TOSHIBA

E6581228

TOSVERT VF-A7/P7

Instruction Manual for Parameter F608·F609

Toshiba Schneider Inverter Corporation

This manual is intended only to describe the typical operation and application of the product. The technical information contained in this manual does not guarantee the intellectual proprietary rights or other rights of, or grant a license to, the Toshiba Schneider Inverter Corporation or third parties, for the use of the technical information or of the product.

1.Introduction

Thank you for purchasing the Toshiba industrial inverter "TOSVERT VF-A7/P7".

This manual describes the functions of the F608 and F609 parameters for the inverter TOSVERT VF-A7/P7.

2. Function

This parameter is used when there is a need to control the rush-current suppression resistor short-circuit relay (hereinafter referred to as the “rush-current suppression relay”) in the inverter, for example, for the passage of a current through a DC line or for the connection of the DC lines of multiple inverters.

3. Related parameters

Title	Communication No	Function	Adjustment range	Min. unit (panel/ communication)	Default setting	Write during running	Vector control			V/f Constant
							Speed control	Torque control	Position control	
F608	0608	Relay injection timing for rush-current suppression	0.3～2.5 [s]	0.1/0.01	0.3	Enabled	●/●	●/●	-/●	●
F609	0609	Mode of rush-current suppression relay	0: Default 1: Interlocked with ST	-	0	Enabled	●/●	●/●	-/●	●

Sensorless vector / Vector with sensor (● : valid, - : invalid)

4. An example of the setting of F608 (Relay injection timing for rush-current suppression)

The capacitance of the smoothing capacitor in the main circuit and the initial charge time (time elapsed before the rush-current suppression relay) is activated vary depending on the capacity of the inverter. By default, the rush-current suppression relay is set so that it will operate 0.3 seconds after the completion of initial charge.

If necessary, this time lag can be changed using parameter F608.

When connecting the DC lines of multiple inverters with different capacities (especially 3.7 kW and less inverters), you should specify a long time lag (1 second or so) using F608 to prevent the occurrence of the failure described below in inverters with DC lines through which a current is passed.

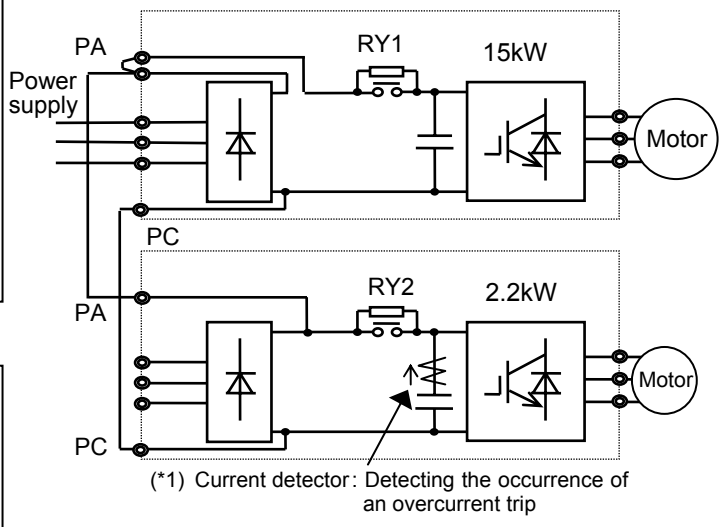
Note 1: For 3.7 kW and less inverters, as well as 18.5 and 22 kW inverters, a current detector is provided in the position shown in the figure below. (*1)

Note 2: When passing a current through the DC lines of 18.5 and 22 kW inverters, you need to provide a rush-current suppression circuit outside them, because the rush-current suppression circuit in each inverter is bypassed in this case.

For any inverters other than the above, this parameter does not need to be adjusted.

[An example of an overcurrent trip when power is turned on]
If the main circuit of the small capacity (2.2 kW) inverter is electrically charged before that of the large capacity inverter (15 kW), and RY2 closes before RY1, a discharge current will flow from the capacitor in the main circuit of the 2.2 kW inverter because of a difference in charged voltage between the circuits, with the result that an overcurrent trip will occur.

[An example of the prevention of this trip]
Change the setting of parameter F608 of the small capacity inverter (2.2 kW) from 0.3 (default) to 1.

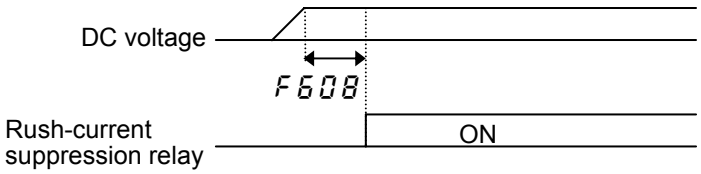


5. About parameter F609 (Mode of rush-current suppression relay)

The rush-current suppression relay usually operates under the conditions shown below, but if necessary, you can add the ON/OFF status of the ST terminal (standby signal) of the inverter to the relay activation conditions, using parameter F609.

[F609 = 0 (default)]

The rush-current suppression relay operates with the time lag set with F609 after the voltage in the DC section of the inverter has reached the specified voltage.



[F609 = 1 (interlocked with ST)]

The rush-current suppression relay operates along with the ST terminal with the time lag specified with F608 after the voltage in the DC section of the inverter has reached the specified voltage.