

PACMotion™ VFD

Brake Resistors Installation Guide

Contents

Section 1: Introduction	3
1.1 Important Safety Information	3
Section 2: Technical Data	1
2.1 Electrical Specifications	1
2.2 Electrical Installation.....	1
2.2.1 Activating the Brake Resistor on a VFD IC866	1
2.3 Mechanical Installation - Frames Sizes 2 & 3 (IP20)	1
2.4 Mechanical Installation – Frame Size 4	2
2.5 Mechanical Installation – Frame Size 5	3
2.5.1 General Contact Information.....	4

Warnings and Caution Notes as Used in this Publication

WARNING

Warning notices are used in this publication to emphasize that hazardous voltages, currents, temperatures, or other conditions that could cause personal injury exist in this equipment or may be associated with its use.

In situations where inattention could cause either personal injury or damage to equipment, a Warning notice is used.

CAUTION

Caution notices are used where equipment might be damaged if care is not taken.

Note: Notes merely call attention to information that is especially significant to understanding and operating the equipment.

These instructions do not purport to cover all details or variations in equipment, nor to provide for every possible contingency to be met during installation, operation, and maintenance. The information is supplied for informational purposes only, and Emerson makes no warranty as to the accuracy of the information included herein. Changes, modifications, and/or improvements to equipment and specifications are made periodically and these changes may or may not be reflected herein. It is understood that Emerson may make changes, modifications, or improvements to the equipment referenced herein or to the document itself at any time. This document is intended for trained personnel familiar with the Emerson products referenced herein.

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Section 1: Introduction

Brake resistors are used to dissipate energy that is transferred back from the motor during the drive during regeneration – for example when stopping or slowing down high inertia loads. PACMotion VFD drives range of brake resistors are suitable for light duty braking (5%), without high repeat cycle times. For applications which require high braking power or frequent usage, alternative resistors should be used.

1.1 Important Safety Information

This option is specifically designed to be used with the PACMotion VFD variable speed drive product range and is intended for professional incorporation into complete equipment or systems. If installed incorrectly it may present a safety hazard. The PACMotion VFD uses high voltages and currents, carries a high level of stored electrical energy, and is used to control mechanical plant that may cause injury. Close attention is required to system design and electrical installation to avoid hazards in either normal operation or in the event of equipment malfunction. PACMotion VFD and the Options should be installed only by qualified electrical persons and in accordance with local and national regulations and codes of practice.

WARNING

Electric Shock Hazard!

Disconnect and **ISOLATE** the PACMotion VFD before attempting any work on it. High voltages are present at the terminals and within the drive for up to 10 minutes after disconnection of the electrical supply. Where the electrical supply to the drive is through a plug and socket connector, do not disconnect until 10 minutes have elapsed after turning off the supply. It is the responsibility of the installer to ensure that the equipment or system into which the product is incorporated complies with the EMC legislation of the country of use. Within the European Union, equipment into which this product is incorporated must comply with 2004/108/EC, Electromagnetic Compatibility.

Within the European Union, all machinery in which this product is used must comply with the Directive 98/37/EC, Safety of Machinery. In particular, the equipment should comply with EN60204-1.

The manufacturer accepts no liability for any consequences resulting from inappropriate, negligent or incorrect installation. The contents of this User Guide are believed to be correct at the time of printing. In the interests of a commitment to a policy of continuous improvement, the manufacturer reserves the right to change the specification of the product or its performance or the contents of the User Guide without notice.

Section 2: Technical Data

2.1 Electrical Specifications

Part Number	VFD Size	Resistance	Rated Voltage	Rated Power (W)		L (mm)	H (mm)	B (mm)	Weight (kg)
				Continuous	Peak				
IC866-BR-100-020-21	2, 3	100	900 VDC	200	12000	188	40	9	
IC866-BR-033-040-21	4, 5	22	900 VDC	500	21000	330	80	10	

2.2 Electrical Installation

The brake resistor connectors to the terminals marked “+” or “DC+” and “BR.”

2.2.1 Activating the Brake Resistor on a VFD IC866

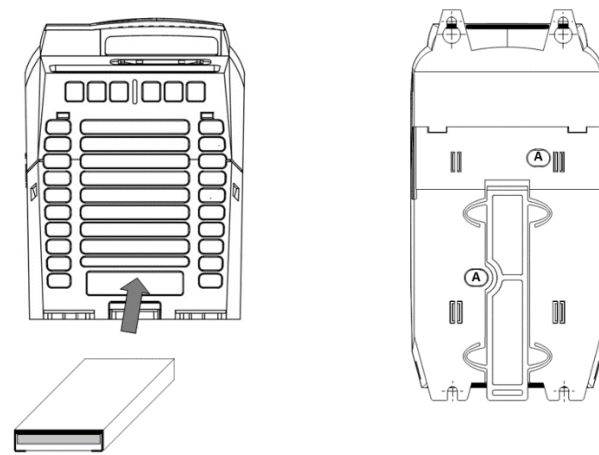
Enable the brake circuit by setting P1-05 = 2.

Note: If using non-standard resistors (not supplied by Emerson), it is necessary to enter the correct data for the resistor into parameters as follows Select Advanced Parameter Access by setting P1-14 = 201 Enter the resistance of the connected resistor into parameter P6-19 Enter the power rating of the connected resistor into P6-20 Non-Emerson supplied resistors should not be mounted inside the drive.

2.3 Mechanical Installation - Frames Sizes 2 & 3 (IP20)

The IC866-BR-100-020-21 Resistor should be mounted to the drive heatsink. The rated power capacity shown above can only be achieved if the resistor is mounted in this way, to aid heat dissipation. The resistor should be slid into the drive via the rearmost slot on the bottom of the drive. The flat face of the resistor must face the front of the drive. It can then be held in place, using two supplied screws inserted into the threaded holes marked A in .

Figure 1: Mount the Resistor to the Drive Heatsink



2.4 Mechanical Installation – Frame Size 4

1. Remove the fan tray by pressing in the tabs labeled **A** in Figure 2. **Note: There are two on each side of the drive.**
2. Remove and retain the screws at locations **C** in Figure 2.
3. Slide the resistor into the heatsink in the slot marked **B** in Figure 3.
4. Replace the supplied retaining screws through holes marked **C** in Figure 2. The screws should be tightened sufficiently to hold the resistor in place when the drive is mounted vertically
5. Replace the fan tray to its original position. The brake resistor connection cables should be passed through slot **B**, and then routed through the cable gland plate using a suitable gland or grommet to retain the ingress protection of the drive.

Figure 2: Drive Enclosure (Side View)

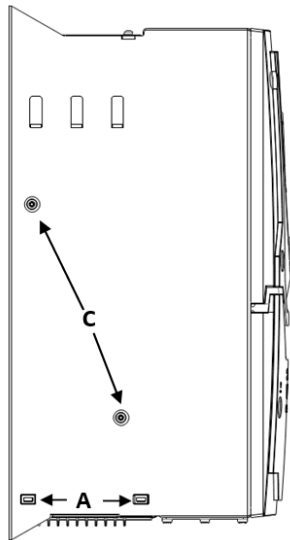
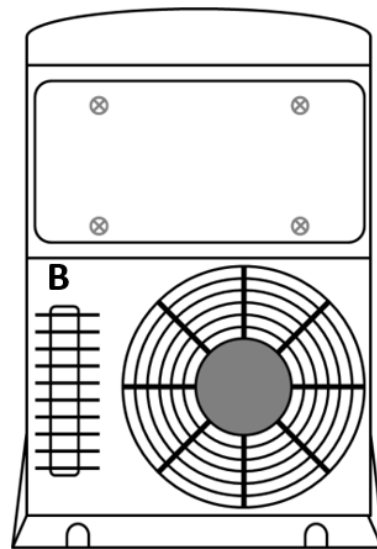


Figure 3: Drive Rear View



2.5 Mechanical Installation – Frame Size 5

1. Remove the fan tray by pressing the tabs marked **A** in Figure 4.
2. Slide the resistor into the end channel of the heatsink. It is possible to mount one resistor on either side of the heatsink, allowing two resistors in parallel to be connected to the drive.
3. Pass the connection cables through the grommet marked **B** (Figure 5) to allow connection to the drive terminals.
4. Use the supplied mounting screws inserted through holes **C** (Figure 4) to hold the resistor in place in the heatsink.

Figure 4: Drive Enclosure (Side View)

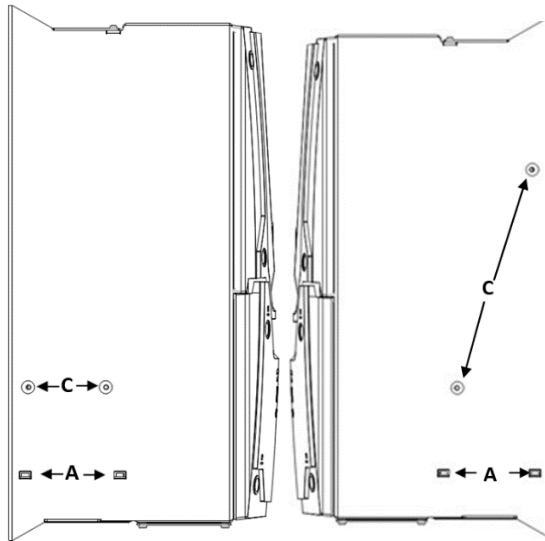
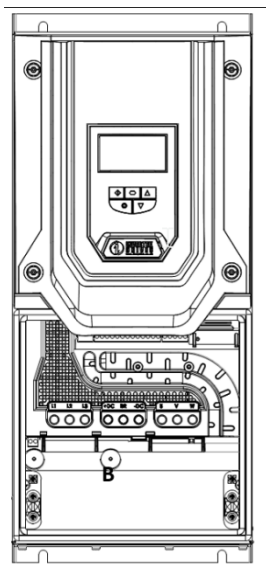


Figure 5: Drive Face



2.5.1 General Contact Information

Home link: <http://www.emerson.com/industrial-automation-controls>

Knowledge Base: <https://www.emerson.com/industrial-automation-controls/support>

Technical Support

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1-434-214-8532 (If toll free option is unavailable)

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+420-225-379-328 (If toll free option is unavailable)
+39-0362-228-5555 (from Italy - if toll-free 800 option is unavailable or dialing from a mobile telephone)

Customer Care (Quotes/Orders>Returns): customercare.emea.mas@emerson.com
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Customer Care (Quotes/Orders>Returns): customercare.cn.mas@emerson.com
Technical Support: support.mas.apac@emerson.com

Any escalation request should be sent to: mas.sfdcescalation@emerson.com

Note: If the product is purchased through an Authorized Channel Partner, please contact the seller directly for any support.

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