

ACS150

Troubleshooting

ACS150 Drives (0.37...4 kW, 0.5...5 hp)



Fault tracing

What this chapter contains

The chapter lists all alarm and fault messages including the possible cause and corrective actions.

Safety




WARNING! Only qualified electricians are allowed to maintain the drive. Read the safety instructions in chapter [Safety](#) on the first pages before you work on the drive.

Alarm and fault indications

An alarm or fault message on the panel display indicates abnormal drive status. Using the information given in this chapter most alarm and fault causes can be identified and corrected. If not, Contact An Thái Corp.

How to reset

The drive can be reset either by pressing the keypad key  on the control panel, through digital input, or by switching the supply voltage off for a while. When the fault has been removed, the motor can be restarted.

Fault history

When a fault is detected, it is stored in the fault history. The latest faults are stored together with a time stamp.

Parameters [0401](#) LAST FAULT, [0412](#) PREVIOUS FAULT 1 and [0413](#) PREVIOUS FAULT 2 store the most recent faults. Parameters [0404...0409](#) show drive operation data at the time the latest fault occurred.

Alarm messages generated by the drive

CODE	ALARM	CAUSE	WHAT TO DO
A2001	OVERCURRENT (programmable fault function 1610)	Output current limit controller is active.	Check motor load. Check acceleration time (2202 and 2205). Check motor and motor cable (including phasing). Check ambient conditions. Load capacity decreases if installation site ambient temperature exceeds 40°C. See section <i>Derating</i> on page 114 .
A2002	OVERVOLTAGE (programmable fault function 1610)	DC overvoltage controller is active.	Check deceleration time (2203 and 2206). Check input power line for static or transient overvoltage.
A2003	UNDERVOLTAGE (programmable fault function 1610)	DC undervoltage controller is active.	Check input power supply.
A2004	DIRLOCK	Change of direction is not allowed.	Check parameter 1003 DIRECTION settings.
A2006	AI1 LOSS (programmable fault function 3001 , 3021)	Analog input AI1 signal has fallen below limit defined by parameter 3021 AI1 FAULT LIMIT.	Check fault function parameter settings. Check for proper analog control signal levels. Check connections.
A2009	DEVICE OVERTEMP	Drive IGBT temperature is excessive. Alarm limit is 120°C.	Check ambient conditions. See also section <i>Derating</i> on page 114 . Check air flow and fan operation. Check motor power against unit power.
A2010	MOTOR TEMP (programmable fault function 3005...3009)	Motor temperature is too high (or appears to be too high) due to excessive load, insufficient motor power, inadequate cooling or incorrect start-up data.	Check motor ratings, load and cooling. Check start-up data. Check fault function parameter settings. Let motor cool down. Ensure proper motor cooling: Check cooling fan, clean cooling surfaces, etc.
A2011	UNDERLOAD (programmable fault function 3013...3015)	Motor load is too low due to e.g. release mechanism in driven equipment.	Check for problem in driven equipment. Check fault function parameter settings. Check motor power against unit power.
A2012	MOTOR STALL (programmable fault function 3010...3012)	Motor is operating in stall region due to e.g. excessive load or insufficient motor power.	Check motor load and drive ratings. Check fault function parameter settings.
A2013	AUTORESET	Automatic reset alarm	Check parameter group 31 AUTOMATIC RESET settings.
A2017	OFF BUTTON	Drive stop command has been given from control panel when local control lock is active.	Disable local control mode lock by parameter 1606 LOCAL LOCK and retry.
A2023	EMERGENCY STOP	Drive has received emergency stop command and ramps to stop according to ramp time defined by parameter 2208 EMER DEC TIME.	Check that it is safe to continue operation. Return emergency stop push button to normal position.

CODE	ALARM	CAUSE	WHAT TO DO
A2026	INPUT PHASE LOSS (programmable fault function 3016)	Intermediate circuit DC voltage is oscillating due to missing input power line phase or blown fuse. Alarm is generated when DC voltage ripple exceeds 14% of nominal DC voltage.	Check input power line fuses. Check for input power supply imbalance. Check fault function parameter setting.

CODE	CAUSE	WHAT TO DO
A5011	Drive is controlled from another source.	Change drive control to local control mode.
A5012	Direction of rotation is locked.	Enable change of direction. See parameter 1003 DIRECTION.
A5013	Panel control is disabled because start inhibit is active.	Deactivate start inhibit and retry. See parameter 2108 START INHIBIT.
A5014	Panel control is disabled because of drive fault.	Reset drive fault and retry.
A5015	Panel control is disabled because local control mode lock is active.	Deactivate local control mode lock and retry. See parameter 1606 LOCAL LOCK.
A5019	Writing non-zero parameter value is prohibited.	Only parameter reset is allowed.
A5022	Parameter is write protected.	Parameter value is read-only and cannot be changed.
A5023	Parameter change is not allowed, when drive is running.	Stop drive and change parameter value.
A5024	Drive is executing task.	Wait until task is completed.
A5026	Value is at or below minimum limit.	Contact An Thái Corp
A5027	Value is at or above maximum limit.	Contact An Thái Corp
A5028	Invalid value	Contact An Thái Corp
A5029	Memory is not ready.	Retry.
A5030	Invalid request	Contact An Thái Corp
A5031	Drive is not ready for operation, e.g due to low DC voltage.	Check input power supply.
A5032	Parameter error	Contact An Thái Corp

Fault messages generated by the drive

CODE	FAULT	CAUSE	WHAT TO DO
F0001	OVERCURRENT	Output current has exceeded trip level. Overcurrent trip limit for drive is 325% of drive nominal current.	Check motor load. Check acceleration time (2202 and 2205). Check motor and motor cable (including phasing). Check ambient conditions. Load capacity decreases if installation site ambient temperature exceeds 40°C. See section <i>Derating</i> on page 114.
F0002	DC OVERVOLT	Excessive intermediate circuit DC voltage. DC overvoltage trip limit is 420 V for 200 V drives and 840 V for 400 V drives.	Check that overvoltage controller is on (parameter 2005 OVERVOLT CTRL). Check brake chopper and resistor (if used). DC overvoltage control must be deactivated when brake chopper and resistor are used. Check deceleration time (2203 and 2206). Check input power line for static or transient overvoltage. Retrofit frequency converter with brake chopper and brake resistor.
F0003	DEV OVERTEMP	Drive IGBT temperature is excessive. Fault trip limit is 135°C.	Check ambient conditions. See also section <i>Derating</i> on page 114. Check air flow and fan operation. Check motor power against unit power.
F0004	SHORT CIRC	Short circuit in motor cable(s) or motor	Check motor and motor cable.
F0006	DC UNDERVOLT	Intermediate circuit DC voltage is not sufficient due to missing input power line phase, blown fuse, rectifier bridge internal fault or too low input power.	Check that undervoltage controller is on (parameter 2006 UNDERVOLT CTRL). Check input power supply and fuses.
F0007	AI1 LOSS (programmable fault function 3001, 3021)	Analog input AI1 signal has fallen below limit defined by parameter 3021 AI1 FAULT LIMIT.	Check fault function parameter settings. Check for proper analog control signal levels. Check connections.
F0009	MOT OVERTEMP (programmable fault function 3005...3009)	Motor temperature is too high (or appears to be too high) due to excessive load, insufficient motor power, inadequate cooling or incorrect start-up data.	Check motor ratings, load and cooling. Check start-up data. Check fault function parameter settings. Let motor cool down. Ensure proper motor cooling: Check cooling fan, clean cooling surfaces, etc.
F0012	MOTOR STALL (programmable fault function 3010...3012)	Motor is operating in stall region due to e.g. excessive load or insufficient motor power.	Check motor load and drive ratings. Check fault function parameter settings.
F0014	EXT FAULT 1 (programmable fault function 3003)	External fault 1	Check external devices for faults. Check fault function parameter setting.
F0015	EXT FAULT 2 (programmable fault function 3004)	External fault 2	Check external devices for faults. Check fault function parameter setting.

CODE	FAULT	CAUSE	WHAT TO DO
F0016	EARTH FAULT (programmable fault function 3017)	Drive has detected earth (ground) fault in motor or motor cable.	Check motor. Check fault function parameter setting. Check motor cable. Motor cable length must not exceed maximum specifications. See section <i>Motor connection</i> on page 119.
F0017	UNDERLOAD (programmable fault function 3013...3015)	Motor load is too low due to e.g. release mechanism in driven equipment.	Check for problem in driven equipment. Check fault function parameter settings. Check motor power against unit power.
F0018	THERM FAIL	Drive internal fault. Thermistor used for drive internal temperature measurement is open or short-circuited.	Contact An Thái Corp.
F0021	CURR MEAS	Drive internal fault. Current measurement is out of range.	Contact An Thái Corp
F0022	INPUT PHASE LOSS (programmable fault function 3016)	Intermediate circuit DC voltage is oscillating due to missing input power line phase or blown fuse. Fault trip occurs when DC voltage ripple exceeds 14% of nominal DC voltage.	Check input power line fuses. Check for input power supply imbalance. Check fault function parameter setting.
F0026	DRIVE ID	Internal drive ID fault	Contact An Thái Corp
F0027	CONFIG FILE	Internal configuration file error	Contact An Thái Corp
F0035	OUTP WIRING (programmable fault function 3023)	Incorrect input power and motor cable connection (i.e. input power cable is connected to drive motor connection).	Check input power connections. Check fault function parameter setting.
F0036	INCOMPATIBLE SW	Loaded software is not compatible.	Contact An Thái Corp
F0101	SERF CORRUPT	Corrupted Serial Flash chip file system	Contact An Thái Corp
F0103	SERF MACRO	Active macro file missing from Serial Flash chip	Contact An Thái Corp
F0201	DSP T1 OVERLOAD	System error	Contact An Thái Corp
F0202	DSP T2 OVERLOAD		
F0203	DSP T3 OVERLOAD		
F0204	DSP STACK ERROR		
F0206	MMIO ID ERROR	Internal I/O Control board (MMIO) fault	Contact An Thái Corp
F1000	PAR HZRPM	Incorrect speed/frequency limit parameter setting	Check parameter settings. Following must apply: 2007 < 2008, 2007/9907 and 2008/9907 are within range.
F1003	PAR AI SCALE	Incorrect analog input AI signal scaling	Check parameter group 13 ANALOG INPUTS settings. Following must apply: 1301 < 1302.