TROUBLE SHOOTING

AC motor drive is provided with functions of warning and protection such as over voltage, low voltage and over current. Once fault occurs, protection function shall act, AC motor drive output stop, fault contactor act and also free running of motor shall stop. For causes and corrective measures of fault, display of fault shall be taken for reference. The alarm records will be stored into the computer memory of AC motor driver. Attention shall be paid that RESET key, would be available only after the fault has been eliminated.

6.1 Failures & Failure Elimination

Display	Description	Possible reason	Corrective-measures
SC	Short circuit fault	1.Accelerate too fast. 2.Internal damage of IGBT. 3.Malfunction caused by interference. 4.Whether the grounding is good.	1.Increase acceleration time. 2.Seek support. 3.Check whether the peripheral equipment has a strong interference source.
oc 1	Overcurrent during acceleration	1.Accelerate too fast. 2.The input power voltage is low. 3.The power of the inverter is too small. 4.No parameter learning is performed during vector control. 5.Manual torque boost or V/f curve is not suitable. 6.The motor is rotating when starting. 7.There is a short circuit in the inverter output circuit.	1.Increase the acceleration time. 2.Check the input power. 3.Select a inverter with a higher power. 4.Perform parameter self-learning. 5.Adjust manual lifting torque or V/f curve. 6.Choose speed tracking or start after the motor stops. 7.Eliminate peripheral faults.
oc2	Overcurrent during deceleration	1.Decelerate too fast. 2.Large load inertia torque. 3.The power of the inverter is too small. 4.No parameter learning is performed during vector control. 5.There is a short circuit in the inverter output circuit.	1.Increase the deceleration time. 2.Add appropriate energy consumption brake components. 3.Select a frequency converter with a higher power. 4.Perform parameter self-learning. 5.Eliminate peripheral faults.
oc3	Overcurrent at constant speed	1.Abrupt or abnormal load. 2.The input power voltage is low. 3.The power of the inverter is too small. 4.No parameter learning is performed during vector control. 5.There is a short circuit in the inverter output circuit.	1.Check the load or reduce the sudden change of load. 2.Check the input power. 3.Select a frequency converter with a higher power. 4.Perform parameter self-learning. 5.Eliminate peripheral faults.
ou 1	Overvoltage during acceleration	1.The input voltage is abnormal. 2.After a momentary power failure, restart the rotating motor.	1.Check the input power. 2.Avoid restarting after stopping.
ou2	Overvoltage during deceleration	1.Decelerate too fast. 2.Large load inertia. 3.The input voltage is abnormal.	1.Increase the deceleration time. 2.Increase energy consumption brake components. 3.Check the input power.
ou3	Overvoltage at constant speed	1.Abnormal changes in input voltage. 2.The load inertia is large.	1.Install input reactor. 2.Plus suitable energy consumption brake components.
Uu	BUS undervoltage	1.The input power supply voltage is low. 2.Instant power outage. 3.The circuit board is abnormal.	1.Check the input power 2.Reset fault 3.Seek service

Display	Description	Possible reason	Corrective-measures
oL2	Inverter overload	1.Accelerate too fast. 2.Restart the rotating motor. 3.The input power voltage is too low. 4.The load is too large.	1.Increase the acceleration time. 2.Avoid restarting after shutdown. 3.Check the input power voltage 4.Select the inverter with higher power.
oL 1	Motor overload	1.The input power voltage is too low. 2.The motor rated current is set incorrectly. 3.The motor is blocked or the load mutation is too large. 4.Motor overloaded.	1.Check the input power voltage. 2.Reset the rated current of the motor. 3.Check the load and adjust the torque boost. 4.Choose the right motor.
oL3	Motor overload 2	1.The motor is blocked or the load is too large. 2.Improper setting of protection parameters.	1.Check the load. 2.Set appropriate protection parameters.
SP,	Input phase loss	R/L1,S/L2,T/L3 Input phase loss	1.Check the input power. 2.Check the installation wiring.
SPo	Output phase loss	U/T1,V/T2,W/T3 phase loss on output side (or the load three-phase is severely asymmetric)	1.Check the output wiring. 2.Check the motor and cable
oH2	Module overheat	1.Inverter overcurrent instantly. 2.The output three phases have interphase or ground short circuit. 3.The air duct is blocked or the fan is damaged. 4.The ambient temperature is too high. 5.Loose connection of control board or plug-in. 6.The auxiliary power supply is damaged, and the driving voltage is undervoltage. 7.Power module bridge arm is straight through. 8.The control board is abnormal.	1.See overcurrent countermeasures. 2.Rewiring. 3.Ventilate channels or replace fans. 4.Reduce the ambient temperature. 5.Check and reconnect. 6.Seek service. 7.Seek service. 8.Seek service.
EF	External fault	MI external fault input terminal action	Check external device input
CE	Communication error	1.The baud rate is not set properly. 2.Communication error using serial communication. 3.Communication is interrupted for a long time.	1.Set the appropriate baud rate. 2.Press STOP/RESET button to reset and seek service. 3.Check the wiring of the communication interface.
,tE	Current detection circuit fault	1.Poor contact of the control board connector. 2.The auxiliary power supply is damaged. 3.The Hall device is damaged. 4.The amplifier circuit is abnormal.	1.Check the connector and reinsert the cable. 2.Search for factory maintenance. 3.Search for factory maintenance. 4.Search for factory maintenance.
SC	Motor to ground short circuit fault	Short circuit of motor to ground	Check the motor or change the cable or motor
tE	Motor auto-tunning error	1.The capacity of the motor does not match the capacity of the inverter. 2.Improper setting of rated motor parameters. 3.The deviation of the self-learned parameters and the standard parameters is too large. 4.Auto-tuning timeout.	1.Replace the inverter model. 2.Set rated parameters according to the motor nameplate. 3.Make the motor empty and re-identify. 4.Check the motor wiring and parameter settings.

Display	Description	Possible reason	Corrective-measures
EEP	EEPROM reading-writing error	1.An error occurs in the reading and writing of control parameters. 2.The EEPROM is damaged.	1.Press STOP/RESE key and search for factory maintenance. 2.Search for factory maintenance
Eend	Accumulated running time reaches fault	Cumulative running time to set value	Use the parameter initialization function to clear the record information.
E ind	Accumulated power-on time reaches error	The cumulative power-on time reaches the set value.	Use the parameter initialization function to clear the record information.
oLL	Load failure	The running current of the inverter is less than 11-64.	Check whether the load or 11-64, 11-65 parameters are in accordance with the actual working conditions.
EP id	PID feedback disconnection fault	1.PID feedback disconnected. 2.The PID feedback source disappears.	1.Check the PID feedback signal line. 2.Check the PID feedback source.
CbC	Wave-by-wave current limiting fault	1.Whether the load is too large or the motor stalls. 2.Inverter power is too small.	1.Reduce the load and check the motor and mechanical conditions. 2.Select the inverter with higher power.
End			Contact the service provider
E8	Charging resistor fault	Whether the input power is abnormal	Check the input power
E42	Power-on initialization abnormal	1.Whether the input power supply is abnormal. 2.The power supply or device is damaged.	1.Check the power supply. 2.Seek service.
intP	Pole position detection failed	Whether the permanent magnet synchronous motor is connected normally	Check motor connection
E46	Contactor detection failure	he output of the contactor is inconsistent with the detection status	Detect related wiring
E47	Brake detection failure	The brake output and detection status are inconsistent	Detect related wiring

6.2 General troubleshooting method

Abnormal phenomenon	Check points	Processing content
The motor does not run	Has the power supply voltage been sent to R/L1, S/L2, and T/L3?	Whether the power supply is input; Turn off the power first and then send it again; Confirm the power voltage level; Whether the terminal screw is tight.
	Is there voltage output at the output terminals U/T1, V/T2, W/T3?	Turn off the power first and then send it again
	Check if the load is too heavy, causing the motor to block?	Reduce the load so that the motor can run
	Check if there is any abnormality in the inverter?	Refer to the troubleshooting instructions to deal with wiring inspection and correction
	Are forward or reverse instructions issued?	
	Check if there is an input for the analog frequency setting value?	Whether the analog frequency input signal wiring is correct; Whether the frequency input setting voltage is correct.
	Are the operating mode settings correct?	Operated by digital operation
Motor running Opposite direction	Are the output terminals U/T1, V/T2, and W/T3 wired correctly?	Must work with the U/T1,V/T2,W/T3 phase of the motor.
	Is the forward or reverse signal wiring correct?	Check and correct the wiring
Motor running Can't change speed	Is the analog frequency input wiring correct?	Check and correct the wiring
	Is the operation mode set correctly?	Operation panel operation mode setting check
	Is the load too heavy?	Lighten the load
Motor running speed is too high or too low	Is the motor specification (pole voltage) correct?	Check motor specifications
	Is the gear ratio correct?	Confirm gear ratio
	Is the maximum output frequency setting correct?	Confirm the maximum output frequency value
	Is there an extreme drop in the voltage at the motor end?	The V/f characteristic curve is set correctly
When the motor is running Abnormal speed changes	Will the load be too heavy?	Lighten the load
	Does the load change greatly?	Load fluctuation should be reduced; The capacity of the inverter and motor is increased.
	Is there any phase loss in the input power supply?	When using single-phase specifications, add AC reactor on the input power side; Check wiring when using three-phase specifications.