HCFA E600 series

Overvoltage/Overcurrent Suppression Function

浙江禾川科技股份有限公司

Product Function Instruction

产品类型	变频器	产品型号	HDv-E600-4T3.7B-000	保密等级	◉ 公开 ○ 内部分享 ○ 保密
				文档编号	
修订		作者	董建宁	发布日期	

本文档使用硬件设备和软件工具　　**部门：** 工业传动产品线

- 禾川 HDv-E600-4T3.7B-000

适用版本

无限制

文档更新和发布状态:

发布日期	版本	更新内容	发布状态
	标准机	E600 变频器使用手册	未发布

免责声明:

我们对文档内容都进行了测试与检查，但可能仍有些差错，请您谅解。如果您对本文档有个人的意见或建议，欢迎发送邮件联系作者：400@hcfa.cn。

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目 录

1. Hardware version

1.1 Hard ware

VFD：HDv-E600-4T3.7B-000 Version：standard version

IM：3 phase、380v、0.06KW、IPCS（Induction motor-TECO）

2. Overvoltage suppression function parameter settings

If the bus voltage exceeds the overvoltage stall action voltage (P04.25), it indicates that the electromechanical system is already in power generation mode (motor speed > output frequency). The overvoltage stall will take effect, adjusting the output frequency, and the actual deceleration time will be automatically extended to avoid trip protection. If the actual deceleration time does not meet the requirements, the over-excitation gain can be appropriately increased.

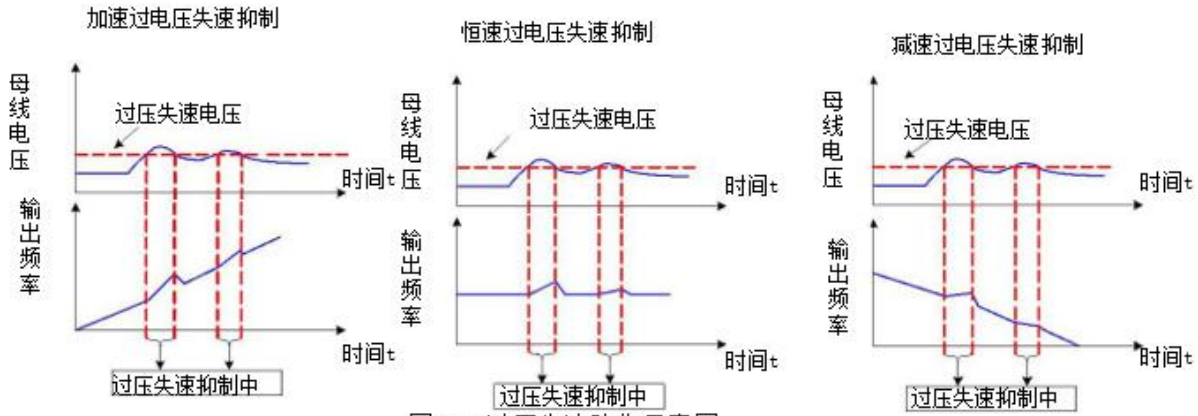

图6-40过压失速动作示意图

Parameters	Function	Default	Range	Description
P04.25	Overvoltage stall action voltage	130	120~150	
P04.28	Overvoltage stall voltage gain	30	0~100	
P04.08	VF over-excitation gain	64	0~200	
P04.17	VF oscillation suppression gain	40	0~100	

When using a braking resistor, installing a braking unit, or using an energy feedback unit, please note the following:

●Set the P04.28 "Over-excitation Gain" value to "0", otherwise it may cause excessive current during operation.

3. Overcurrent suppression function usage method

During acceleration, constant speed, and deceleration processes, if the current exceeds the overcurrent stall action current (default value 150%, representing 1.5 times the inverter's rated current), the overcurrent stall will activate, causing the output frequency to begin decreasing. Once the current returns below the overcurrent stall point, the frequency will start accelerating upward toward the target frequency. The actual acceleration time is automatically extended. If the actual acceleration time does not meet requirements, in the high-frequency range, the motor drive current is relatively small compared to the rated frequency. At the same stall current, the motor speed drops significantly. To improve the motor's operating characteristics, the stall action current above the rated frequency can be reduced. In applications such as centrifuges where the operating frequency is high, multiple times weaker magnetic field is required, and the load inertia is large, this method has a good effect on acceleration performance and effectively prevents motor stall.

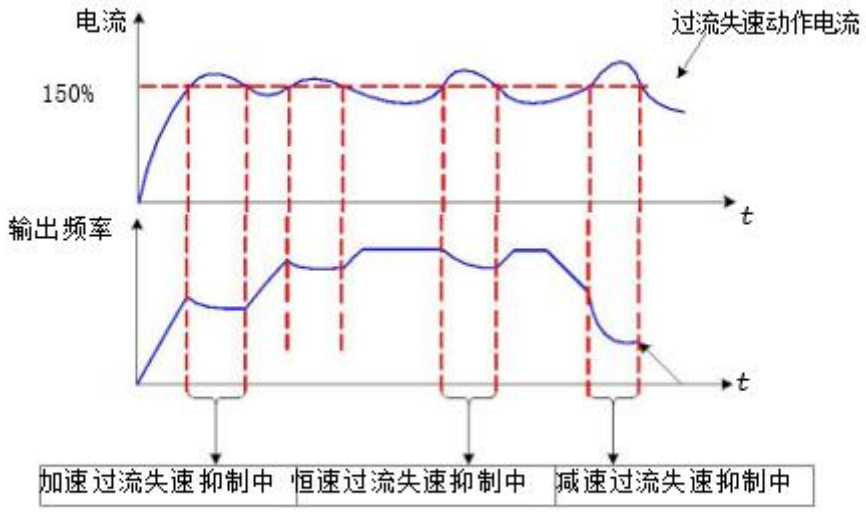

图6-38过流失速动作示意图

Parameter	Function	Default	Range	Description
P04.11	Overcurrent stall action current	150%	50%~200%	Current for Activating Overcurrent Stall Suppression Action
P04.13	Overcurrent stall suppression gain	20	0~100	A higher value for this setting improves overcurrent suppression effectiveness. However, if set too high, it may cause current oscillation. If cycle-by-cycle current limiting or similar issues persist on-site after enabling overcurrent suppression, appropriately increase this value.

High-power motors with carrier frequencies below 2 kHz may experience insufficient torque due to increased pulsating current, causing the cycle-by-cycle current limiting response to activate before the overcurrent stall prevention action. In this case, please reduce the overcurrent stall action current.