

# Rittal – The System.

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## Enclosure heater



## Assembly and operating instructions

ENCLOSURES

POWER DISTRIBUTION

CLIMATE CONTROL

IT INFRASTRUCTURE

SOFTWARE & SERVICES

FRIEDHELM LOH GROUP



# Contents

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EN

## Contents

1	Notes on documentation.....	3
1.1	Other applicable documents.....	3
1.2	CE certification .....	3
1.3	Retention of documents .....	3
1.4	Symbols used .....	3
2	Safety instructions.....	3
3	Product description.....	3
3.1	Functional description.....	3
3.1.1	How it works .....	3
3.1.2	Control .....	4
3.2	Intended use .....	4
3.3	Scope of supply .....	4
4	Mounting.....	4
5	Electrical connection .....	4
6	Storage and disposal .....	4
7	Warranty .....	5
8	Technical specifications.....	5
9	Appendix .....	6

## 1 Notes on documentation

These assembly instructions are aimed at

- tradespersons who are familiar with assembly and installation of the heater.
- trained specialists who are familiar with operation of the heater.

### 1.1 Other applicable documents

Assembly and operating instructions exist as paper documents for the unit types described here and are enclosed with the equipment.

We cannot accept any liability for damage associated with failure to observe these instructions. Where applicable, the instructions for any accessories used also apply.

### 1.2 CE certification

The declaration of conformity is supplied with the unit as a separate document.

### 1.3 Retention of documents

These instructions and all associated documents constitute an integral part of the product. They must be given to the plant operator. The operator is responsible for storage of the documents so they are readily available when needed.

### 1.4 Symbols used



**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:**  
Important notices and indication of situations which may result in material damage.

- This symbol indicates an "action point" and shows that you should perform an operation or procedure.

## 2 Safety instructions

- When performing the electrical installation, it is important to observe all valid national and regional regulations as well as the provisions of the responsible electrical supply company.

- Electrical installation must only be carried out by a qualified electrician who is responsible for compliance with the existing standards and regulations.
- Use only original spare parts!
- The heater must not be touched while switched on. Risk of burns from hot surfaces! The heater must be allowed to cool for approx. 15 minutes after switching off.



**Caution!**  
Risk of burns from hot surfaces!

## 3 Product description

Depending on the model chosen, your heater may vary in appearance from the illustrations contained in these instructions. However, the functions are identical in principle.

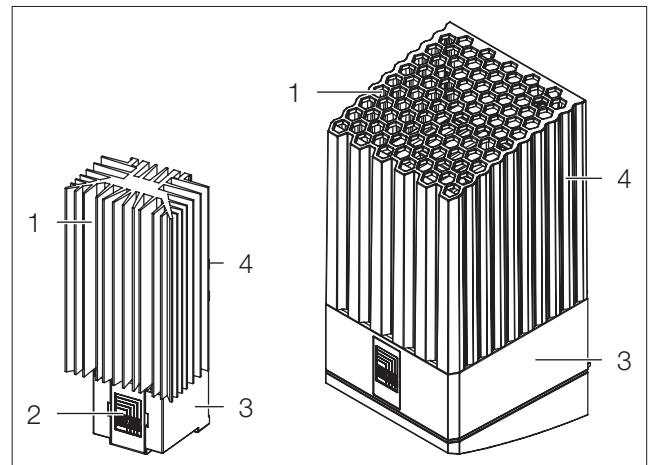


Fig. 1: Product description

### Key

- |   |  |
|---|--|
| 1 | Aluminium section (without fan) or heater housing (with fan) |
| 2 | Protective cover for electrical connection                   |
| 3 | Base plate   |
| 4 | Fixing points  |

### 3.1 Functional description

Heaters are used to prevent the formation of condensation inside the enclosure and maintain a constant minimum operating temperature (e.g. when the system is switched off overnight). Rittal heaters achieve thermal outputs of 8 to 870 watts.

#### 3.1.1 How it works

The heaters are comprised of the following main components:

##### Heaters without fan

- Aluminium section
- PTC heater element

##### Heaters with fan

- PTC heat register
- Fan

### 3.1.2 Control

A separate thermostat (3110.000) or digital temperature controller (3114.200) can be connected to control the temperature in the enclosure. The humidity of the air in the enclosure can be controlled by incorporating a hygostat (3118.000).

A thermostat must be connected upstream of the 3105.370 heater. The temperature set on this thermostat must not exceed 30 °C.

### 3.2 Intended use

Rittal heaters were developed and designed in accordance with the state of the art and the recognised rules governing technical safety. Nevertheless, if used improperly, they may pose a threat to life and limb or cause damage to property. The heater is designed to heat closed enclosures that are only accessible by trained specialists. The heater may be deployed only within the temperature range stated in the technical specifications. The maximum ambient temperature for UL 508A applications deviates as +40 °C for all heaters. Rittal GmbH & Co. KG is not liable for any damage which may result from failure to comply with the documentation provided. The same applies to failure to comply with the valid documentation for any accessories used.

### 3.3 Scope of supply

The heater is supplied in one packaging unit.

Model No.	Qty.	Designation
3105.310 – 3105.370	1	Base plate
	1	Aluminium section
	1	Cover cap
	1	Assembly and operating instructions
	1	Assembly parts (see fig. 2)
3105.310 – 3105.370	1	Heater (pre-assembled)
	1	Assembly and operating instructions
		Assembly parts (see fig. 2)

Tab. 1: Scope of supply

## 4 Mounting

The heater is fitted vertically, i.e. with the connection terminal or fan facing downwards. To permit the required convection, a minimum clearance to the adjacent components must be observed. A safety clearance of at least 300 mm must be left at the air outlet in the case of heaters with fans, and 100 mm for heaters without fans. (For both heaters a thermal safety clearance to the sides of 60 mm and 100 mm at the bottom is required). If these clearances are observed, the ambient temperature at the air inlet does not rise above 65 °C.

There are two different methods of mounting the heater:

1. Snap-type fastening onto a 35 mm support rail EN 60715 (fig. 2).
2. Screw fastening onto the mounting plate (fig. 3). It should be ensured that the heater and connection cables are mounted firmly and securely. Electric cables must not touch the body of the heater fan and must not be routed directly past the hot air outlet. The heater must not be mounted in the vicinity of flammable materials.



**Note:**

In justified, exceptional cases, heaters with fan (235 - 870 W) may be installed rotated through 180°.

Please note that, in case of mounting on a 35 mm support rail, the mounting clips must also be rotated through 180°.

## 5 Electrical connection

The heater must be connected, via the quick-connect terminals, to a power supply of the voltage stated on the rating plate.

The heater must be connected to the mains via an all-pole isolating device in accordance with the over-voltage category III to EN 60664-1 (min. 3 mm contact opening must be ensured when switched off). The electrical connection must be made with solid copper cables (max. 2.5 mm<sup>2</sup>) or with stranded wires and wire end ferrules.

Slow-blowing fuse-links (gG) or circuit breakers with a corresponding delayed-trip characteristic can be used as pre-fuses. The required pre-fuse rating is specified on the rating plate. Overvoltage protection is to be provided where pulse loads exceeding 1,000 V are possible. The double connection terminal permits the cascading of several heaters and thus simplifies wiring. In such cases, it may be necessary to adapt the pre-fuse rating to accommodate the total start-up current. The maximum switching capacity of the devices must nevertheless be observed.



**Caution!**

**Risk of damage!**

**The unit can be destroyed by overvoltage peaks that exceed 2 kV.**

## 6 Storage and disposal



**Caution!**

**Risk of damage!**

**The heater must not be stored at temperatures above +65 °C or below -33 °C.**

Disposal can be performed at the Rittal plant.

- Please contact us for advice.

## 7 Warranty

The conditions named in the sales and delivery conditions of the associated Rittal agents and subsidiaries apply.

## 8 Technical specifications

### Heaters without fan

Model No.		3105.310	3105.320	3105.330	3105.340	3105.350	3105.360	3105.370
Dimensions mm	W	45	45	64	64	64	90	90
	H	120	120	155	155	230	165	180
	D	46	46	56	56	56	75	75
Hole distance <b>A</b> mm		42				60		
Rated operating voltage		110...230 V AC, 50/60 Hz						
Continuous thermal output W at Tu = 10 °C		8...10	18...20	23...30	49...50	63...75	86...100	130...150
Ambient temperature		-33 °C...+65 °C						
Pre-fuse T		2 A			4 A			
Protection category		IP 20						
Protection class		II						

We reserve the right to make technical modifications.

### Heaters with fan

Model No.		3105.380	3105.390	3105.400	3105.410	3105.420	3105.430
Dimensions mm	W	103					
	H	200					
	D	103					
Hole distance <b>A</b> mm		171					
Hole distance <b>B</b> mm		153 (fitted rotated through 180°)					
Rated operating voltage		230 V, 50/60 Hz			115 V, 50/60 Hz		
Continuous thermal output W at Tu = 10 °C		250/265	400/415	800/810	235/250	355/400	710/800
Ambient temperature		-33 °C...+65 °C					
Pre-fuse T		4 A	6 A		4 A	6 A	10 A
Protection category		IP 20					
Protection class		II					

We reserve the right to make technical modifications.

## 9 Appendix

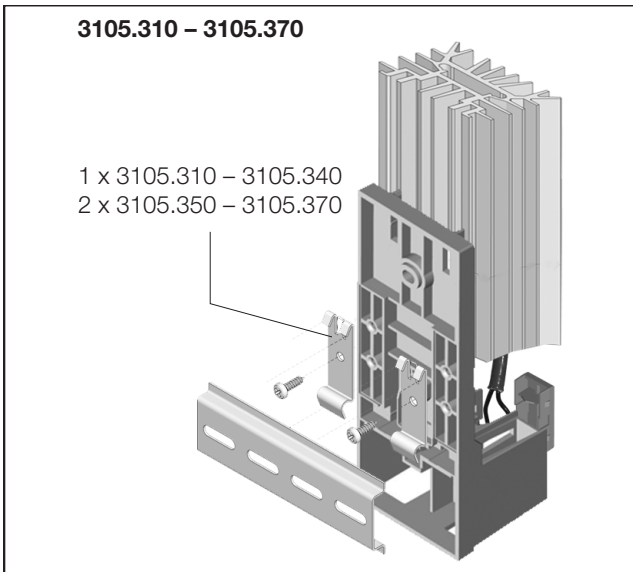


Fig. 2: Snap-type fastening onto a 35 mm support rail EN 60715

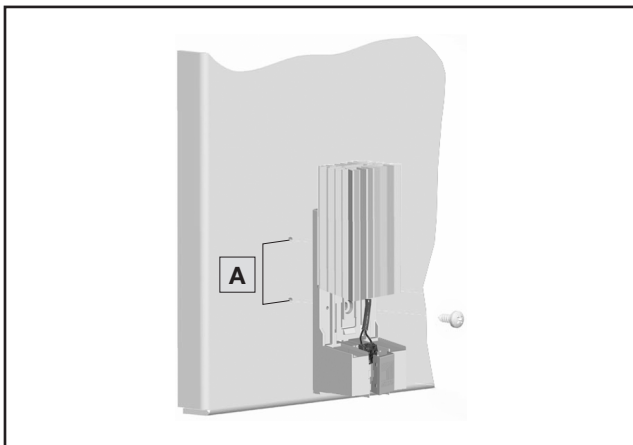
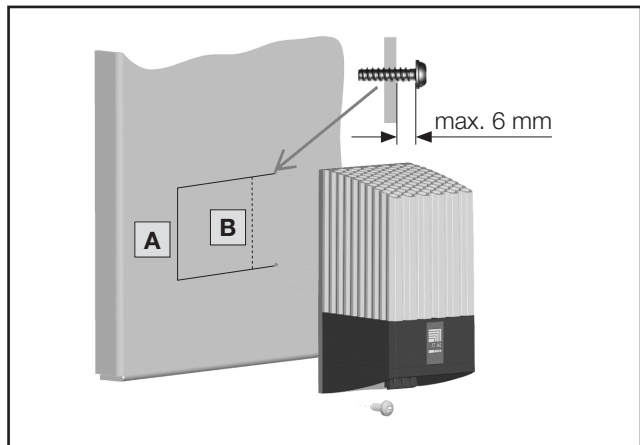


Fig. 3: Screw fastening onto a mounting plate

- A** Hole distance
- B** Hole distance for fitting rotated through 180°



**Note:**  
In case of assembly rotated through 180°, the mounting clips must always point upwards.

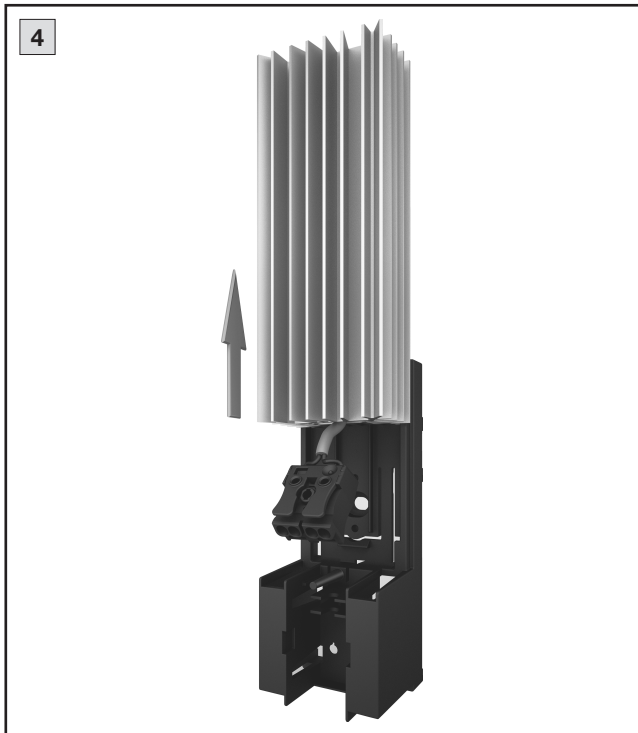
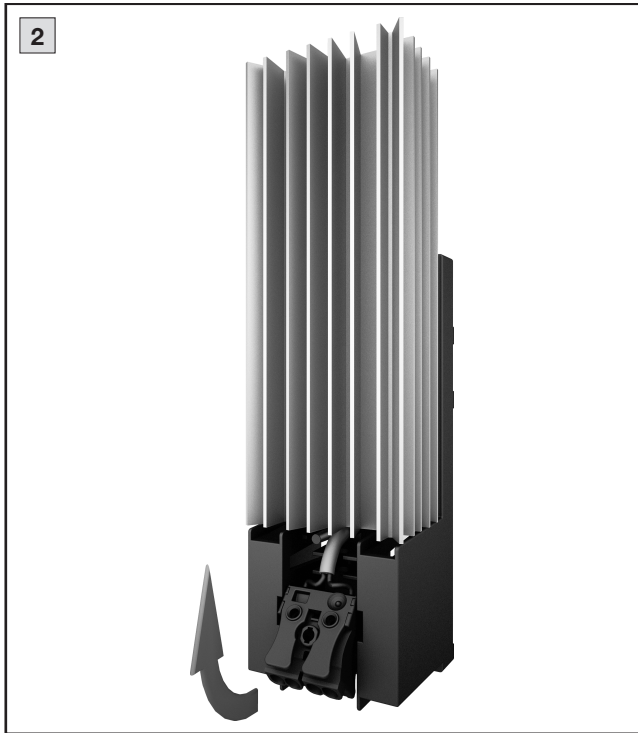


Fig. 4: Removal of the units

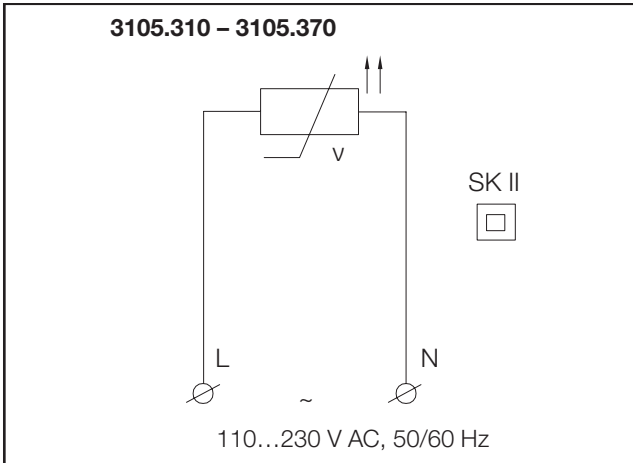


Fig. 5: Wiring plan – Heater

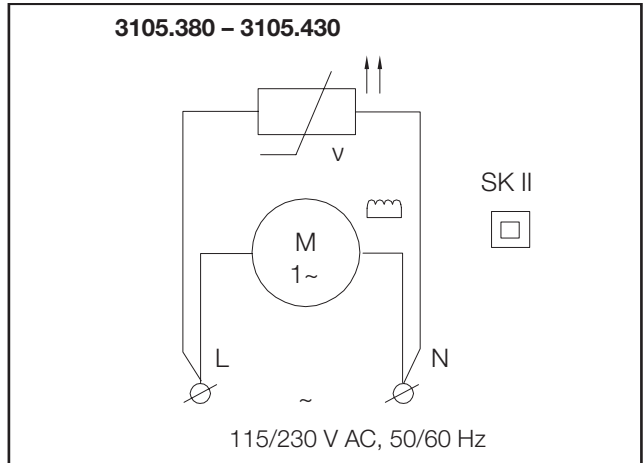


Fig. 6: Wiring plan – Heater with fan

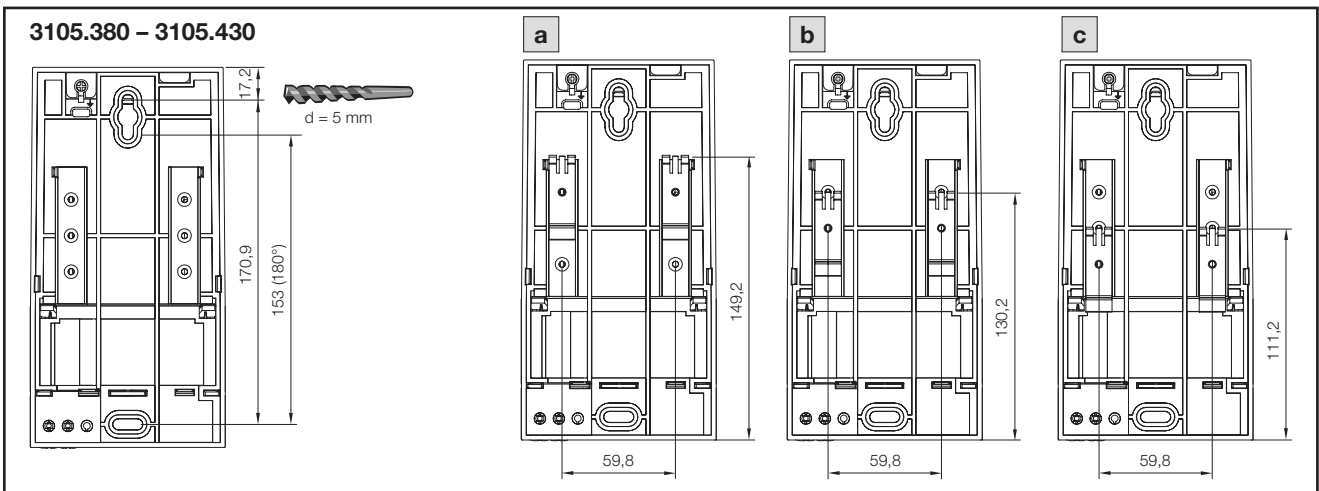


Fig. 7: Fastening onto a mounting plate/Fastening possibilities on support rails

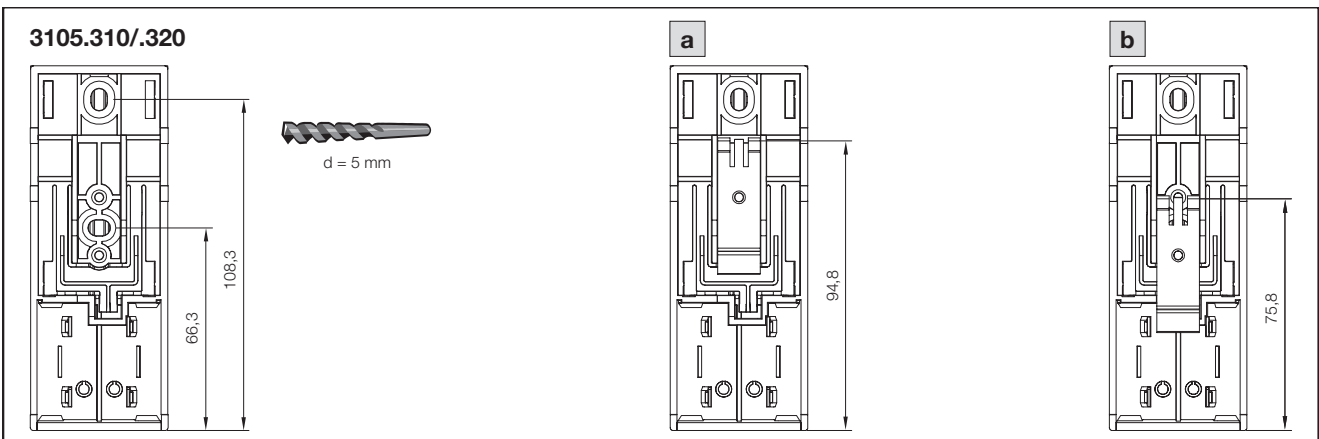


Fig. 8: Fastening onto a mounting plate/Fastening possibilities on support rails



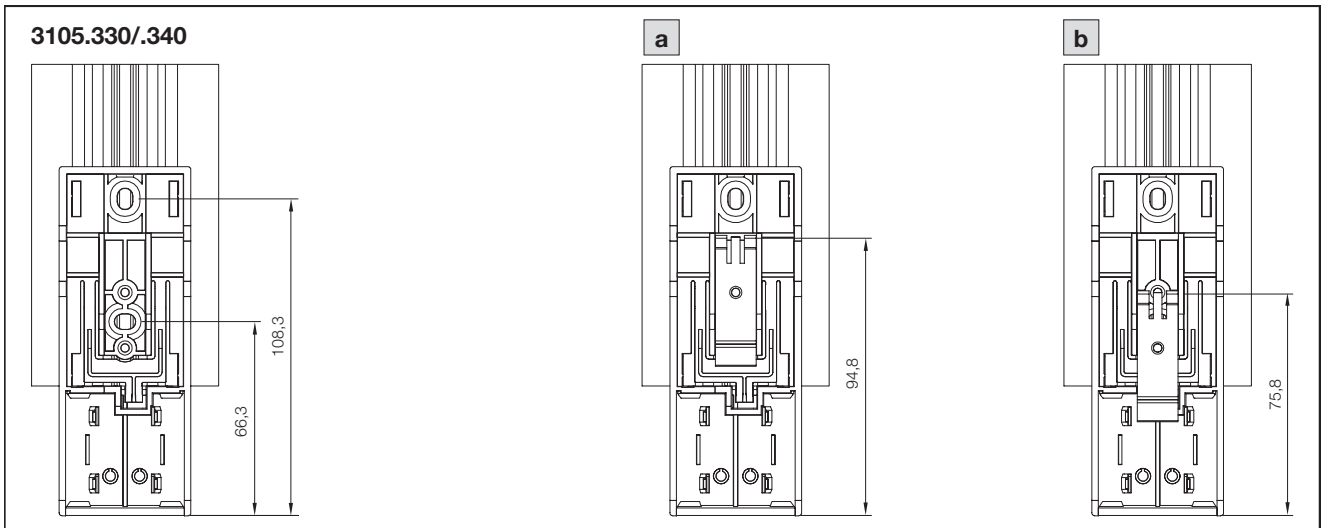


Fig. 9: Fastening onto a mounting plate/Fastening possibilities on support rails

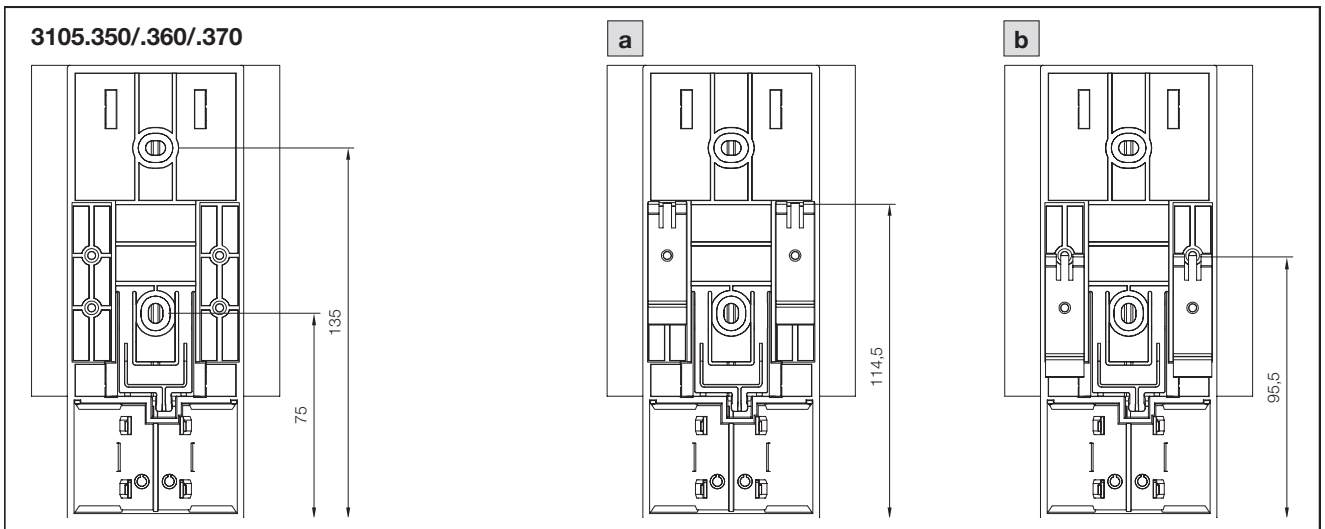


Fig. 10: Fastening onto a mounting plate/Fastening possibilities on support rails

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- Enclosures
- Power Distribution
- Climate Control
- IT Infrastructure
- Software & Services

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



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11.2024/D-0000-00004116-00-EN

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