



AMKASYN

Device Description

External Brake Resistor

AR 4000

Version: 2021/42

Part no.: 26892

Translation of the "Original Dokumentation"

AMK*motion*

MEMBER OF THE ARBURG FAMILY

Imprint

Name: PDK_026892_BW_AR4000_en

Version:

| Version | Change | Letter symbol |
|---------|---|---------------|
| 2021/42 | <ul style="list-style-type: none">AMKmotion Design, Mail and Web Adresses | LeS |

Previous version: 2019/38

Product version:

| Product | Firmware Version (Part no.) | Hardware Version |
|--|-----------------------------|------------------|
| AR 4000-8-O AR 4000-8-F AR 4000-20-O AR 4000-20-F AR 4000-40-F AR 4000-13-F | - | |

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We reserve the right to modify the content of the documentation as well as the delivery options for the product.

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For fast and reliable troubleshooting, you can help us by informing our Customer Service about the following:

- Type plate data for each unit
- Software version
- Device configuration and application
- Type of fault/problem and suspected cause
- Diagnostic messages (error messages)

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1 Safety instructions

| ⚠ WARNING | |
|---|---|
|  | <p>Risk of burns when touching hot surfaces!</p> <p>The casing temperature, for example of the line filter, the choke or the brake resistor, can be more than 70 °C during and even after operation. Contact causes burns.</p> <p>Steps to prevent:</p> <ul style="list-style-type: none"> • Make sure that the surfaces have cooled down before you touch. • Wear protective clothing such as gloves if hot parts need to be touched. • Fit a warning sign with warning hot surface. • Do not mount any flammable objects near the device. |

2 Product presentation

A servo motor creates generative energy during braking, which is fed into the DC intermediate circuit. This brake energy is available to motorically running servo motors that are connected to the same intermediate circuit.

Excessive brake energy is fed back into the supply network by the supply module. No feedback is possible for supply modules without regenerative feedback or during line failure.

In this case, the supply module requires an external brake resistor by which the generative energy is converted into heat.

All AMK supply modules feature an internal brake transistor control and terminals for connecting an external brake resistor with temperature monitoring.

The braking resistance needs to be selected application-specific depending on the occurring brake energy.

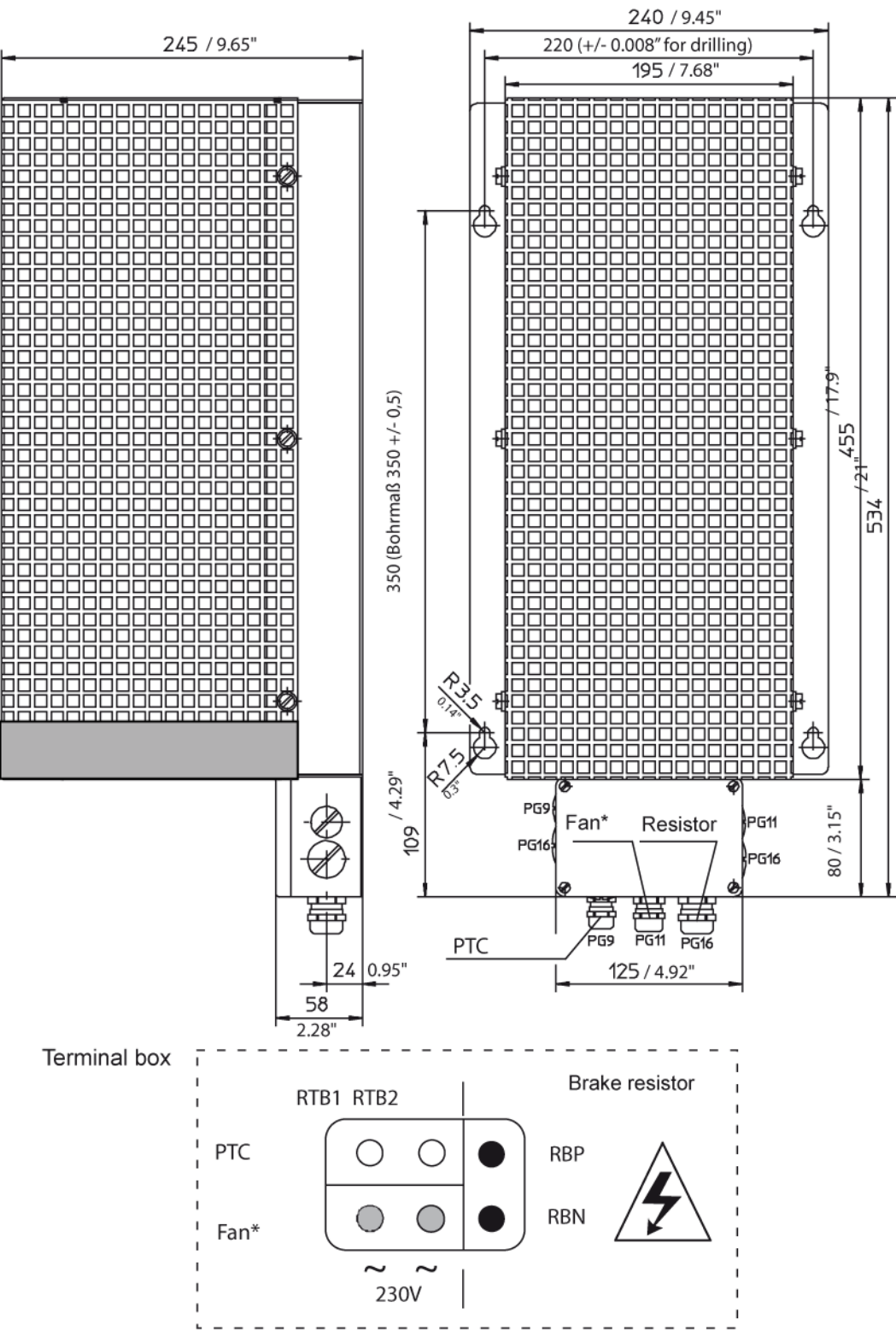
3 Technical data

| | AR 4000-8-0 | AR 4000-8-F | AR 4000-20-0 | AR 4000-20-F | AR 4000-40-F | AR 4000-13-F ²⁾ |
|---|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| Order number | E584 | E585 | E591 | E593 | E601 | 45761 (E633) |
| Resistor | | | | | | |
| Nominal resistance | 8 Ω | 8 Ω | 20 Ω | 20 Ω | 40 Ω | 13 Ω |
| Continuous braking power | 1500 W | 4000 W | 600 W | 1500 W | 3200 W | 3200 W |
| Peak braking power | 60 kW for 3s | 60 kW for 3s | 26 kW for 3s | 26 kW for 3s | 15 kW for 3s | 33 kW for 3s |
| Lifetime approx. | >100000h | 56000h | >100000h | 56000h | 56000h | 56000h |
| Cable cross-section | 6 mm ² AWG 10 | 6 mm ² AWG 10 | 6 mm ² AWG 10 | 6 mm ² AWG 10 | 6 mm ² AWG 10 | 6 mm ² AWG 10 |
| Protection class terminal box | IP 30 ¹⁾ | IP 30 ¹⁾ | IP 30 ¹⁾ | IP 30 ¹⁾ | IP 30 ¹⁾ | IP 30 ¹⁾ |
| Protection class shielding cover | IP 20 | IP 20 | IP 20 | IP 20 | IP 20 | IP 20 |
| Weight approx. | 7 kg | 8,1 kg | 5,6 kg | 6,7 kg | 7,6 kg | 7,6 kg |
| Thermal protector | | | | | | |
| PTC Resistance (cold) approx. | 70 Ω | 70 Ω | 70 Ω | 70 Ω | 70 Ω | 70 Ω |
| Cut-off temperature | 70 °C | 70 °C | 70 °C | 70 °C | 70 °C | 70 °C |
| Cable cross-section | 0.5 mm ² AWG 20 | 0.5 mm ² AWG 20 | 0.5 mm ² AWG 20 | 0.5 mm ² AWG 20 | 0.5 mm ² AWG 20 | 0.5 mm ² AWG 20 |
| Fan | | | | | | |
| Fan voltage | - | 230V, 50/60 Hz | - | 230V, 50/60 Hz | 230V, 50/60 Hz | 400V, 50/60 Hz |
| Fan power | - | 45 W | - | 45 W | 45 W | 45 W |
| Cable cross-section | - | 1 mm ² AWG 18 | - | 1 mm ² AWG 18 | 1 mm ² AWG 18 | 1 mm ² AWG 18 |

1) IP 30 is valid only if the brake resistor is installed directly to a mounting plate without gap.
The mounting panel must not have any cutout > 2.4 mm in the area of the brake resistor.

2) Not available for new applications!

3.1 Dimensions



*) Fan only with version AR 4000-xx-F

4 Assembly

Avoid heat build-up.

The brake resistor must not be mounted in the cooling air flow of any electronic equipment!

The brake resistor is fixed directly on the mounting plate without distance!

The mounting panel must not have any cutout > 2.4 mm in the area of the brake resistor.

Attach a warning label: "Caution against contact".

5 Wiring

Connect the brake resistor to power supply module KE, terminals RBP, RBN. Use a shielded cable. Shield connection at both ends

Connect the thermal protector to power supply module KE, terminals RT1, RT. Use a shielded cable. Only one shield connection at the power supply module.

You will find the cross-sections of the recommended cables at the chapter technical data.

Your opinion is important!

With our documentation we want to offer you the highest quality support in handling the AMKmotion products.

That is why we are now working on optimizing our documentation.

Your comments or suggestions are always of interest to us.

We would be grateful if you take a bit of time and answer our questions. Please return a copy of this page to us.



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Thank you for your assistance.

Your AMKmotion documentation team

1. How would you rate the layout of our AMKmotion documentation?

(1) very good (2) good (3) satisfactory (4) less than satisfactory (5) poor

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(1) very good (2) good (3) moderate (4) hardly (5) not at all

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