EN500/EN600-Troubleshooting

一、Failure and countermeasure

Possible failure types in EN500/EN600 are shown in Table, the fault types including fault and alarm two kinds.

When failure takes place in the inverter, the user should check according to note of these table first and record failure phenomena detailedly. Please contact our after-sale service and technical support Department or agent in your local place when technical service is needed.

Note

(1) Alarm fault of E-16,E-14, the inverter must be power off for reset.
(2) For the faults of over-current, short-circuit to ground while running, inverter can reset after 2s's delay
(3) When alarm fault of E-09, the reset time of inverter types over 75kw (Including 75kw) is 10s; for 55kw (including 55kw), the time is 4s.

Failure type and the countermeasure

Failure code	Failure type	Possible reason	Countermeasure
E-01	Overcurrent during accelerating process	Accelerating time is too short	Prolong accelerating time
		Improper V/F curve	Adjust V/F curve setting，adjust manual torque boost or change to automatic torque boost
		Restart rotating motor	Set speed checking restart function
		Low power source voltage	Check input power supply
		Too small power of the inverter	Choose inverter with high-power
		Output phase lose under vector control	Check whether the motor wiring is in good condition
E-02	Overcurrent during decelerating process	Decelerating time is too short	Prolong decelerating time
		Have potential energy load or big Inertia load	Increase braking power of external energy consumption braking subassembly
		Power of inverter is a bit small	Choose inverter with high-power
E-03	Overcurrent during constant speed process	Load change suddenly or have unwonted phenomena	Check or reduce saltation of the load
		Acc./Dec. time is set to too short	Prolong accelerating /decelerating time properly
		low power source voltage	Check input power supply
		Power of inverter is a bit small	Choose inverter with high-power
E-04	Overvoltage during accelerating	Unwonted input voltage	Check input power supply

		Acc. time is set to too short	Prolong accelerating time properly
		Restart rotating motor	Set speed checking restart function
E-05	Overvoltage during decelerating process	Decelerating time is too short	Prolong decelerating time
		Have potential energy load or big inertia load	Increase braking power of external energy consumption braking subassembly
E-06	Overvoltage during constant speed process	Unwonted input voltage	Check input power supply
		Acc/Dec time is set to too short	Prolong accelerating decelerating time properly
		Input voltage change abnormally	Assemble reactor
		Load inertia is a bit big	Use energy consumption subassembly
E-07	Inverter control power supply overvoltage	Unwonted input voltage	Check input power supply or look for service
E-08	Low-voltage when running	Input voltage is too low	Check the input voltage
E-09	Inverter overload protection	Acc time is set to too short	Prolong accelerating time
		DC injection braking is too big	Reduce DC injection braking current，prolong braking time
		Improper V/F curve	Adjust V/F curve and torque boost
		Restart rotating motor	Set speed checking restart function
		power source voltage is too low	check power source voltage
		Load is too big	Choose inverter with high-power
E-10 （A-10）	Motor overload protection	Improper V/F curve	Adjust V/F curve and torque boost
		Power source voltage is too low	check power source voltage
		General motor run at low speed with big load	Can choose frequency conversion motor for long time low speed run
		Motor overload protection factor set incorrectly	to set motor overload protection factor correctly
		Motor blocked up or load change too suddenly and quickly	Check the load
E-11 （A-11）	Motor underload protection	The operating current of inverter less than underload threshold	Confirm whether the parameters F19.08, F19.09 setting are reasonable
		load divorced from motor	Checking whether the load divorced from motor
E-12	The input phase lose	The three-phase input power supply is abnormal	Check the three-phase input power line is off or poor contact
		Power supply board anomaly	Look for service from manufacturer or agent
		The control board anomaly	Look for service from manufacturer or agent
E-13	The output phase lose	Anomaly wire between motor and inverter	Check the motor wire

		When the motor runs inverter three-phase output unbalanced	Check whether the motor three-phase winding is balance
		Power supply board anomaly	Look for service from manufacturer or agent
		The control board anomaly	Look for service from manufacturer or agent
E-14	Inverting module protection	Transient over current of the inverter	Refer to countermeasure for Over current
		phase to phase short circuit or earthing short circuit of output 3 phase	wiring again
		Air-path blocked or fan damaged	To clear air-path or replace the fan
		Ambient temperature is too high	Lower ambient temperature
		Connecting wire or insert on control board loose	Check and connect the wire again
		Unwonted current wave caused by missing output phase etc.	Check wiring
		Assistant power supply damaged and drive voltage lacking	Look for service from manufacturer or agent
		Unwonted control board	Look for service from manufacturer or agent
E-15	Short circuit to ground when operation	Motor short circuit to ground	The replacement of cable or motor
		Hall component is damaged or the hall wiring is poor or the current detection circuit is abnormal	Look for service from manufacturer or agent
E-16	Short circuit to ground when power on	Motor short circuit to ground	Change the cable or motor
		The power supplier of the inverter and the motor wiring are reversed	Change the cable or motor wiring
		Hall component is damaged or the hall wiring is poor	Look for service from manufacturer or agent
E-17 （A-17）	Inverter overheat	Continuous alarm on A-17 for more than 30 minutes	Cleaning or to improve the ventilation duct
		Duct blockage	Cleaning or to improve the ventilation duct
		The ambient temperature is too high	To improve the ventilation conditions, decreasing the carrier frequency
		Fan damage	Change new one
E-18 （A-18）	External device failure	Sudden stop terminal for external failure closed	Open external failure terminal after external failure is settled
E-19	Current detecting circuit failure	Connecting wire or insert on control board loose	Check and connect the wire again
		Assistant power supply damaged	Look for service from manufacturer or agent

		Hall component damaged	Look for service from manufacturer or agent
		Unwonted amplifying circuit	Look for service from manufacturer or agent
E-20	External interference failure	The interruption protection of CPU is triggered, but none of the actual over current, overvoltage and short circuit signals have been detected	Press "STOP/RESET" button to reset or add external power supply filter from power input side
E-21	Internal interference failure	Internal disturbance serious	Power off and restart, if the failure persists, seek the manufacturer or dealer service
E-22 （A-22）	PID given loss	PID given loss threshold setting is not reasonable	To reset the relevant parameters
		External given disconnection	Check external given wiring
		The control board anomaly	Look for service from manufacturer or agent
E-23 （A-23）	PID feedback loss	PID feedback loss threshold setting is not reasonable	To reset the relevant parameters
		Feedback signal disconnection	Check external feedback signal wiring
		The control board anomaly	Look for service from manufacturer or agent
E-24 （A-24）	PID error amount abnormal	PID error abnormal detection threshold setting is not reasonable	To reset the relevant parameters
		The control board anomaly	Look for service from manufacturer or agent
E-25	Start terminal protection	Terminal command effective when power on .	Check the external input terminal state
E-26 （A-26）	Communication failure	Baud rate set improperly	set Baud rate properly
		Serial port communication error	Press “STOP/RESET” key to reset，look for service
		Failure warning parameter set improperly	Modify F05.04, F05.05
		Upper device doesn’t work	Check if upper device work and wiring is correct
E-27	Reserved		
E-28	Reserved		
E-29	Reserved		
E-30 （A-30）	E^2PROM read and write wrongly	Mistake take place when read or write control parameter	Reset by pressing “STOP/RESET” Look for service from manufacturer or agent
E-31	Temperature detecting disconnection	Temperature sensor fault	Look for service from manufacturer or agent
		The temperature detection circuit anomaly	Look for service from manufacturer or agent

E-32	Self tuning failure	Parameter setting not according to the motor nameplate	set parameter correctly according to the motor nameplate
		current anomaly when tuning	Select inverter match the motor
		Motor wiring error	Check the motor three-phase wiring
E-33 （A-33）	Contactor anomaly	Power board anomaly	Look for service from manufacturer or agent
		Contactor anomaly	Replace contactor
E-34	The factory fault 1	Debugging use in factory	
E-35	The factory fault 2	Debugging use in factory	
E-36 （A-36）	The bus capacitor overheating	Poor cooling environment	Improve the inverter heat dissipation environment
		The inverter capacity is too small	Select inverter match motor
		Bus capacitance cooling fan is damaged	Replace the bus capacitor cooling fan
E-37	Encoder disconnection	Damaged encoder or poor wiring	Check the wiring or the encoder
E-38	Overspeed protection	Short acceleration time	Prolong the acceleration time
		Low inverter power	Select high-power inverter
		Overspeed detect parameter F19.39 and F19.40 is set improperly	Set the parameter properly according to the situation
E-39	Large speed deviation protection	Short Acceleration/ deceleration time	Prolong the acceleration time
		Low inverter power	Select high-power inverter
		Over velocity misalignment. Parameter F19.41 and F19.42 is set improperly	Set the parameter properly according to the situation
E-40	Fault of Z pulse loses	Z signal wire of motor coder is unconnected or loose.	Check the Z signal wire of motor coder.
E-41	Analog channel disconnected	AI1 or AI2 detection of the physical quantity is not within a reasonable range, or AI1 or AI2 circuit contact bad	Control the AI1 or AI2 measurement of physical quantities reasonably, check AI1 or AI2 wiring
E-42 ～ E-50	Reserved		
A-51	The main and auxiliary given frequency channel exclusiveness alarm	Parameter setting error	F01.00 and F01.03 cannot be set to the same channel (9: terminal encoder given except)

A-52	Terminal function exclusiveness alarm	Terminal function parameters setting repeatedly	Check the terminal function settings
A-53	Operation limit alarm	Limit run time	Please contact supplier
LOCH1.	Keypad lock	Keypad lock	Press ESC/MENU key for more than 2s to unlock the keypad.

二、Failure reset

(1) Before reset you must find out reason of failure downright and eliminate it, otherwise may cause permanent damage to the inverter.
(2) If can't reset or failure takes place again after resetting, should look for reason and continuous resetting will damage the inverter.
(3) Reset should take place 5 minutes later after overload, overheat protection action.
(4) For the fault of E-14, the reset is invalid, the motor wiring should be checked after power off, and restart the inverter.
(5) When there is a fault of E-16 after power on, do not directly run the inverter after reset, and need to check whether the input, out wiring are reversed.

To resume normal running when failure takes place in the inverter, you can choose following any kind of operation:

(1) After you set any terminal of X1~X8 to be inputted by external RESET, it will be reset after connected to COM.
(2) When failure code is displayed，press STOP/RESET key after confirmed that it can be restoration.
(3) Communication reset. Please refer to annex description.
(4) Cut off power supply.

When an alarm occurs, must eliminate alarm source which cause alarm, otherwise the alarm cannot be eliminated, also cannot be reset by reset button.