

TOSVERT VF-AS3

Traverse operation Instruction Manual

- For textile machines -

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1. Introduction

VF-AS3 has a traverse function useful especially for textile machines.

The manual explains about the traverse function.

Please read this instruction manual carefully along with the VF-AS3 instruction manual.

2. Setting and operation

Parameters

Title	Parameter name	Adjustment range	Unit	Default setting
F980	Traverse operation	0: Disabled 1: Enabled	-	0
F981	Traverse Acc time	0.1-120.0	s	25.0
F982	Traverse Dec time	0.1-120.0	s	25.0
F983	Traverse step	0.0-25.0	%	10.0
F984	Traverse jump step	0.0-50.0	%	10.0

Setting and operation

To perform traverse operation, you need to input the traverse operation signal.

Assign "134: Traverse operation" to an unused input terminal. When you don't need ON/OFF, set "134" to the parameters "Always active function" <F110>, <F127> or <F128>.

The settings of the parameters (F981 to F984) take effect once in every half cycle of traverse operation.

$$\text{Traverse frequency (Hz)} = \text{Reference frequency (Hz)} \times \text{<F983> (\%)} \\ \text{Peak jump frequency (Hz)} = \text{Traverse frequency (Hz)} \times \text{<F984> (\%)}$$

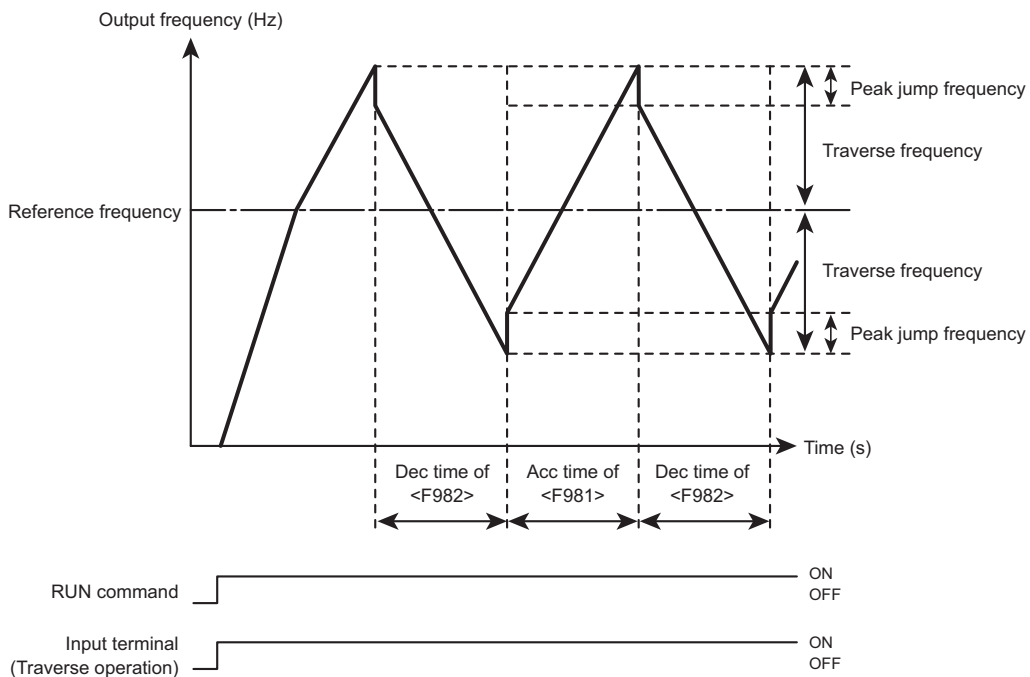


Fig. 2-1: Traverse operation

When the traverse operation signal is turned off during traverse operation, the inverter operation changes from traverse operation to operation by frequency command according to the acceleration/deceleration time setting. (See Fig. 2-2)

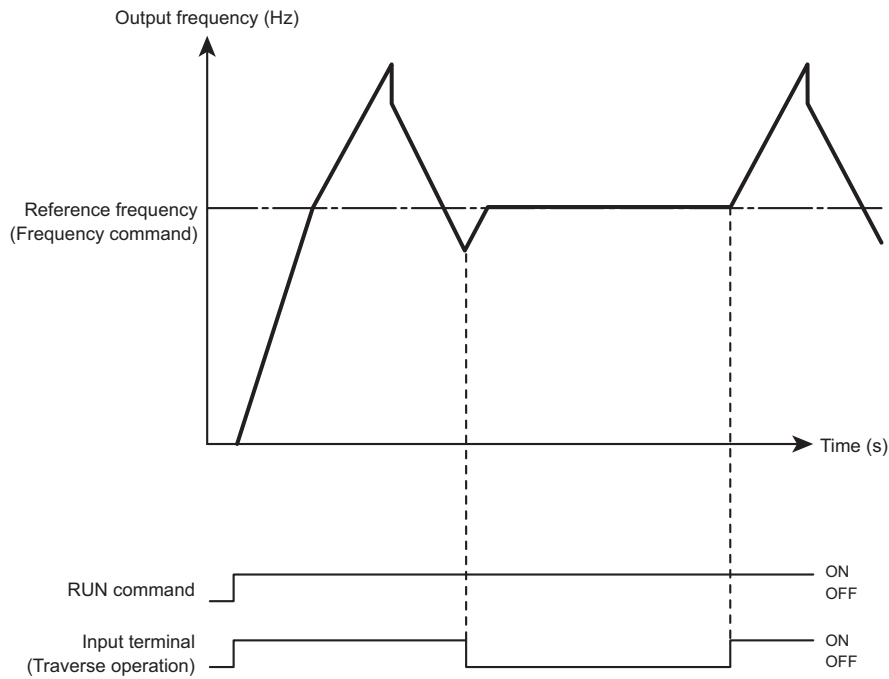


Fig. 2-2 When the traverse operation signal is off

■ **Output of traverse operation status**

The traverse operation signals can be output from the output terminals.

Assign "124: During traverse operation" and "126: During traverse Dec" to unused output terminals.

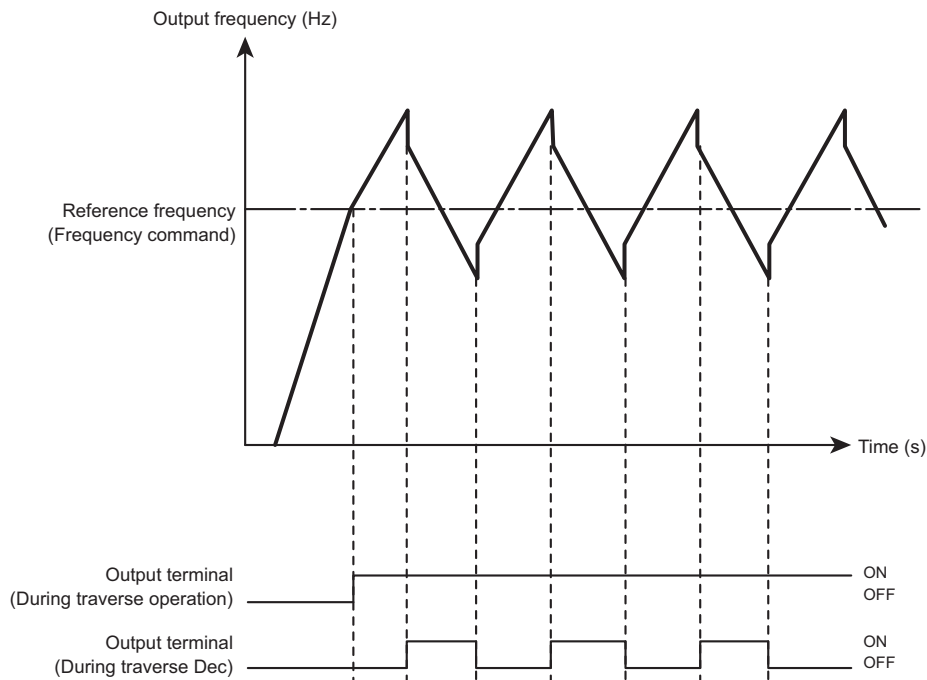


Fig. 2-3 Traverse output signals

3. Caution

■ **When the traverse reference is input by a potentiometer or analog signal**

When you use an external potentiometer or analog signal for reference frequency, an error of analog input may occur. If such an error is a problem, the operation panel or the preset speed operation should be used instead. You can check the reference frequency by the monitor mode (Frequency command value).

■ **The range of the traverse reference frequency and the output frequency**

The range of the traverse reference frequency and the output frequency are below.
 Traverse reference frequency : <LL: Lower limit frequency> to <UL: Upper limit frequency>
 Output frequency : <F243: End frequency>+0.01Hz to <UL: Upper limit frequency>

The following output signals are effective to the traverse reference frequency during traverse operation.

- “0: Lower limit frequency (LL)”
- “2: Upper limit frequency (UL)”
- “4: Low-speed signal”

■ **Suspension of traverse operation**

Traverse operation does not work during acceleration/deceleration period which doesn't satisfy the starting condition of traverse.

■ **Output signal**

1) “6: Acc/Dec completed”

“Acc/Dec completed” signal is effective to the traverse reference frequency. When “Traverse operation” signal is OFF during traverse operation, “Acc/Dec completed” signal is effective to the output frequency. “Acc/Dec completed” signal is OFF in the condition that the output frequency is the outside of the frequency range set by <F102: Reach signal detection band>. (See Fig. 3-1) Furthermore, the setting of <F102> determines also the traverse operation start point. High frequency setting of <F102> enables to accelerate the machine while continuing traverse operation. Note that the traverse frequency and the peak jump frequency before acceleration completion are different from those during normal operation, and they are effective to the output frequency during acceleration. (See Fig. 3-2)

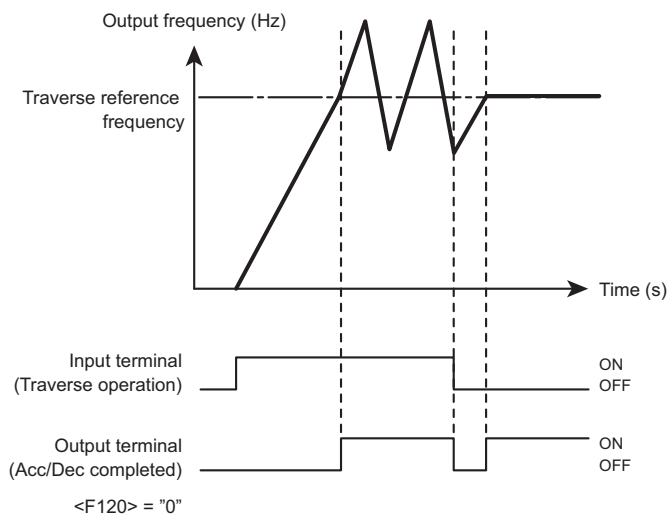


Fig. 3-1: Acc/Dec completed signal for the traverse operation when <F102>="0"

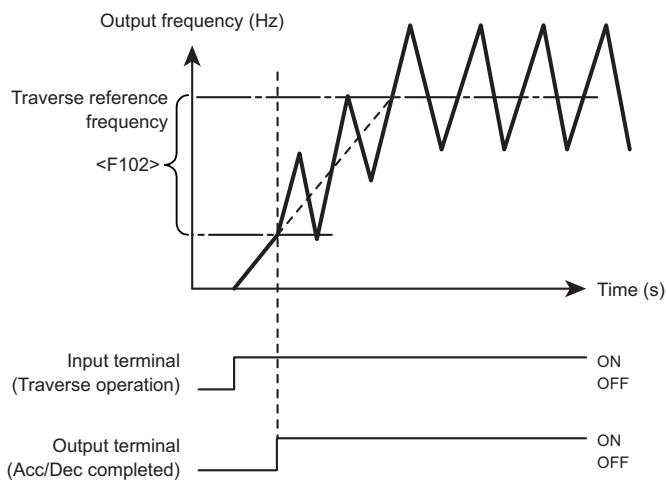


Fig. 3-2: Acc/Dec completed signal for traverse operation with <F102> setting

2) "8: Specified frequency attainment"

"Specified frequency attainment" signal is effective to the output frequency include the traverse operation.