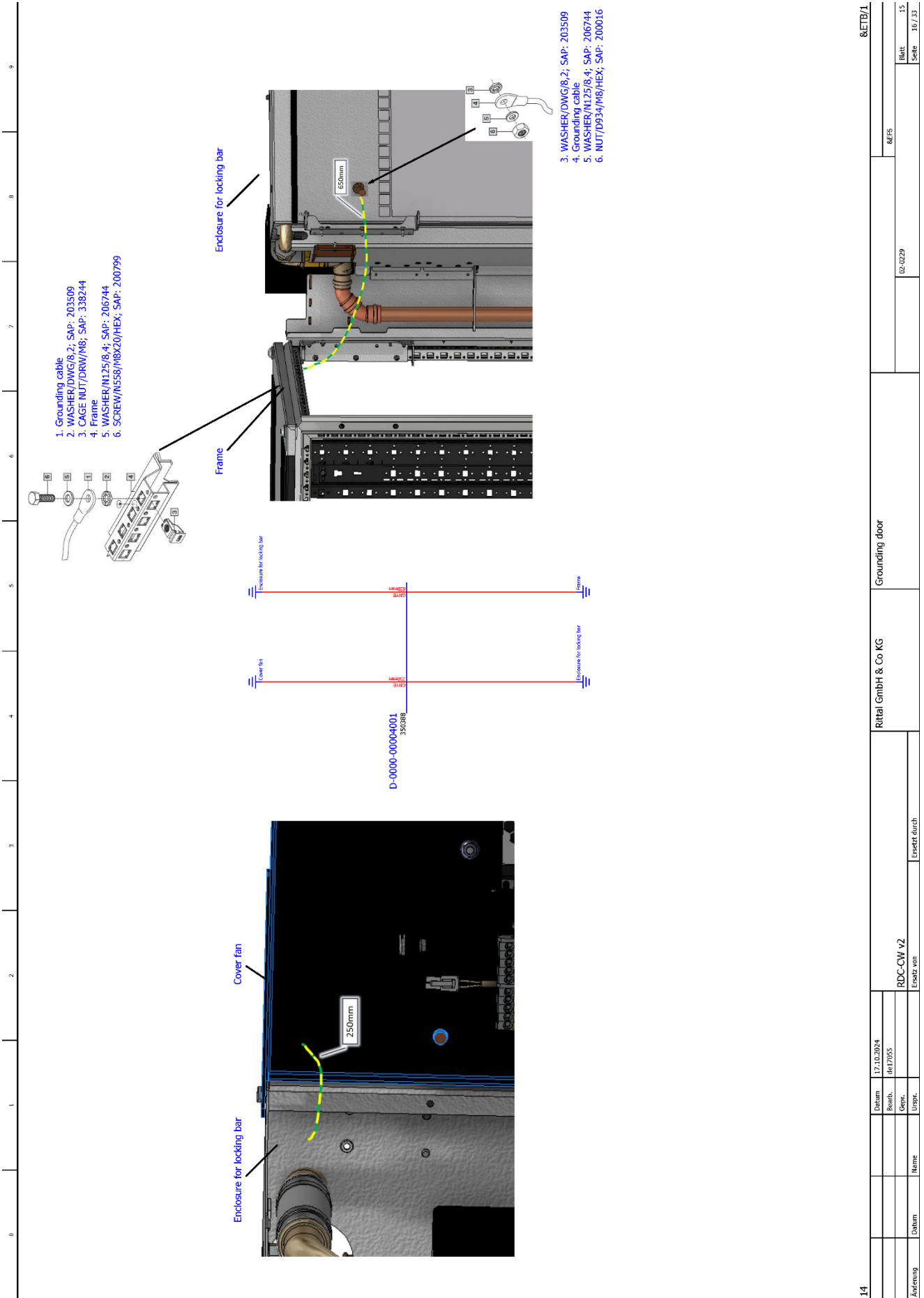


8	Rittal GmbH & Co KG		Fan 9+10	
Änderung	Datum	Urspr.	Gepr.	Bearb.
				27.09.2024
				de/12/3
				RDC-CW v2
				Ersatz von
				Ersetzt durch
				02-0229
				8EFS
				Blatt
				9
				Seite
				11 / 33



10 Wiring plan

EN



11 Warranty

The terms of sale and delivery of the individual Rittal sales agencies and subsidiaries apply.

12 Customer service addresses

Contact details can be found on the Rittal website at:

– <https://www.rittal.com/rittal-locations>



13 Declaration of conformity

Vereinfachte EU-Konformitätserklärung / Simplified EU Declaration of Conformity



Wir
We

Rittal GmbH & Co. KG, Auf dem Stützelberg, 35745 Herborn

Erklären hiermit, dass die Produkte
hereby declare that the products

LCP Rear Door CW Passivmodul / Passive-Module

SK 3314.615, SK 3314.630, SK 3314.625, SK 3314.650, SK 3314.815, SK 3314.830, SK 3314.825,
SK 3314.825

SK Wassermodule für LCP Rear Door CW / SK Water Module for LCP Rear Door CW

SK 3314.635
(Artikel gemäß dieser Anleitung
Types referenced in this manual)

folgenden Richtlinien entsprechen:
conform to the following Directives:

Maschinenrichtlinie 2006/42/EG - Machinery Directive 2006/42/EC

EMV-Richtlinie 2014/30/EU - EMC Directive 2014/30/EU

Bei einer nicht mit uns abgestimmten Änderung des Produkts verliert diese EU-Konformitätserklärung
ihre Gültigkeit.
This EU declaration of conformity shall become null and void when the product is subjected to any
modification that has not met with our approval.

Die vollständige und unterschriebene EU-Konformitätserklärung erhalten Sie auf der Produktseite der
Rittal Homepage www.rittal.com.
The complete and signed declaration of conformity can be obtained from the product site of rittals
homepage www.rittal.com

SCHALTSCHRÄNKE

STROMVERTEILUNG

KLIMATISIERUNG

IT-INFRASTRUKTUR

SOFTWARE & SERVICE

FRIEDHELM LOH GROUP

Vereinfachte EU-Konformitätserklärung / Simplified EU Declaration of Conformity



Wir
We

Rittal GmbH & Co. KG, Auf dem Stützelberg, 35745 Herborn

Erklären hiermit, dass die Produkte
hereby declare that the products

LCP Rear Door CW Aktivmodul / Active-Module

SK 3314.020, SK 3314.025
(Artikel gemäß dieser Anleitung
Types referenced in this manual)

folgenden Richtlinien entsprechen:
conform to the following Directives:

Niederspannungsrichtlinie 2014/35/EU - Low Voltage Directive 2014/35/EU

EMV-Richtlinie 2014/30/EU - EMC Directive 2014/30/EU

Bei einer nicht mit uns abgestimmten Änderung des Produkts verliert diese EU-Konformitätserklärung ihre Gültigkeit.
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- Power Distribution
- Climate Control
- IT Infrastructure
- Software & Services

You can find the contact details of all Rittal companies throughout the world here.



www.rittal.com/contact

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04.2025 / D-0000-00004962-00-EN

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