

TOSVERT VF-A7/P7

Instruction Manual for Parameters

F480 and *F481*

Thank you for purchasing the Toshiba industrial inverter "TOSVERT VF-A7/P7".

This manual describes the functions of the *F480* and *F481* parameters for the inverter TOSVERT VF-A7/P7.

Title	Communication No.	Function	Adjustment range	Minimum setting unit (Panel/Communication)	Default setting
<i>F480</i>	0480	Exciting strengthening coefficient	0~255	1/1	64
<i>F481</i>	0481	Over-excitation cooperation	0 : Enabled 1 : <i>F480</i> effective 2 : Enabled (Overcurrent control) *1 3 : <i>F480</i> effective (Overcurrent control) *1	-	0

*1 These are not before CPU version V312.

Title	Write during running	Vector control			V/f Constant
		Speed control	Torque control	Position control	
<i>F480</i> <i>F481</i>	Enabled	/-	/-	-	-

Sensorless vector / Vector with sensor (: valid, - : invalid)

1. Functions

These parameters are used to adjust the reference excitation current characteristic in low-speed range when sensorless vector control is exercised.

By default, these parameters are set so that the excitation current will be boosted in low-speed range to increase the output torque.

When the overcurrent occurs in a start and a low-speed driving, it can be controlled by setting *F481* to 2 or 3.

2. Parameter setting

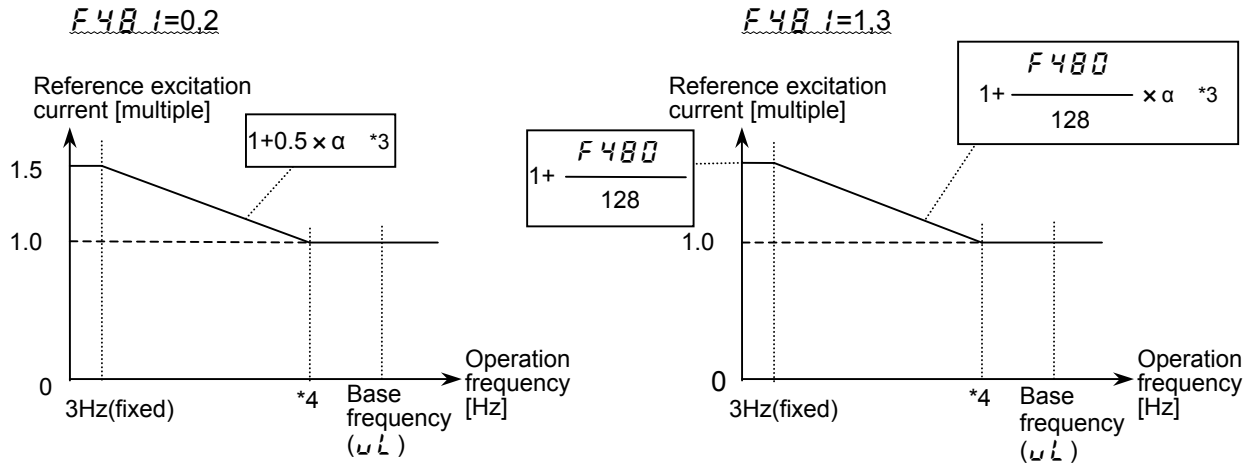
Title	Function	Adjustment range	Setting value
<i>Pt</i>	Motor control mode selection	0~9	2,3,4,6,7
<i>F480</i>	Exciting strengthening coefficient	0~255	0~255 *2
<i>F481</i>	Over-excitation cooperation	0 : Enabled 1 : <i>F480</i> effective 2 : Enabled (Overcurrent control) *1 3 : <i>F480</i> effective (Overcurrent control) *1	0~3

*1 These are not before CPU version V312.

*2 Selecting a too large coefficient might cause the inverter to trip.

You have to set parameter *F481* to 1 or 3 for the setting of parameter *F480* to take effect.

3. Reference excitation current characteristic



*3 : α is a coefficient between 0 and 1. It is 1 at 3Hz, while it is 0 at the frequency at point *4 shown above.
 *4 : The operation frequency at this point varies depending on the ωL setting and the motor characteristics. For example, if ωL is set at 60Hz and the motor capacity is 200V-3.7kW, the frequency at this point is approximately 45Hz.

4. How to set the parameter

- a) If the default settings allow the motor to produce enough torque, there will be no need to change the settings of these parameters.
- b) If you want to decrease the excitation current when no load is applied, set F4B1 to 1 and decrease the setting of F4B0 to bring the current down to the desired level.
- c) If a brake is applied at the start of operation, set F4B0 to 0 and F4B1 to 1 so that the excitation current will not be boosted.
- d) When the overcurrent occurs in a start and a low-speed driving, set F4B1 to 2 or 3.