

TOSVERT VF-A7/P7

**The function manual of the parameter
“F451” “F452” “F453”**

Toshiba Schneider Inverter Corporation

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1. Introduction

Thank you for your purchase of our industrial inverter “TOSVERT VF-A7/P7”.
 This manual gives explanations of parameters “*F 45 1*, *F 45 2*, *F 45 3*” for the VF-A7/P7 inverter.

2. Functions

In the case the inverter is applied to lifting machines (crane, hoist, etc.), these parameters are used for cooperation with the mechanical brake operation (*F 45 1*) and load falling prevention in winding up/down operation (*F 45 2*, *F 45 3*).

3. Related parameters

Title	Commu- nication No	Function	Adjustment range	Min. unit (panel/ communication)	Default setting	Write during running	Vector control			V/f Constant
							Speed control	Torque control	Position control	
<i>F 45 1</i>	0451	Torque limit mode	0: Standard, 1: without speed cooperation	-	0	Enabled	/	-	-	
<i>F 45 2</i>	0452	Continuous stall trip detection time during power running	0.0 ~ 1.0 [s]	0.01/0.01	0.0	Enabled	/	-	-	
<i>F 45 3</i>	0453	Stall prevention during regeneration	0: Stall 1: Stall is prevented	-	0	Enabled	/	-	-	

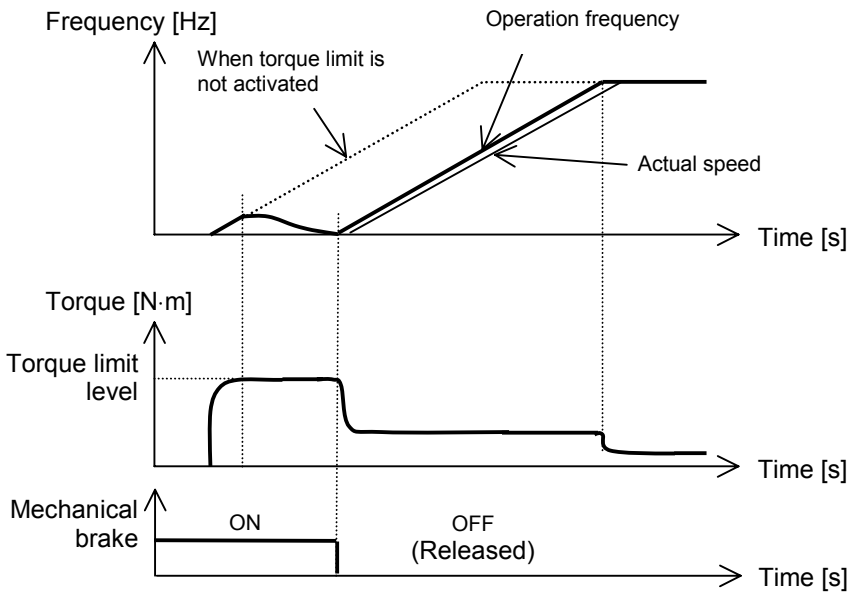
Sensorless vector/vector with sensor (/ : Valid , - : Invalid)

4. Function of parameter *F451*

When the inverter is used in combination with the mechanical brake of a lifting machine (crane, hoist, etc.), the load fall by torque reduction can be prevented by carrying out the shortest acceleration of the mechanical brake operation delay time.

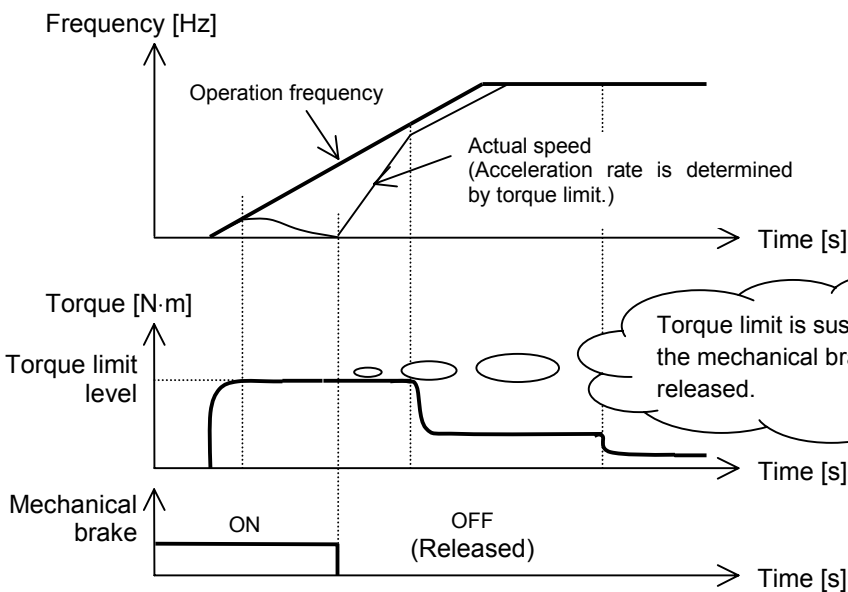
Moreover, this parameter raises response in inching operation in order to control the load not to slip down.

F451 = 0 mode (standard)



Operation frequency is controlled when torque limit is activated. Therefore, actual speed is controlled to follow the operation frequency always. Since the operation frequency is raised after torque declines with release of the mechanical brake, the time that the actual speed corresponds to the operation frequency is time lag in mechanical brake operation + acceleration time.

F451 = 1 mode (without speed cooperation)

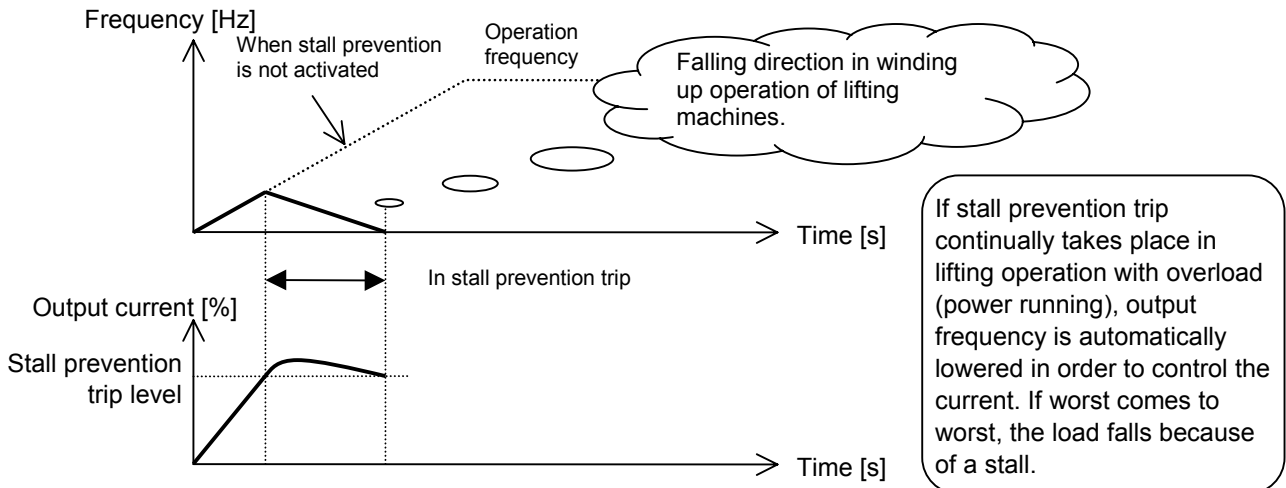


Operation frequency becomes high ahead of torque limit even when it is activated. When torque declines with release of the mechanical brake, it is sustained at the limit level and actual speed is controlled to follow the operation frequency. This mode functions not only to prevent the load from falling but to raise response in inching operation.

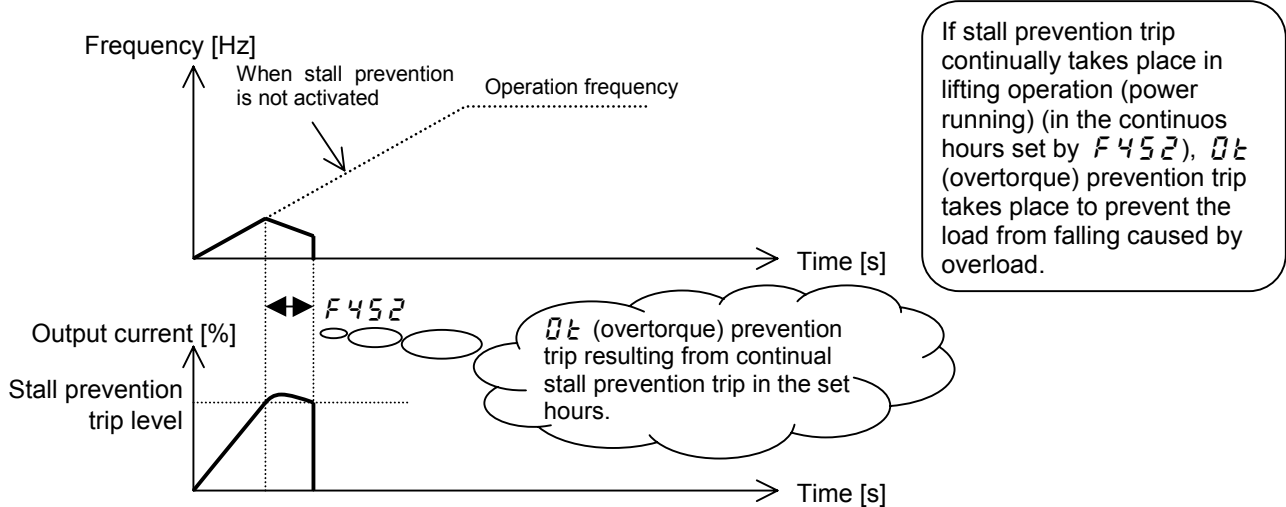
5. Function of parameter *F452*

When the inverter is used in combination with a lifting machine (crane, hoist, etc.), this function prevents the load from falling because of a stall in overload hoisting (power running).

F452 = 0.0 mode (power running without continual stall prevention trip)



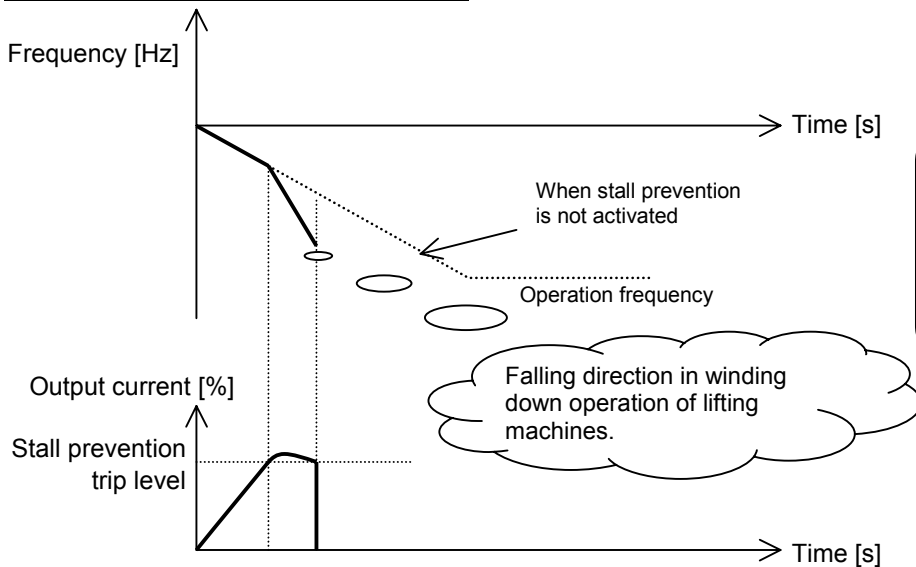
F452 = except 0.0 (power running with continual stall prevention trip)



6. Function of parameter *F453*

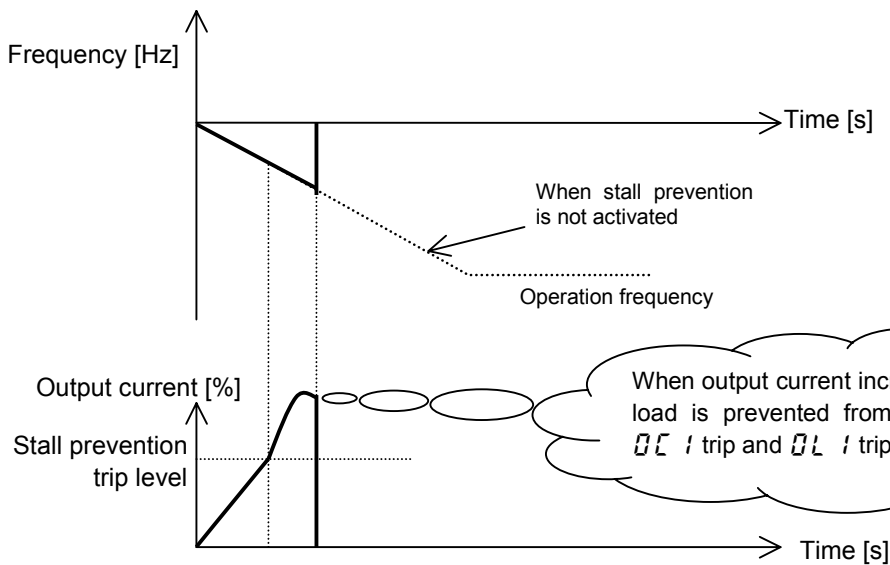
When the inverter is used in combination with a lifting machine (crane, hoist, etc.), this function controls stall prevention in winding down operation (in regeneration) in order to prevent the load from falling and accident caused by unexpected speed change.

F453 = 0 mode (stall in regeneration)



If stall prevention trip takes place in winding up operation (in regeneration), output current is automatically increased in order to control the current. If worst comes to worst, the load may fall.

F453 = 1 mode (stall is prevented in regeneration)



Stall prevention is controlled only in winding down operation (in regeneration) in order to prevent the load from falling and other accidents caused by unexpected rise in the output frequency.