

TOSVERT VF-A7/P7

**Torque Command Filter/Speed Gain Switching
Function Operating Manual**

Toshiba Schneider Inverter Corporation

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1. INTRODUCTION

Thank you for purchasing the Toshiba industrial inverter “TOSVERT VF-A7/P7”

This manual describes the functions of the F379 and F396 to F398 parameters for the industrial-use inverter TOSVERT VF-A7/P7.

2. FUNCTIONS

Use the F379 and F396 to F398 parameters when speed response is to be switched between a low-speed zone and a high-speed zone prior to starting speed control by means of vector control. Response can be improved for the applications in which the inertial moment of the load significantly changes according to the particular operating frequency.

When two sets of speed control gain levels (proportional, integral, and filtering) are assigned, automatic switching is possible by specifying the desired frequency for the operating frequency via parameter “F505”.

3. Related Parameters

Title	Communication No.	Function	Adjustment range	Minimum setting unit (Panel/Comm.)	Default	Writing during operation	Vector control			Position control
							V/f constant control	Speed control	Torque control	
F421	0421	Torque reference filter	10.0 ~ 199.9 200.0 (Without filter)	1/0.1	200.0	Enabled	*/*	-/-	-/*	-
F376	0376	Speed loop proportional gain	3.2 ~ 1000	0.1/0.1	For each model	Enabled	*/*	-	-/*	-
F377	0377	Speed loop integral gain	0.1 ~ 200.0 rad/s	0.1/0.1	For each model	Enabled	*/*	-	-/*	-
F396	0396	Torque reference filter #2	10.0 ~ 199.9 200.0 (Without filter)	1/0.1	200.0	Enabled	*/*	-/-	-/*	-
F397	0397	Speed loop proportional gain #2	3.2 ~ 1000	0.1/0.1	For each model	Enabled	*/*	-	-/*	-
F398	0398	Speed loop integral gain #2	0.1 ~ 200.0 rad/s	0.1/0.1	For each model	Enabled	*/*	-	-/*	-
F379	0379	Speed loop parameter ratio	0.01 ~ 10.00sec	0.01/0.01	1.00	Disabled	*/*	-	-/*	-
F505	0505	Acc/dec switching frequency #1	0.0 ~ FH	0.01/0.01	0.0	Enabled	*/*	-/-	-	*

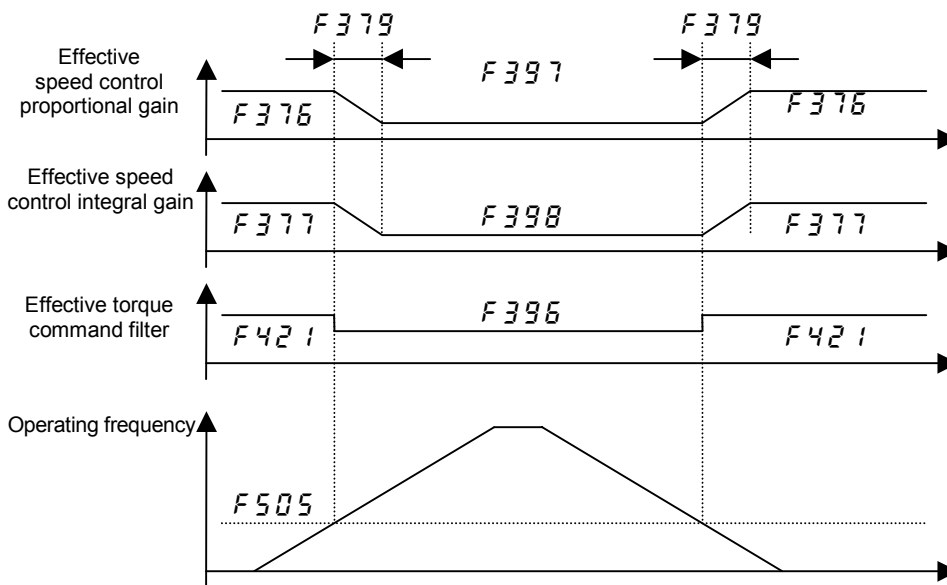
Sensorless vector/Sensor vector

* : Valid, - : Invalid

4. OPERATION

"F421" (Torque reference filter)	}	Speed control gain #1
"F376" (Speed loop proportional gain)		
"F377" (Speed loop integral gain) [rad/s]		
"F396" (Torque reference filter #2) *1	}	Speed control gain #2
"F397" (Speed loop proportional gain #2)		
"F398" (Speed loop integral gain #2) [rad/s]		

*1: Speed control gain #1/speed control gain #2 switching does not function if F396 = 200.



When the operating frequency is within the setting range of acc/dec switching frequency parameter "F505" (acc/dec switching frequency #1), parameters "F376", "F377", and "F421" are valid.

When the operating frequency is greater than the setting of acc/dec switching frequency parameter "F505" (acc/dec switching frequency #1), parameters "F396", "F397", and "F398" are valid.

At the required switching position, the proportional or integral gain level will be changed to its target value when the setting of time in parameter "F379" is reached.