INVERTER USER MANUAL

Chapter 8 Faults and Solutions

8.1 Faults and Solutions

The T500 provides a total of 51 pieces of fault information and protective functions. After a fault occurs, the AC drive implements the protection function, and displays the fault code on the operation panel (if the operation panel is available).

Before contacting Inovance for technical support, you can first determine the fault type, analyze the causes, and perform troubleshooting according to the following tables. If the fault cannot be rectified, contact the agent or Inovance.

E022 is the AC drive hardware overcurrent or overvoltage signal. In most situations, hardware overvoltage fault causes E022.

Fault Name	Display	Possible Causes	Solutions
Inverter unit protection	E001	1: The output circuit is grounded or short circuited. 2: The connecting cable of the motor is too long. 3: The module overheats. 4: The internal connections become loose. 5: The main control board is faulty. 6: The drive board is faulty. 7: The inverter module is faulty.	1: Eliminate external faults. 2: Install a reactor or an output filter. 3: Check the air filter and the cooling fan. 4: Connect all cables properly. 5: Contact the agent or Inovance.
Overcurrent during acceleration	E002	1: The output circuit is grounded or short circuited. 2: Motor auto-tuning is not performed. 3: The acceleration time is too short. 4: Manual torque boost or V/F curve is not appropriate. 5: The voltage is too low. 6: The startup operation is performed on the rotating motor. 7: A sudden load is added during acceleration. 8: The AC drive model is of too small power class.	1: Eliminate external faults. 2: Perform the motor auto- tuning. 3: Increase the acceleration time. 4: Adjust the manual torque boost or V/F curve. 5: Adjust the voltage to normal range. 6: Select rotational speed tracking restart or start the motor after it stops. 7: Remove the added load. 8: Select an AC drive of higher power class.
Overcurrent during deceleration	E003	1: The output circuit is grounded or short circuited. 2: Motor auto-tuning is not performed. 3: The deceleration time is too short. 4: The voltage is too low. 5: A sudden load is added during deceleration. 6: The braking unit and braking resistor are not installed.	1: Eliminate external faults. 2: Perform the motor auto- tuning. 3: Increase the deceleration time. 4: Adjust the voltage to normal range. 5: Remove the added load. 6: Install the braking unit and braking resistor.
Overcurrent at constant speed	E004	1: The output circuit is grounded or short circuited. 2: Motor auto-tuning is not performed. 3: The voltage is too low. 4: A sudden load is added during operation. 5: The AC drive model is of too small power class.	1: Eliminate external faults. 2: Perform the motor auto- tuning. 3: Adjust the voltage to normal range. 4: Remove the added load. 5: Select an AC drive of higher power class.
Overvoltage during acceleration	E005	1: The input voltage is too high. 2: An external force drives the motor during acceleration. 3: The acceleration time is too short. 4: The braking unit and braking resistor are not installed.	1: Adjust the voltage to normal range. 2: Cancel the external force or install a braking resistor. 3: Increase the acceleration time. 4: Install the braking unit and braking resistor.
Overvoltage during deceleration	E006	1: The input voltage is too high. 2: An external force drives the motor during deceleration. 3: The deceleration time is too short. 4: The braking unit and braking resistor are not installed.	1: Adjust the voltage to normal range. 2: Cancel the external force or install the braking resistor. 3: Increase the deceleration time. 4: Install the braking unit and braking resistor.
Overvoltage at constant speed	E007	1: The input voltage is too high. 2: An external force drives the motor during deceleration.	1: Adjust the voltage to normal range. 2: Cancel the external force or install the braking resistor.
Control power supply fault	E008	The input voltage is not within the allowable range.	Adjust the input voltage to the allowable range.
Undervoltage	E009	1: Instantaneous power failure occurs on the input power supply. 2: The AC drive's input voltage is not within the allowable range. 3: The bus voltage is abnormal. 4: The rectifier bridge and buffer resistor are faulty.	1: Reset the fault. 2: Adjust the voltage to normal range. 3: Contact the agent or Inovance.

Fault Name	Display	Possible Causes	Solutions
		5: The drive board is faulty. 6: The main control board is faulty.	
AC drive overload	E010	1: The load is too heavy or locked- rotor occurs on the motor. 2: The AC drive model is of too small power class.	1: Reduce the load and check the motor and mechanical condition. 2: Select an AC drive of higher power class.
Motor overload	E011	1: F9.01 is set improperly. 2: The load is too heavy or locked- rotor occurs on the motor. 3: The AC drive model is of too small power class.	1: Set F9.01 correctly. 2: Reduce the load and check the motor and the mechanical condition. 3: Select an AC drive of higher power class.
Power input phase loss	E012	1: The three-phase power input is abnormal. 2: The drive board is faulty. 3: The lightening board is faulty. 4: The main control board is faulty.	1: Eliminate external faults. 2: Contact the agent or Inovance.
Power output phase loss	E013	1: The cable connecting the AC drive and the motor is faulty. 2: The AC drive's three-phase outputs are unbalanced when the motor is running. 3: The drive board is faulty. 4: The module is faulty.	1: Eliminate external faults. 2: Check whether the motor three-phase winding is normal. 3: Contact the agent or Inovance.
Module overheat	E014	1: The ambient temperature is too high. 2: The air filter is blocked. 3: The fan is damaged. 4: The thermally sensitive resistor of the module is damaged. 5: The inverter module is damaged.	1: Lower the ambient temperature. 2: Clean the air filter. 3: Replace the damaged fan. 4: Replace the damaged thermally sensitive resistor. 5: Replace the inverter module.
External equipment fault	E015	1: External fault signal is input via DI. 2: External fault signal is input via virtual I/O.	Reset the operation.
Communication fault	E016	1: The host computer is in abnormal state. 2: The communication cable is faulty. 3: F0.28 is set improperly. 4: The communication parameters in group FD are set improperly.	1: Check the cabling of host computer. 2: Check the communication cabling. 3: Set F0.28 correctly. 4: Set the communication parameters properly.
Contactor fault	E017	1: The drive board and power supply are faulty. 2: The contactor is faulty.	1: Replace the faulty drive board or power supply board. 2: Replace the faulty contactor.
Current detection fault	E018	1: The HALL device is faulty. 2: The drive board is faulty.	1: Replace the faulty HALL device. 2: Replace the faulty drive board.
Motor auto-tuning fault	E019	1: The motor parameters are not set according to the nameplate. 2: The motor auto-tuning times out.	1: Set the motor parameters according to the nameplate properly. 2: Check the cable connecting the AC drive and the motor.
Encoder fault	E020	1: The encoder type is incorrect. 2: The cable connection of the encoder is incorrect. 3: The encoder is damaged. 4: The PG card is faulty.	1: Set the encoder type correctly based on the actual situation. 2: Eliminate external faults. 3: Replace the damaged encoder. 4: Replace the faulty PG card.
EEPROM read- write fault	E021	The EEPROM chip is damaged.	Replace the main control board.
AC drive hardware fault	E022	1: Overvoltage exists. 2: Overcurrent exists.	1: Handle based on overvoltage. 2: Handle based on overcurrent.
Short circuit to ground	E023	The motor is short circuited to the ground.	Replace the cable or motor.
Accumulative running time reached	E026	The accumulative running time reaches the setting value.	Clear the record through the parameter initialization function.
User-defined fault 1	E027	1: The user-defined fault 1 signal is input via DI. 2: User-defined fault 1 signal is input via virtual I/O.	Reset the operation.
User-defined fault 2	E028	1: The user-defined fault 2 signal is input via DI. 2: The user-defined fault 2 signal is input via virtual	Reset the operation.

Fault Name	Display	Possible Causes	Solutions
		I/O.	
Accumulative power-on time reached	E029	The accumulative power-on time reaches the setting value.	Clear the record through the parameter initialization function.
Load becoming 0	E030	The AC drive running current is lower than F9.64.	Check that the load is disconnected or the setting of F9.64 and F9.65 is correct.
PID feedback lost during running	E031	The PID feedback is lower than the setting of FA.26.	Check the PID feedback signal or set FA.26 to a proper value.
Pulse-by-pulse current limit fault	E040	1: The load is too heavy or locked- rotor occurs on the motor. 2: The AC drive model is of too small power class.	1: Reduce the load and check the motor and mechanical condition. 2: Select an AC drive of higher power class.
Motor switchover fault during running	E041	Change the selection of the motor via terminal during running of the AC drive.	Perform motor switchover after the AC drive stops.
Too large speed deviation	E042	1: The encoder parameters are set incorrectly. 2: The motor auto-tuning is not performed. 3: F9.69 and F9.70 are set incorrectly.	1: Set the encoder parameters properly. 2: Perform the motor auto- tuning. 3: Set F9.69 and F9.70 correctly based on the actual situation.
Motor over-speed	E043	1: The encoder parameters are set incorrectly. 2: The motor auto-tuning is not performed.3: F9.69 and F9.70 are set incorrectly.	1: Set the encoder parameters properly. 2: Perform the motor auto- tuning. 3: Set F9.69 and F9.70 correctly based on the actual situation.
Motor overheat	E045	1: The cabling of the temperature sensor becomes loose. 2: The motor temperature is too high.	1: Check the temperature sensor cabling and eliminate the cabling fault. 2: Lower the carrier frequency or adopt other heat radiation measures.
Initial position fault	E051	The motor parameters are not set based on the actual situation.	Check that the motor parameters are set correctly and whether the setting of rated current is too small.