

TOSVERT VF-AS3

Instruction Manual for Load Reduction

TOSHIBA INDUSTRIAL PRODUCTS AND SYSTEMS CORPORATION

NOTICE

1. Read this manual carefully before installing or operating the inverter.
2. All information contained in this manual will be changed without notice.

Contents

1	Introduction	1
2	Installation	1
2.1	Installation environment	1
2.2	How to install	3
3	Load Reduction	5

1. Introduction

Depending on the way in which the inverter is installed, the ambient temperature and the carrier frequency setting, you may need to reduce the inverter's continuous output current.



This instruction manual shows the output current reduction rate of each model in these graphs.

2. Installation


Take special care with the installation environment of the inverter. Install the inverter in a location that secures space for ventilation and heat emitting (in the cabinet, etc.), considering heat generation and occurrence of noise.

2.1 Installation environment

⚠ WARNING

 Prohibited	<ul style="list-style-type: none"> Do not place any inflammable object near the inverter. If flame is emitted due to failure in the inverter, this will lead to fire. Do not install the inverter in any location where the inverter could come into contact with water or other fluids. This will result in electric shock or fire.
 Mandatory action	<ul style="list-style-type: none"> Operate under the environmental conditions prescribed in the instruction manual. Operations under any other conditions will result in failure.

⚠ CAUTION

 Prohibited	<ul style="list-style-type: none"> Do not install the inverter in any place with large vibration. The unit will fall due to the vibration, resulting in injury.
---	--

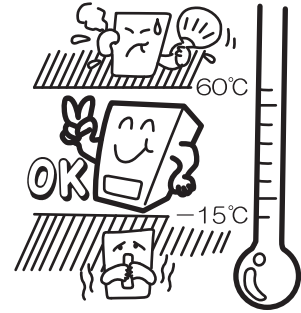
This inverter is an electronic control instrument. Take full consideration to install it in the proper operating environment as follows.

- (1) Do not install in any location of high temperature, high humidity, moisture condensation and freezing and avoid locations where there is exposure to water and/or where there may be large amounts of dust, metallic fragments and oil mist.**

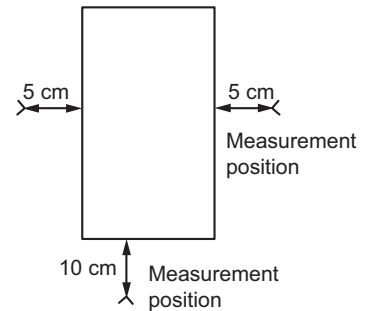


- (2) Do not install in any location where corrosive gases or grinding fluids are present.
- (3) Operate in areas where ambient temperature ranges from -15°C to +60°C.

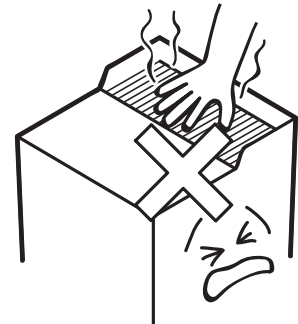
- When using the inverter in locations with temperatures above 50°C, remove the top cover and operation panel of the inverter to use it.
- For details of how to remove the top cover, refer to [2. 2] of instruction manual (E6582062).
- The inverter is a heat-emitting body. Make sure proper space and ventilation are provided when installing in the cabinet.
- Measure the ambient temperature in the positions shown in the figure on the right.



Position for measuring ambient temperature



- (4) Do not touch the heat sink as it may have a high temperature.



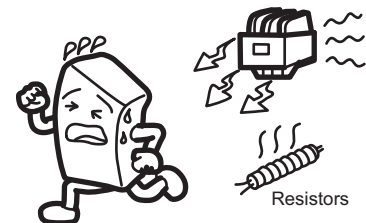
- (5) Do not install in any location subject to large amounts of vibration.

- If the inverter is installed in a location that is subject to vibration, anti-vibration measures are required. Please consult with your Toshiba distributor about these measures.





- (6) If the inverter is installed near any of the equipment listed below, provide measures to insure against errors in operation.

- Solenoids: Attach a surge suppressor on the coil.
- Brakes: Mount a surge absorber on the coil.
- Magnetic contactors: Mount a surge absorber on the coil.
- Resistors: Place far away from the inverter.





2.2 How to install

 **WARNING**

 Prohibited	<ul style="list-style-type: none"> Do not install and operate the inverter if it is damaged or any of its components is missing. This will result in electric shock or fire. Please call your Toshiba distributor for repairs.
 Mandatory action	<ul style="list-style-type: none"> Mount the inverter on a metal plate. The rear panel will get high temperature. Do not mount the inverter on an inflammable object, this will result in fire. Do not operate the inverter with the front cover removed. The unit contains high voltage parts and contact with them will result in electric shock. An emergency stop device must be installed that is configured in accordance with the system specifications. If such an emergency stop device that can activate mechanical brake by shutting off power supply is not installed, operation cannot be stopped immediately by the inverter alone, thus resulting in an accident or injury. All options to be used must be those specified by Toshiba. The use of options other than those specified by Toshiba will result in an accident.

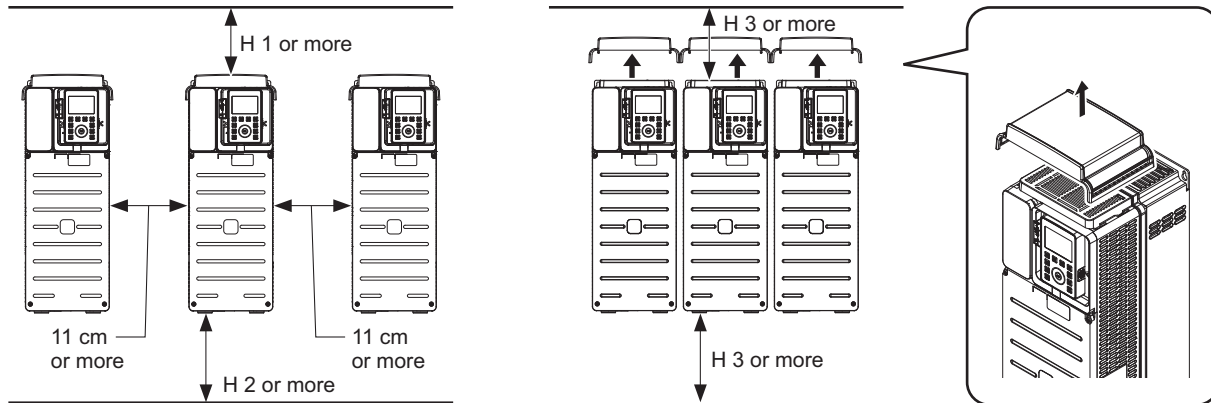
 **CAUTION**

 Prohibited	<ul style="list-style-type: none"> For transporting or carrying the inverter, do not hold by the front cover. The cover will come off and the unit will drop, resulting in injury.
 Mandatory action	<ul style="list-style-type: none"> Carry the inverter by two people or more when the inverter is the model mass 20kg or more (VFAS3-2110P - 2370P, VFAS3-4220PC - 4750PC). If you carry the inverter alone, this will result in injury. Install the inverter at a place which can support the unit's mass. If you install the inverter at a place which does not support the unit's mass, the unit will fall, resulting in injury. Install the mechanical brake when it is necessary to hold a motor shaft. A brake function of the inverter cannot perform mechanical hold, and it results in injury.

Select an indoor location with good ventilation, and then install the inverter upright on a flat metal plate. For the positions and sizes of the mounting holes, refer to [12. 2] of instruction manual (E6582062).

■ **If multiple inverters are installed**

To install multiple inverters in one location, either normal basic installation or side-by-side installation (to align inverters side-by-side horizontally with no space) can be adopted.



Type	H1(cm)	H2(cm)	H3(cm)
VFAS3-2004P - 2370P VFAS3-4004PC - 4750PC	10	10	10
VFAS3-2450P, 2550P VFAS3-4900PC - 4132KPC	25	25	25
VFAS3-4160KPC	15	15	25
VFAS3-4200KPC - 4280KPC	20	15	25

1) Basic installation

When installing multiple inverters, leave at least 11 cm or more of space between each inverter and install them aligned horizontally.

When using the inverter in locations with temperatures above 50°C, remove the top cover and operation panel of the inverter (refer to [2. 2] of instruction manual (E6582062)) and use the inverter with the output current reduced (refer to [3]).

2) Side-by-side installation

To align the inverters side-by-side horizontally with no space, remove the top cover of the inverter before use (refer to [2. 2] of instruction manual (E6582062)). When using the inverter in locations with temperatures above 50°C, use the inverter with the operation panel removed and use the inverter with the output current reduced (refer to "Instruction manual for load reduction").

The space shown in the figure above is the minimum allowable space. Because the inverter has cooling fans built in on the top or bottom surfaces, make the space on top and bottom as large as possible to allow for air passage.



Important

- Do not install in any location with high humidity or high temperatures and where there are large amounts of dust, metallic fragments and oil mist.

Memo

- We also provide models with IP55 protective construction for adverse environments.

3. Load Reduction

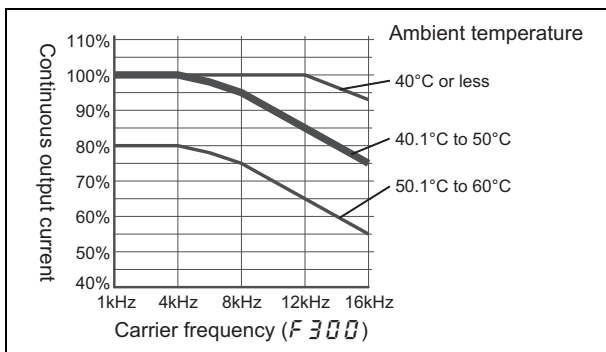
Depending on the way in which the inverter is installed, the ambient temperature and the carrier frequency setting, you may need to reduce the inverter's continuous output current.

Reduction rates vary depending on the inverter capacity.

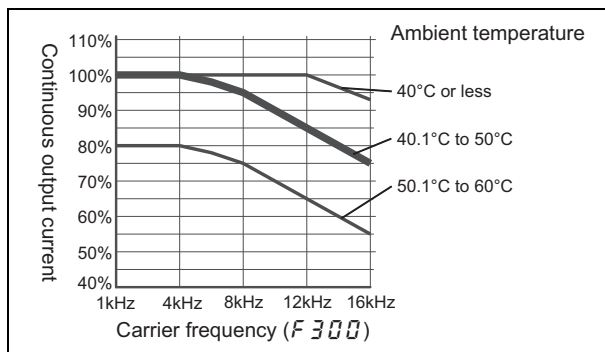
The 100% value of output current shown in these graphs is output current value shown in [12.1] of instruction manual (E6582062).

VFAS3-2004P

HD

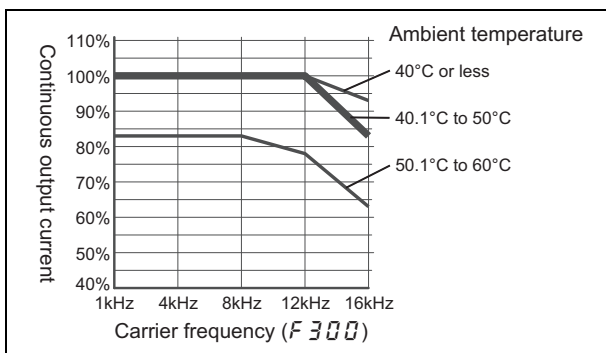


ND

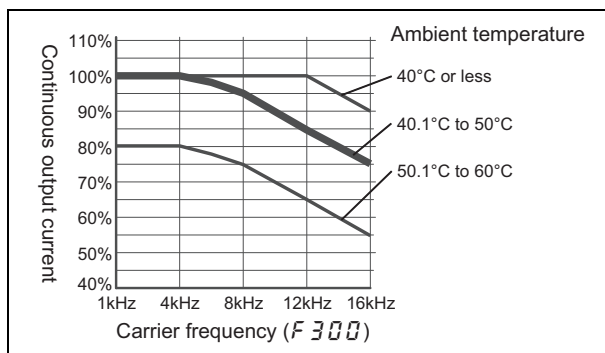


VFAS3-2007P

HD

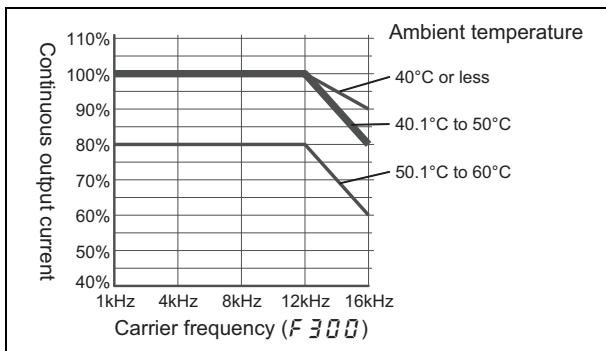


ND

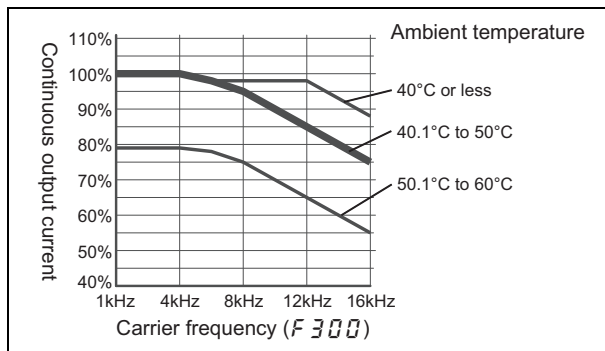


VFAS3-2015P

HD

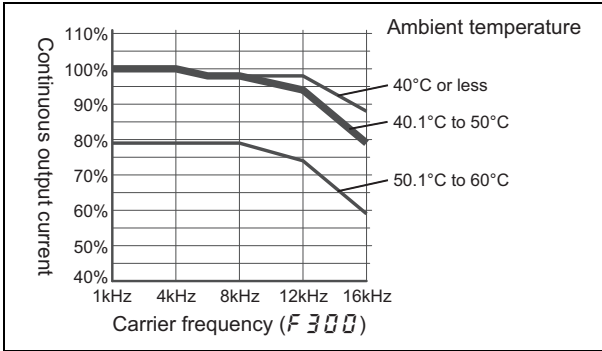


ND

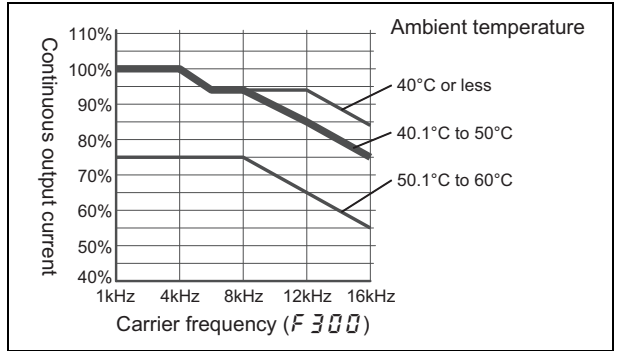


■ **VFAS3-2022P**

HD

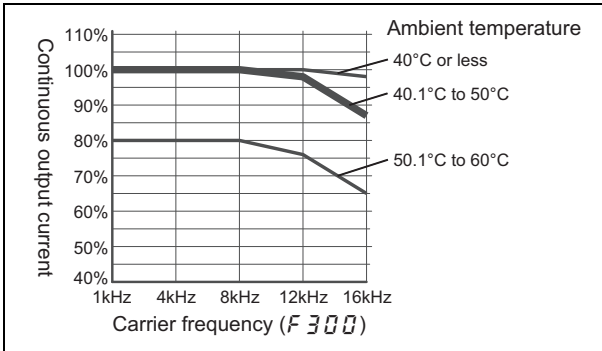


ND

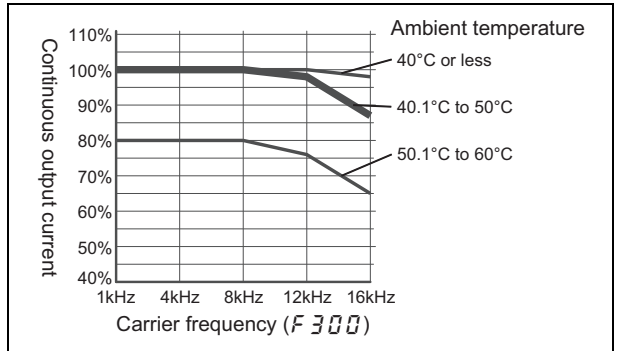


■ **VFAS3-2037P**

HD

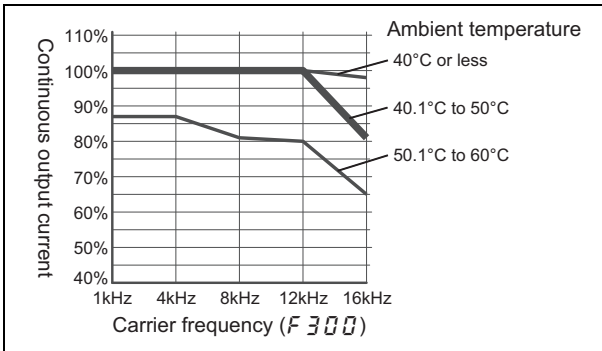


ND

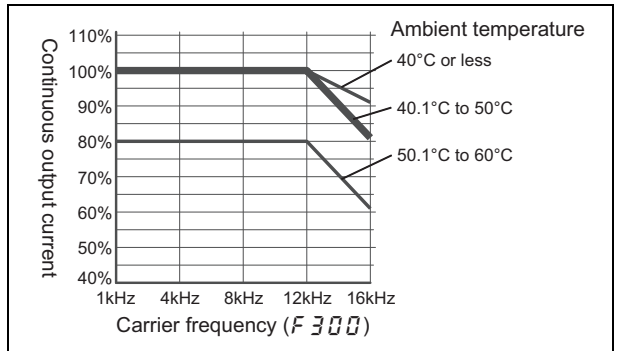


■ **VFAS3-2055P**

HD

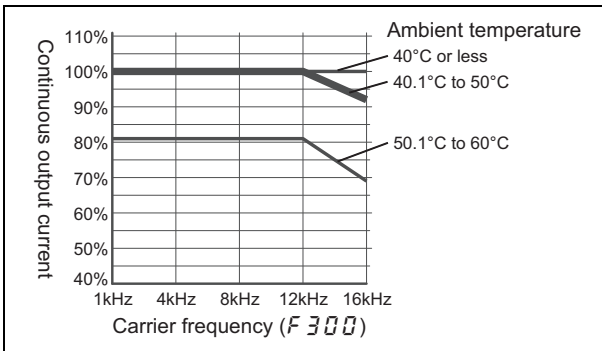


ND

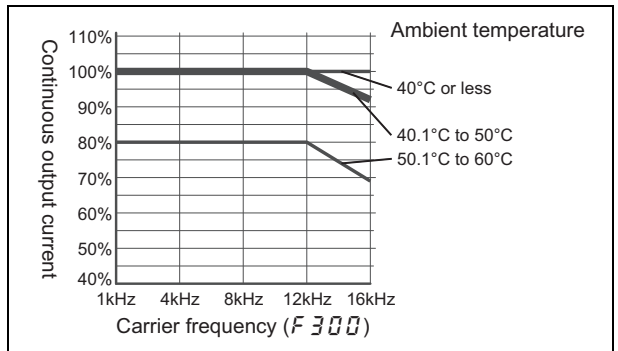


■ **VFAS3-2075P**

HD

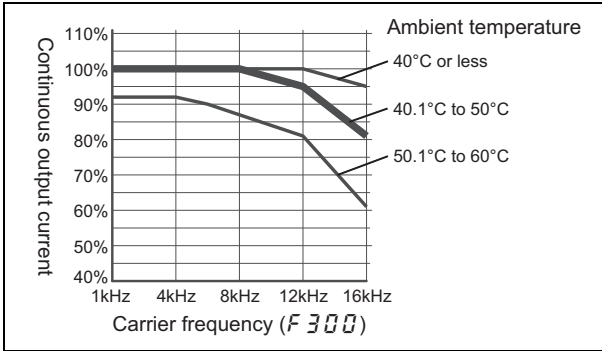


ND

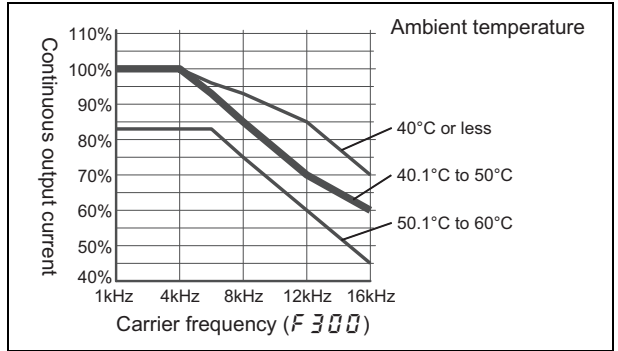


■ **VFAS3-2110P**

HD

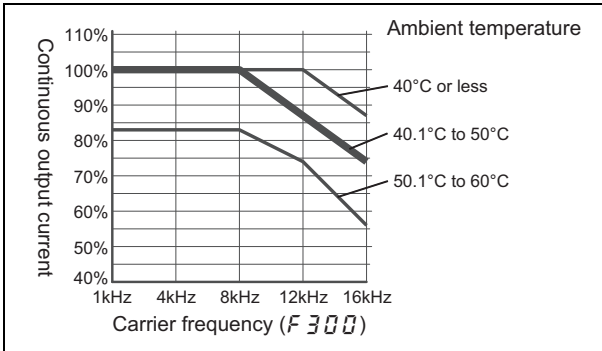


ND

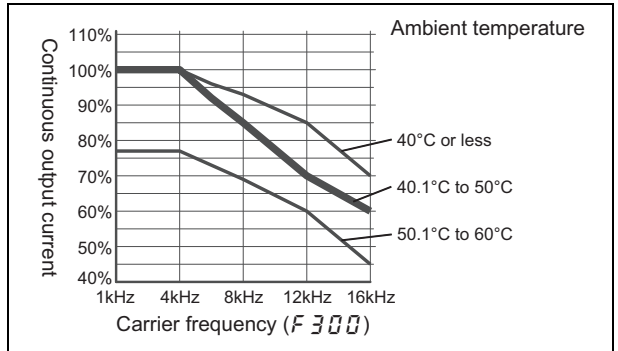


■ **VFAS3-2150P**

HD

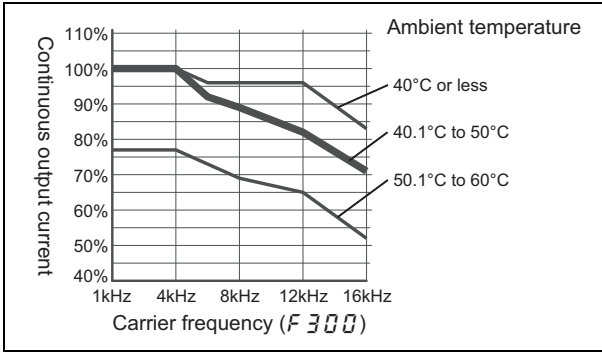


ND

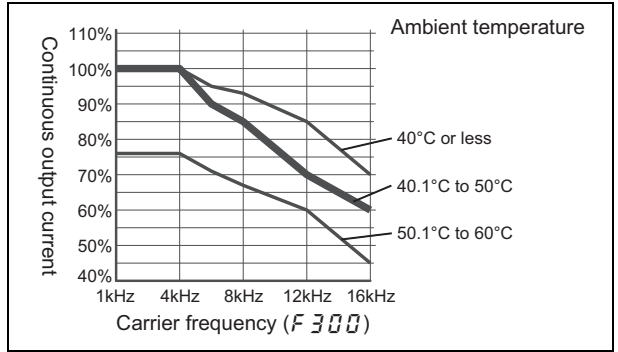


■ **VFAS3-2185P**

HD

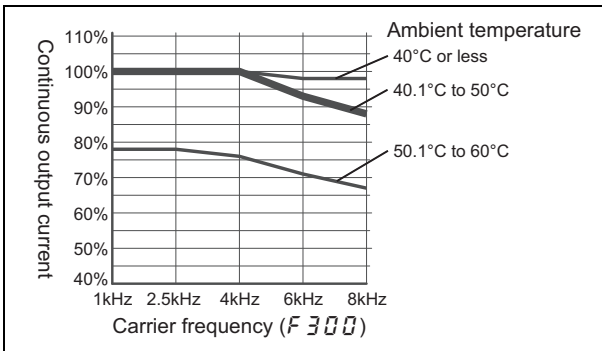


ND

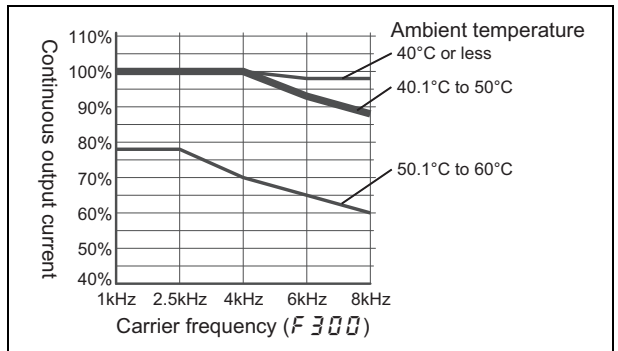


■ **VFAS3-2220P**

HD

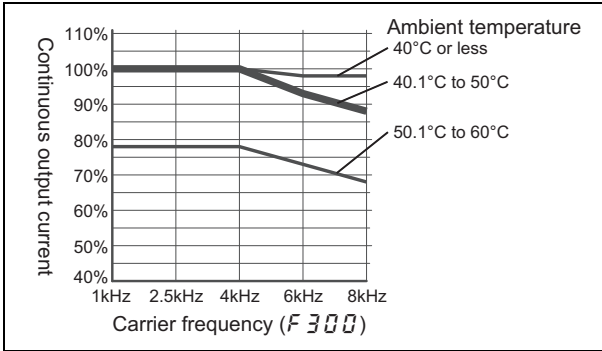


ND

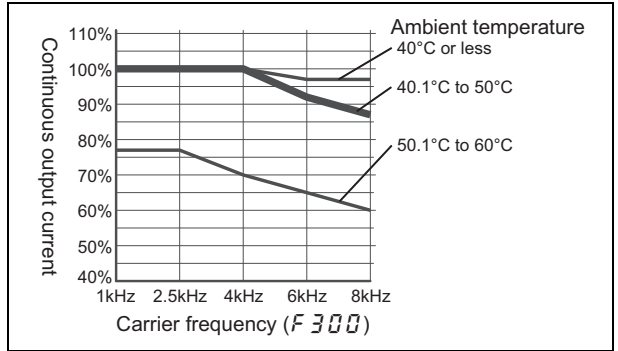


■ VFAS3-2300P

HD

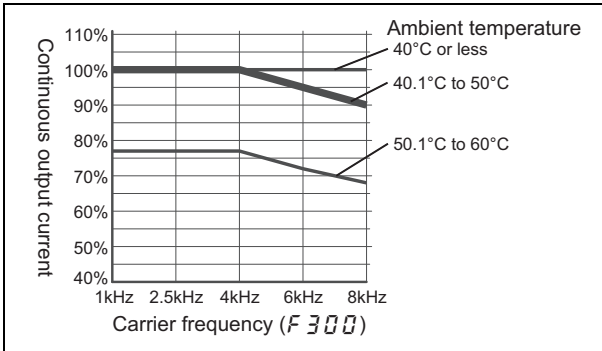


ND

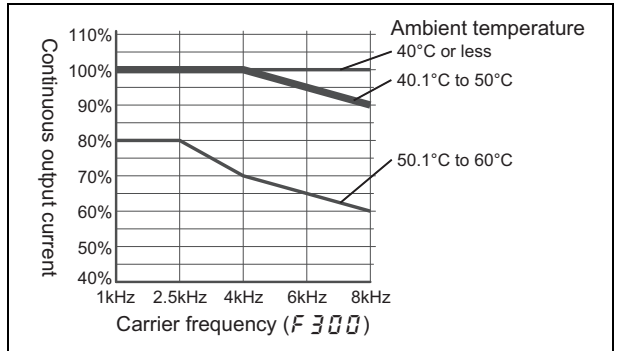


■ VFAS3-2370P

HD

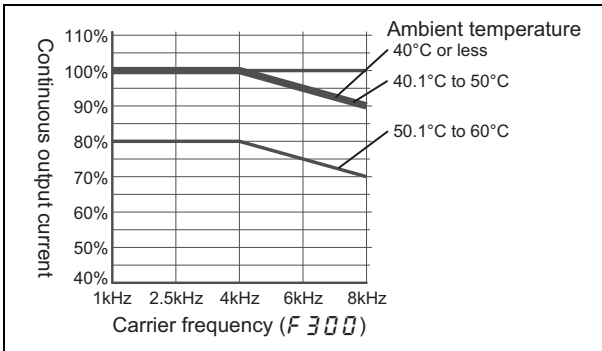


ND

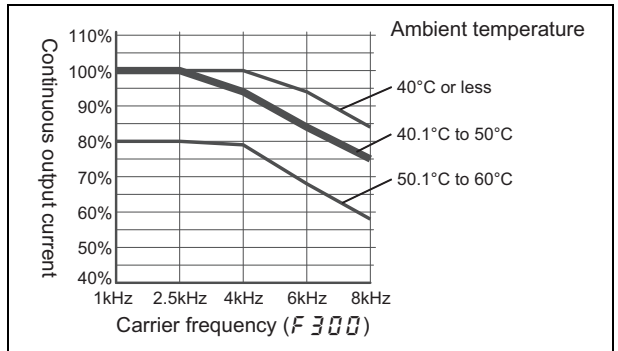


■ VFAS3-2450P

HD

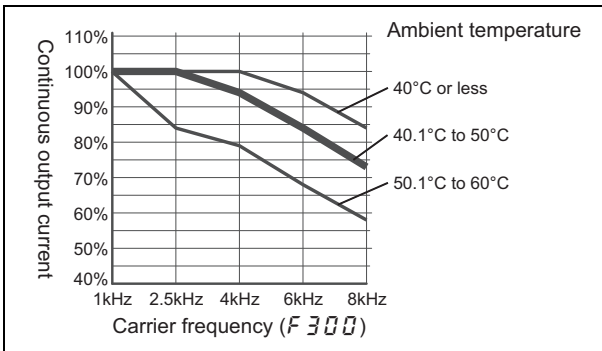


ND

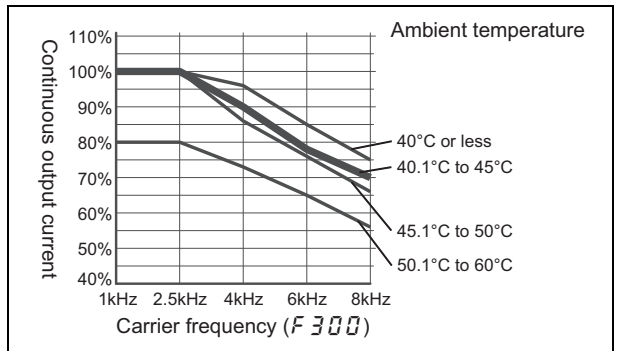


■ VFAS3-2550P

HD

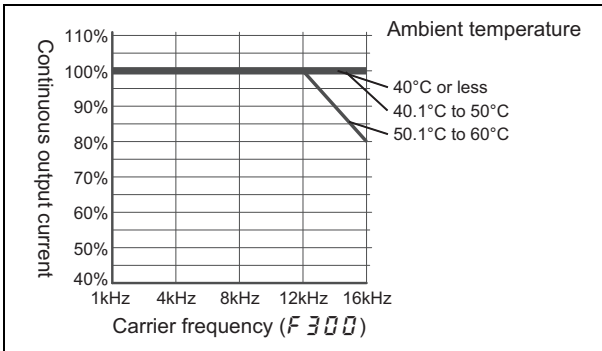


ND

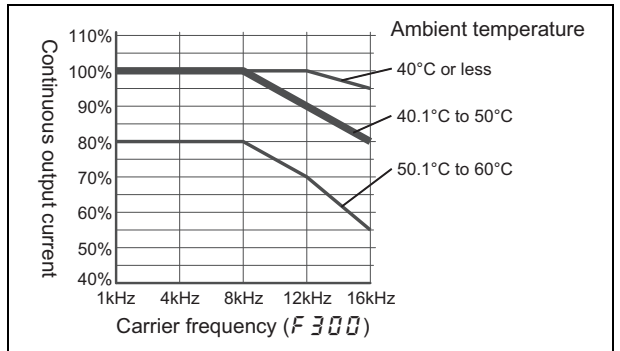


■ VFAS3-4004PC

HD

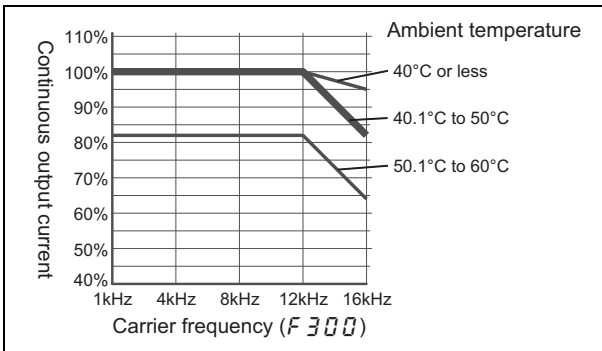


ND

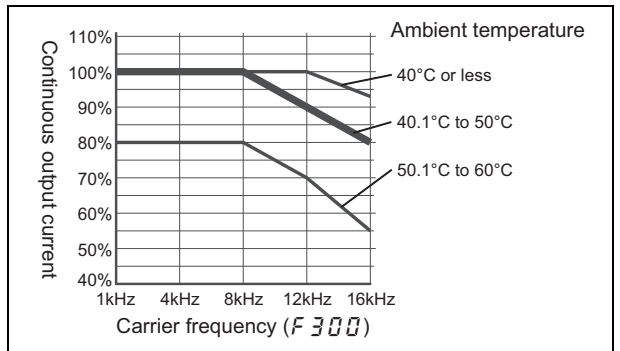


■ VFAS3-4007PC

HD

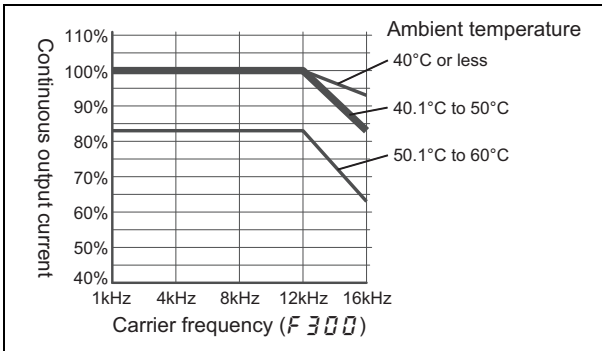


ND

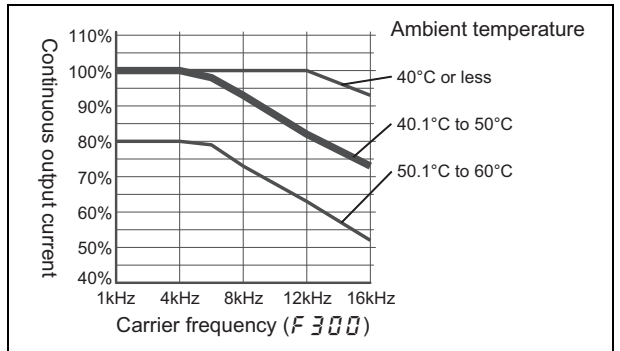


■ VFAS3-4015PC

HD

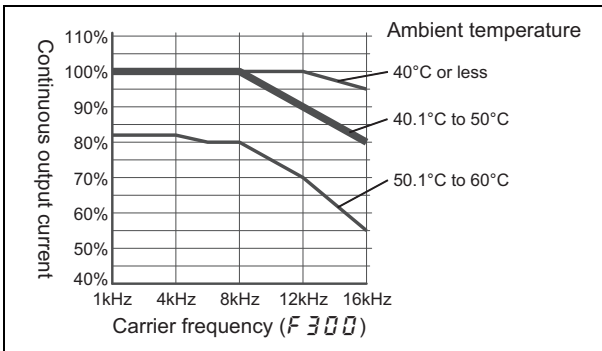


ND

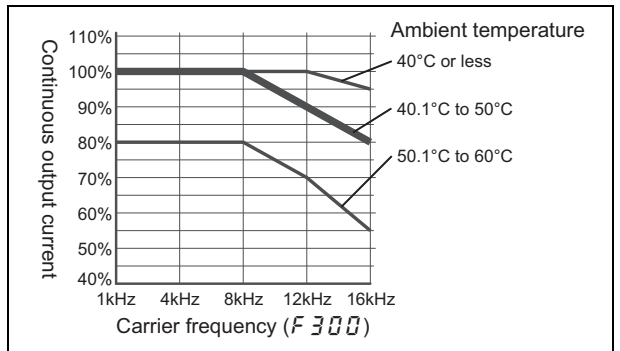


■ VFAS3-4022PC

HD

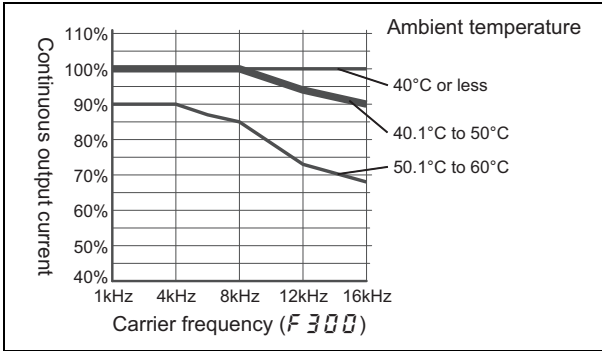


ND

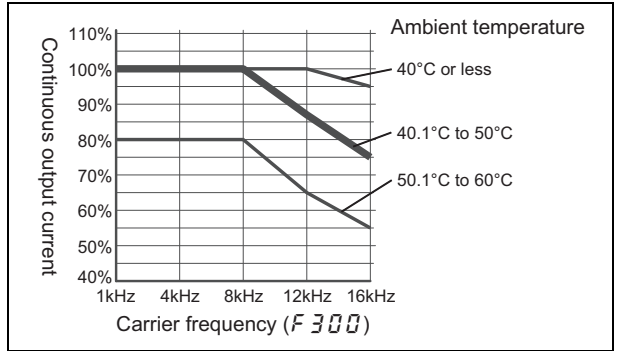


■ VFAS3-4037PC

HD

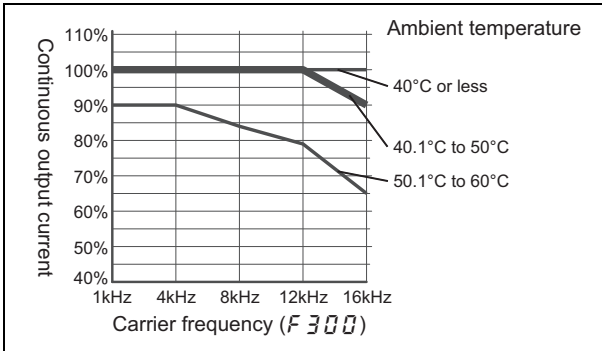


ND

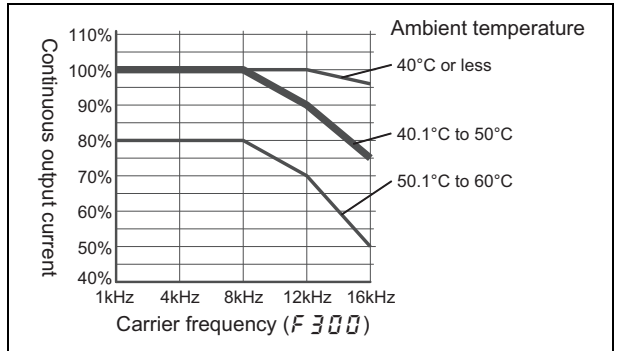


■ VFAS3-4055PC

HD

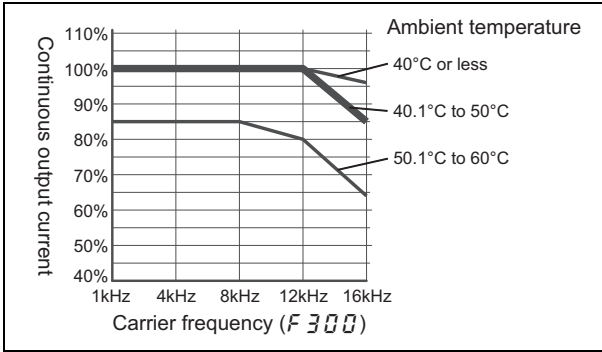


ND

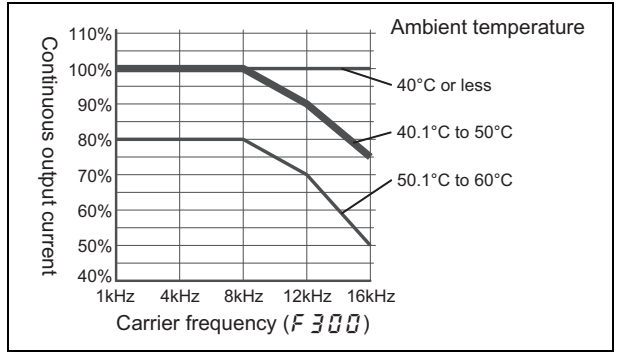


■ VFAS3-4075PC

HD

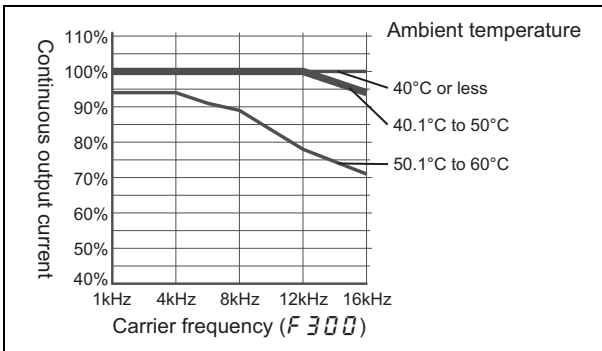


ND

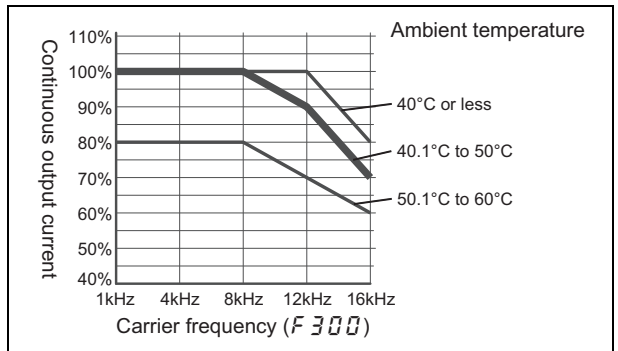


■ VFAS3-4110PC

HD

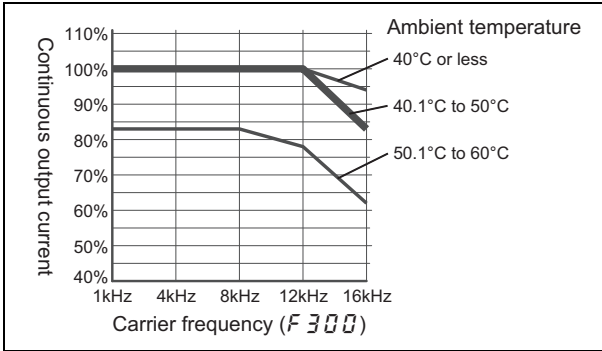


ND

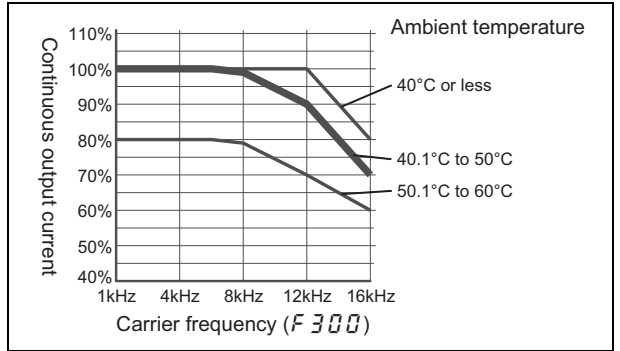


■ VFAS3-4150PC

HD

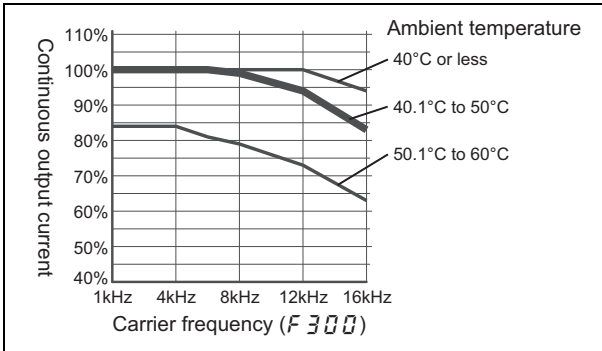


ND

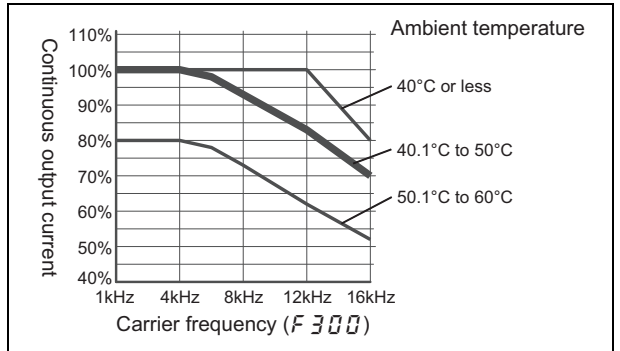


■ VFAS3-4185PC

HD

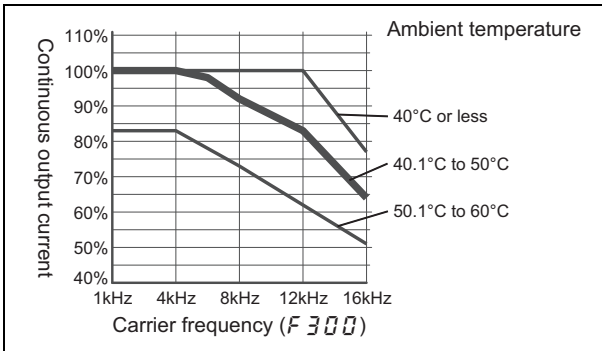


ND

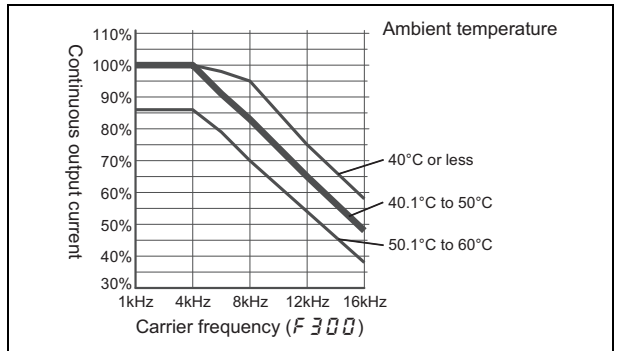


■ VFAS3-4220PC

HD

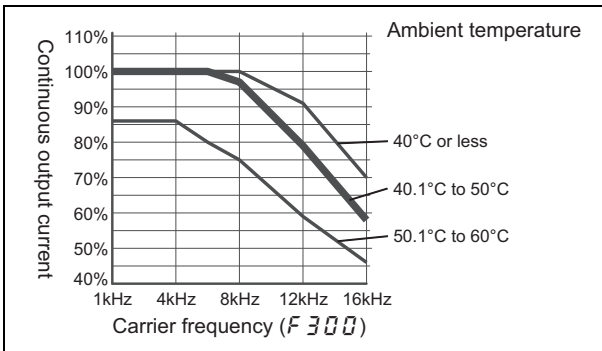


ND

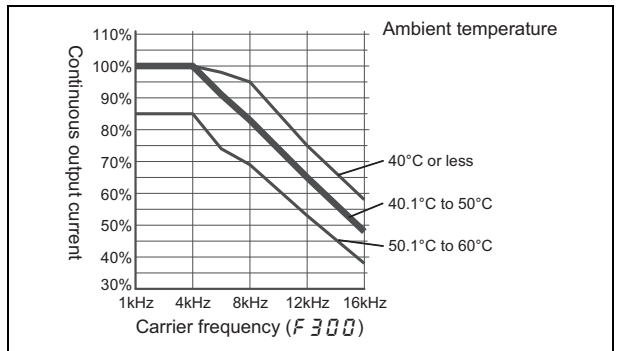


■ VFAS3-4300PC

HD

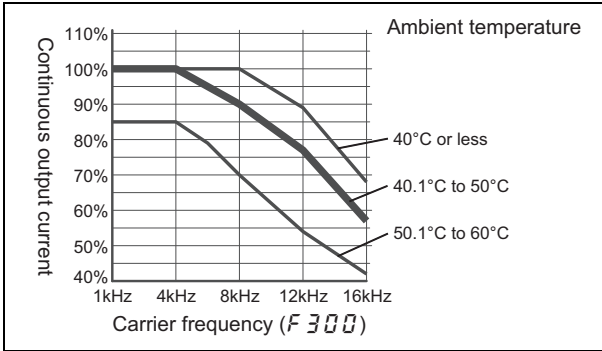


ND

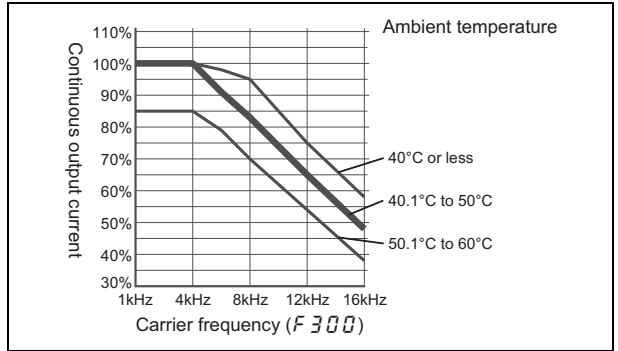


■ **VFAS3-4370PC**

HD

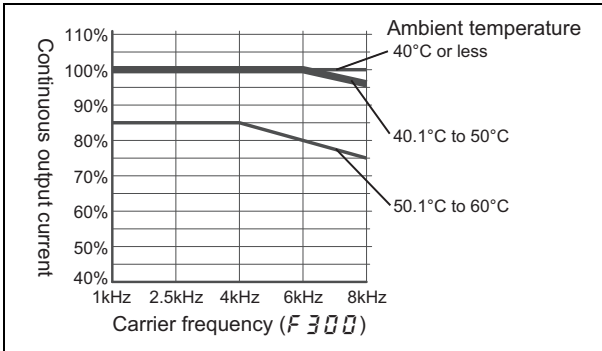


ND

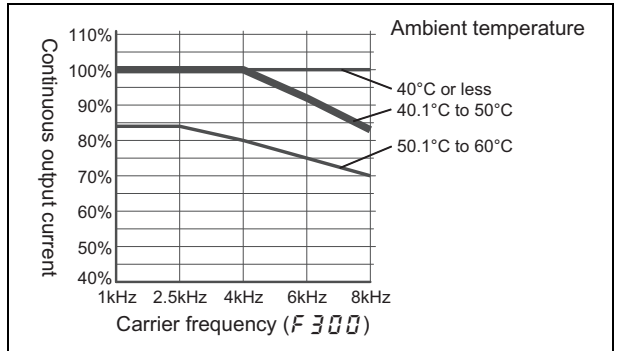


■ **VFAS3-4450PC**

HD

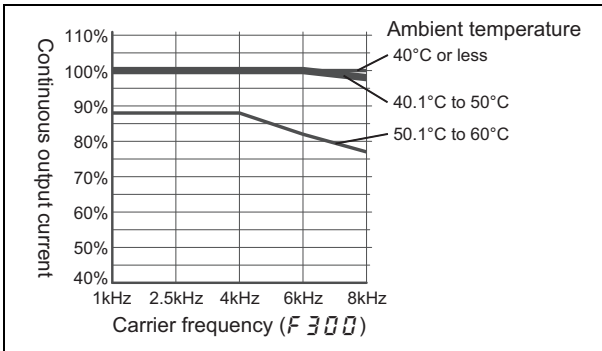


ND

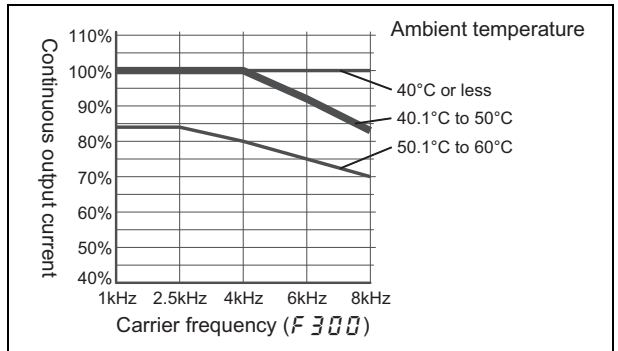


■ **VFAS3-4550PC**

HD

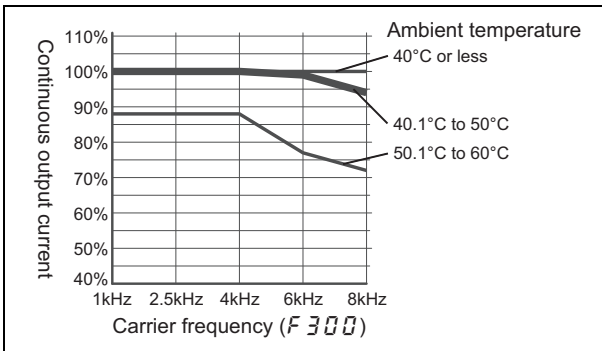


ND

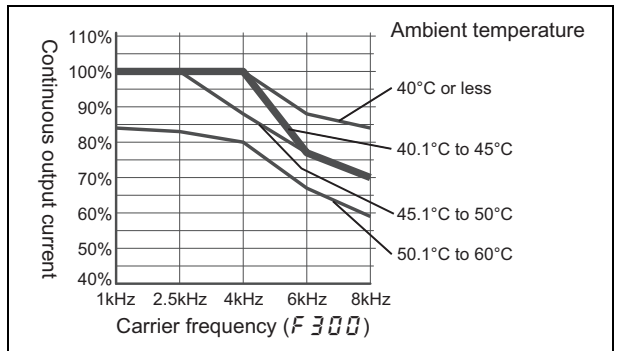


■ **VFAS3-4750PC**

HD

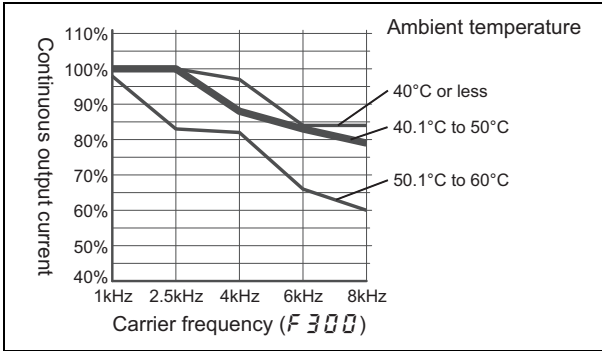


ND

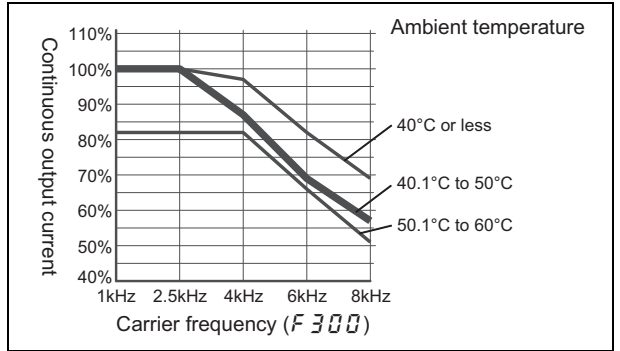


■ VFAS3-4900PC

HD

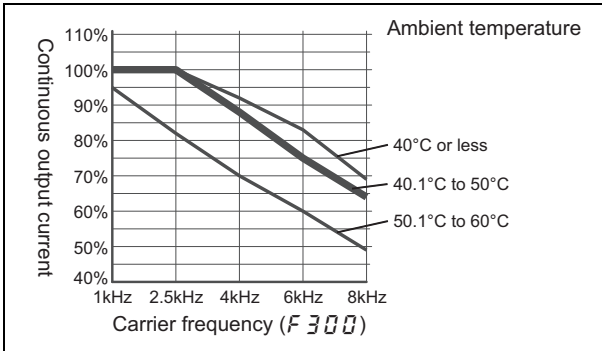


ND

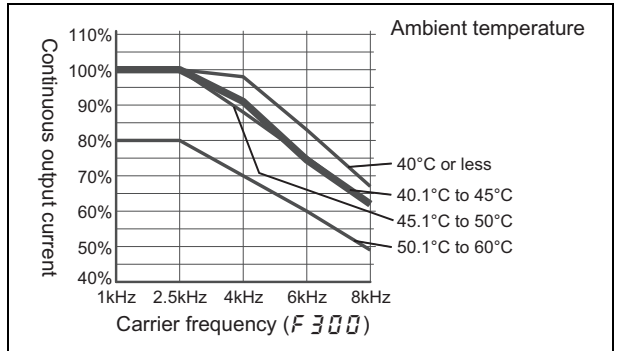


■ VFAS3-4110KPC

HD

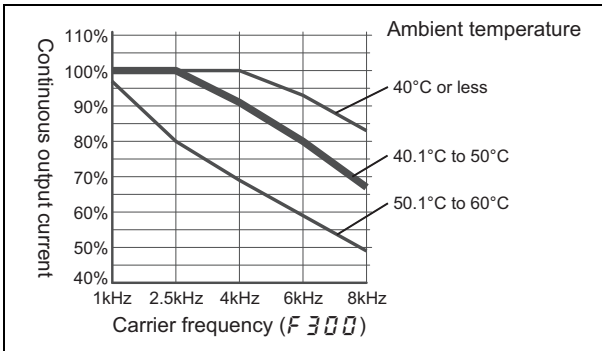


ND

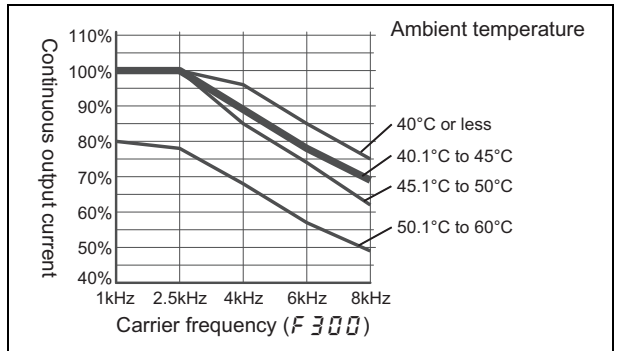


■ VFAS3-4132KPC

HD

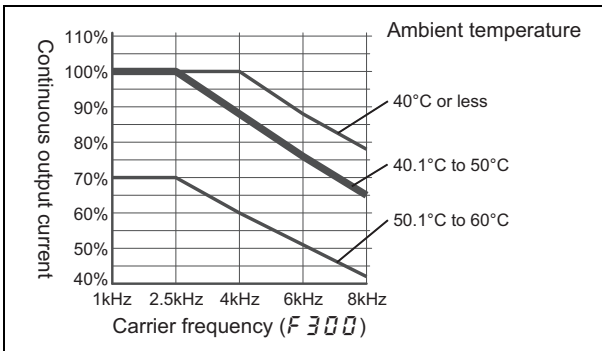


ND

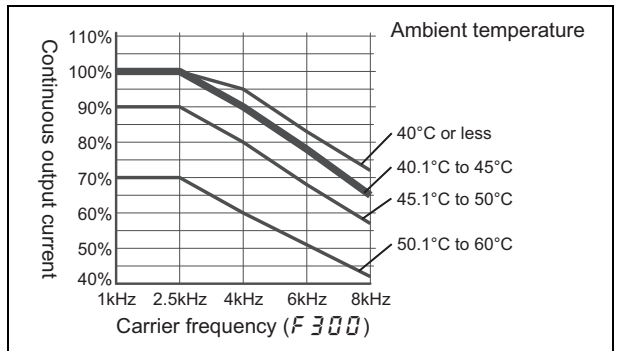


■ VFAS3-4160KPC

HD

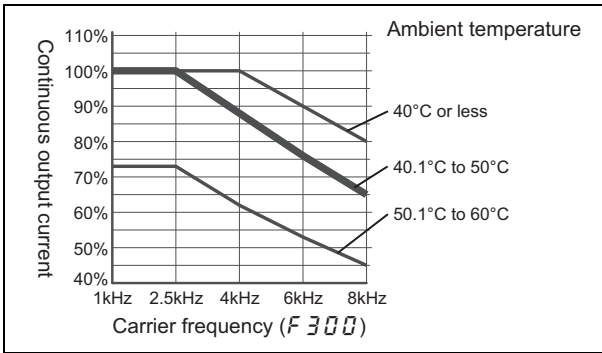


ND

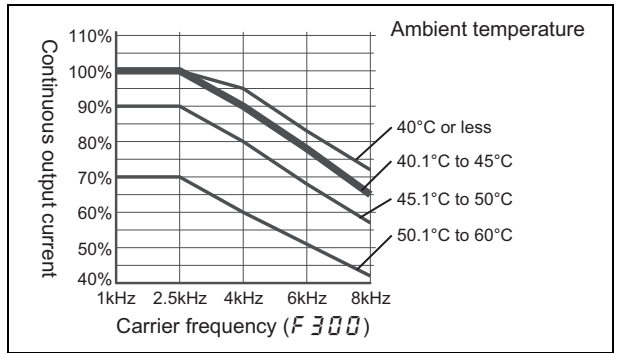


■ **VFAS3-4200KPC**

HD

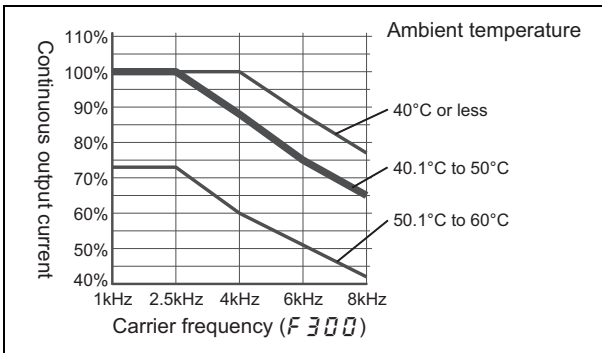


ND

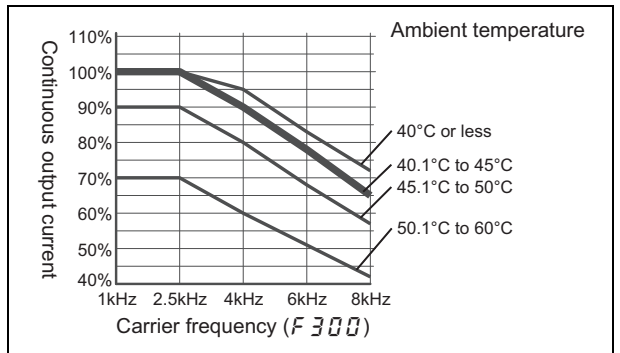


■ **VFAS3-4220KPC**

HD

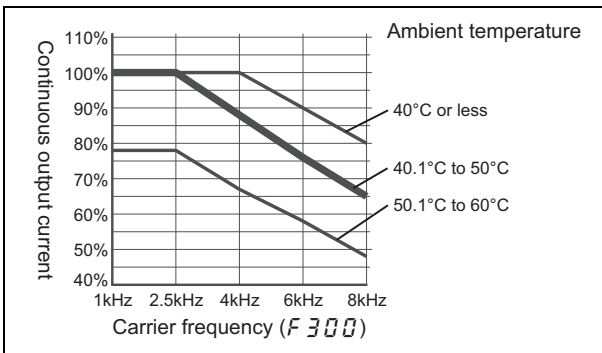


ND



■ **VFAS3-4280KPC**

HD



ND

