TOSHIBA

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TOSVERT VF-S11

Braking setting functions

Toshiba Inverter Corporation

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1. Braking setting functions

F342: Braking mode selection

F343: Release frequency

F344: Release time

F345: Creeping frequency

F346: Creeping time

-Function

Setting functions to control braking timing.

- Parameter setting for braking setting function

Title	Function	Setting range	Default setting
F342	Braking mode selection	0: Disabled 1: Enabled (forward run) 2: Enabled (reverse run) 3: Enabled (operating direction)	0
F343	Release frequency	F240 ~ 20.0 [Hz]	3.0
F344	Release time	0.00 ~ 2.50 [s]	0.05
F345	Creeping frequency	F240 ~ 20.0 [Hz]	3.0
F346	Creeping time	0.00 ~ 2.50 [s]	0.10

- Parameter setting of contact output signal for braking (ex. To use RY-RC output)

Title	Function	Setting range	Setting value
F130	Output terminal selection 1A (RY-RC)	0 ~ 255	46: BR (Braking sequence output) or 47: BRN (Inversion of braking sequence output)

Note) In case of others output terminal, it is deferent from parameter title.

RY-RC: F131

FLA-FLB-FLC: F.132

- Explanation of braking setting function

At starting the motor:

When the operation signal is 'ON', the brake release signal is 'ON' after getting the flux of magnetic induction before brake releasing.

The output torque of inverter is generated before the brake is released by outputting 'the frequency of the F343 setting' to 'the direction of the F342 setting'.

The motor is able to accelerate smoothly at the same time as releasing the brake because F344 function provides 'the delay of acceleration beginning '.

At stop the motor:

When the operation signal is 'OFF', the brake close signal is 'ON' after reaching the creeping frequency of F345 setting. After that, the VF-S11 outputs creeping frequency while setting time of F346, and stops after delayed time of mechanical brake.

F342 Braking mode selection

0: Disabled

1: Enabled (forward run)

The rise operation is forward rotation of motor at RISE/DESCENT action.

The direction of inverter output frequency (F343) is forward direction regardless of FORWARD/REVERSE drive.

2: Enabled (reverse run)

The rise operation is reverse rotation of motor at RISE/DESCENT action.

The direction of inverter output frequency (F343) is reverse direction regardless of FORWARD/REVERSE drive.

3: Enabled (operating direction)

This value is for the horizontal operation.

The direction of inverter output frequency (F343) is same as direction of drive.

F343 Release frequency

The inverter outputs F343's frequency to F342's direction. This function is for generating motor torque by slipping of the restrained motor. By this, the motor starts smoothly when the brake is released.

The F343 setting value depends on load condition. The standard setting is 'the slipping frequency' at rated output of applied motor.

F344 Release time

The release time is time to maintain frequency of F344 setting at start.

The standard setting is delayed time of mechanical brake.

F345 Creeping frequency

The 'close brake signal' outputs F345's frequency while F346's setting time at stop.

The f345 setting value depends on load condition. The standard setting is

The F345 setting value depends on load condition. The standard setting is 'the slipping frequency' at rated output of applied motor.

F346 Creeping time

The creeping time is time to maintain frequency of F345.

The standard setting is a little more than delayed time of mechanical brake.

Timing chart of brake setting function