

TOSVERT VF-AS3

Hit and stop control Instruction Manual

- Contents -

1. Introduction 1

2. Setting and operation 2

1. Introduction

VF-AS3 has hit and stop control for material handling including automatic warehouse and multi-story car park. The inverter decelerates to the set frequency when the signal is input, and then executes hit and stop operation. Also, it is possible to proceed to hit and stop continuation after hit and stop time elapsed. This instruction manual explains the hit and stop control of VF-AS3.

2. Setting and operation

■ Parameter setting

Title	Parameter name	Adjustment range	Unit	Default setting
F382	Hit and stop control	0: Disabled 1: Enabled 2: Enabled (Hit and stop continuation)	-	0
F383	Hit and stop frequency	0.1-30.0	Hz	5.0
F384	Hit and stop torque limit	0-100	%	100
F385	Hit and stop detection time	0.0-25.0	s	0.3
F386	Hit and stop continuation torque limit	0-100	%	50

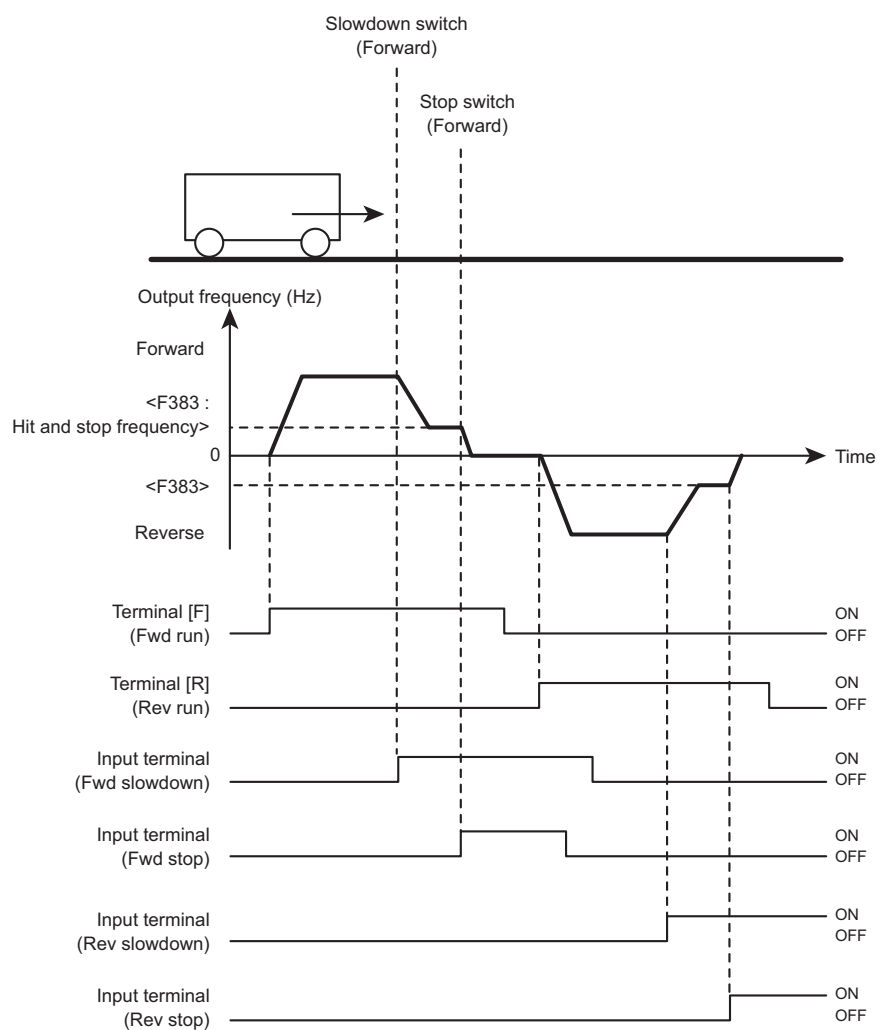
■ Setting method: Hit and stop control

The inverter decelerates smoothly to the set frequency and stops by using the maximum of four limit switches.

- 1) Set the parameter <F382: Hit and stop control>="1: Enabled".
- 2) Input the signal from the limit switches to the input terminals of the inverter. The inverter decelerates smoothly to the set frequency and stops.
Assign the following functions to unused input terminals.

Input terminal function		Action of ON
140 (141)	Fwd slowdown (inverse)	Forward run toward the setting value of <F383>
142 (143)	Fwd stop (inverse)	Stop (Forward run only)
144 (145)	Rev slowdown (inverse)	Reverse run toward the setting value of <F383>
146 (147)	Rev stop (inverse)	Stop (Reverse run only)

Setting example



■ Setting method: Hit and stop control + Hit and stop continuation

The inverter decelerates to the set frequency by the input signal and executes hit and stop operation, then, proceeds to hit and stop continuation after the elapse of hit and stop time.

The inverter decelerates to the set frequency by <F383: Hit and stop frequency> smoothly when the input terminal assigned "150: Hit and stop Fwd/Rev slowdown" is ON.

<F384: Hit and stop torque limit> is the upper limit of the output torque.

The target of hit and stop prevents the motor rotating. After the time by <F385: Hit and stop detection time>, the upper limit of the output torque proceeds to <F386: Hit and stop continuation torque limit> and maintains stop on contact state.

Output the signal from the output terminal assigned "174: During hit and stop" when the upper limit of the output torque proceeds to <F386>. "During hit and stop" signal turns off when the run command turns off or the inverse run command (reverse run command during forward run, or forward run command during reverse run) turns on.

- 1) Set the parameter <F382: Hit and stop control>="2: Enabled (Hit and stop continuation)"
- 2) The inverter decelerates to the set frequency by <F383: Hit and stop frequency> smoothly when the input terminal assigned "150: Hit and stop Fwd/Rev slowdown" is ON.
Set <F383> according to the motor.
In case of gear motor, it is recommended to regard default setting as standard value. Be careful that the large value of <F383> may break the gear.
- 3) Set <F384> to <F386> according to the motor.
Too small value of <F386> may lead to the control instability.
- 4) The inverter decelerates smoothly to the set frequency and stops when the input terminals are ON.
Assign the following functions to unused input terminals.

Input terminal function		Action of ON
140 (141)	Fwd slowdown (inverse)	Forward run toward the setting value of <F383>
144 (145)	Rev slowdown (inverse)	Reverse run toward the setting value of <F383>
150 (151)	Hit and stop Fwd/Rev slowdown (inverse)	Run toward the setting value of <F383>

- 5) Output the "During hit and stop" signal from the output terminal if necessary.
Assign "174: During hit and stop" to an unused output terminal.

Memo

- The signal outputs from the output terminal depending on torque set by <F384> and continuous time set by <F385>.
Please note that the inverter determines the stop on contact state and outputs the signal when the load torque continues value of <F384> or more for time set by <F385> before contacting to the target.

Setting example

