CHAPTER 7 ERROR MESSAGE AND TROUBLESHOOTING

The AC drive has a comprehensive fault diagnostic system that includes various alarms and fault messages such as over-voltage, low-voltage and over-current. Once a fault is detected, the corresponding protective functions will be activated, and the AC drive will stop the output and the motor will then coast to stop. The following faults are displayed as shown on the AC drive digital keypad panel. Once the fault occurred, eliminate it first, and then press the RESET button after 5 seconds to reactivate the operation.

Problems and Solutions

Code Displayed	Error Explanations	Treatments
	OC: output current of the AC drive exceeds the OC level	◆ Extend the accel/decel time ◆ Check whether the motor rating and the AC drive rating match up with each other ◆ Check whether there is short-circuit among U-V-W of the AC drive ◆ Check whether the wiring to the motor is short-circuited or grounded ◆ Check whether the screw between the AC drive and the motor is tightened or not ◆ Check whether the motor is over loaded
	OV: DC voltage of the main circuit exceeds the over-voltage detection level 230 V Series: about 400V 460 V Series: about 800V	◆ Check whether the input voltage is within the scope of the rated input voltage of the AC drive, and monitor whether there is any occurrence of the voltage transients ◆ If it is of the motor inertia uprising voltage that caused the exceeding voltage on the DC high-voltage side within the AC drive, the solution is to extend the accel/decel time or install the braking resistor (optional)
	OH1: radiation base over-heat Temperature of the cooling fan of the transistor module exceeds the allowable value	◆ Check whether the fan is functioning right and whether its ambient temperature is within the rated temperature

7

Code Displayed	Error Explanations	Treatments
	OL: AC drive overload Output current exceeds the AC drive-bearable current; e.g. could sustain for 60 seconds if the output is 150% of the AC drive rated current.	◆ Decrease the loading and extend the acceleration time ◆ Check whether the motor is overloaded ◆ Decrease the (Pr. 07-02) torque level-up setting ◆ Increase the AC drive output capacity
	OL1: motor overload Internal electronic thermal relay protections	◆ Decrease the loading ◆ Check whether the motor is overloaded ◆ Check whether the rated current value of the motor (Pr. 07-00) is appropriate ◆ Check the electronic thermal relay's function setup ◆ Increase the motor capacity
	OL2: motor overload Motor with exceedingly great loading	◆ Check whether the loading of the motor is too great ◆ Check the setting of the over-torque detection level (Pr. 06-03 ~ 06-05)
	External EF terminal closed, and the AC drive would stop the output	◆ Eliminate the fault source and then press the RESET button
	Fault occurred within the protection circuit of the controller	◆ Check every appliance that connects to the AC drive ◆ Return to the factory
	Over-current during accel	◆ Check whether the screw between the AC drive and the motor is tightened or not ◆ Check whether the U-V-W output connection cord is of poor insulation ◆ Increase the decel time ◆ Decrease the (Pr. 07-02) torque level-up setting ◆ Replace with the AC drive that possesses greater output capacity

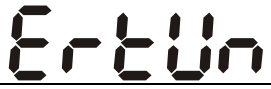
DELTA ELECTRONICS, INC. ALL RIGHTS RESERVED

Code Displayed	Error Explanations	Treatments
	Over-current during decel	◆ Check whether the output wiring is of poor insulation ◆ Extend the decel time ◆ Replace with the AC drive that possesses greater output capacity
	Over-current during operation	◆ Check whether the output wiring is of poor insulation ◆ Check whether the motor is blocked during operation ◆ Replace with the AC drive that possesses greater output capacity
	Grounding circuit protections. This message is displayed when the AC drive detects that the output terminal is grounded and that the grounding current exceeds 50% of the AC drive's rated current. Note: This is a protection towards the AC drive rather than the personnel.	◆ Check whether the connection to the motor is short circuited or grounded ◆ Check whether the IGBT power module is functioning right ◆ Check whether the wiring on the output side is of poor insulation
	PG with a broken cord	◆ Check the PG connection and whether the motor is blocked
	DC high-voltage side is exceedingly low within the AC drive	◆ Check whether the input power voltage is normal ◆ Check whether the loading will be put on another unexpected heavy loading ◆ Whether the 3-phase model is of the single-phase power input or the phase-lacking
	IC data WRITE fault within the interior memory	◆ Return to the factory
	IC data READ fault within the interior memory	◆ Press the RESET button to reset the parameter to the factory setting ◆ Return to the factory if the previous method is not working

7

Code Displayed	Error Explanations	Treatments
	AC drive's detection circuit fault	◆ Return to the factory
	When this function is set for the external multi-function input terminals (MI1~MI6), the AC drive will stop the output	◆ After the signal source is eliminated, "bb" disappeared immediately
	SC: loading with short circuit Output side of the AC drive is short circuited	◆ Check whether the motor's resistance and insulation are functioning right
	Braking transistor fault	◆ Return to the factory
	Braking transistor over-heat	◆ Check the fan and the ambient temperature ◆ Review the braking time and the braking resistor's rate of usage
	Broken fuse The transistor module of the main circuit is broken A fused DC circuit fuse	◆ Check whether the fuse of the transistor module is functioning right ◆ Check whether the loading side is short circuited or grounded
	The A/D1 changer within the CPU is defected	◆ Replace the controller or the current sensor
	The A/D2 changer within the CPU is defected	◆ Replace the controller or the current sensor
	PID motion error	◆ Check the PID feedback wiring ◆ Check whether the setting of the parameter is appropriate
	ACI with a broken cord	◆ Check the wiring of ACI
	Current message error while the drive is stopped	◆ Return to the factory

DELTA ELECTRONICS, INC. ALL RIGHTS RESERVED

Code Displayed	Error Explanations	Treatments
	R1 setting error	◆ Re-do the setting or execute the Tuning function
	Fan fault	◆ Check whether the fan is blocked ◆ Return to the factory
	Power input phase-lacking Phase-lacking within the input power of the AC drive Three imbalanced conditions existed within the input voltage	◆ Check whether the power voltage is normal ◆ Check whether the screw at the input power terminal is tightened
	Other faults	◆ Reserved
	The motor parameter -Tuning- failed	◆ Re-check the wiring and reset the parameter
	Communication error	◆ Check whether the communication signal is counter-connected (RJ11) ◆ Check whether the communication form is correct
	Upper and lower legs of PWM are of the same LOW level	◆ Return to the factory
	KEYPAD communication overtime	◆ Check whether the communication circuit is well-conducted
	RS485 communication overtime	◆ Check whether the communication circuit is well-conducted

7