13 Trip information and measures

13. 1 Description of trip and alarm information and measures

If a trip occurs, make failure diagnosis according to the table below before contacting your Toshiba distributor.

■ Term description

Trip	Output of the inverter is turned OFF for protection of the inverter or external equipment. A failure signal can be output if the output terminal function is assigned. (A failure signal is assigned to the terminal [FL] in the default setting).
Alarm	Indicates a condition that the inverter or external equipment may be damaged if continued. A signal can be output if the output terminal function is assigned. Under voltage, etc. are displayed with blinking on the operation panel.
Pre-alarm	A condition close to the trip level. A signal can be output when the output terminal function is assigned. "C", "P", "L", and "H" blink in the operation panel during run for overcurrent, overvoltage, overload, and overheat respectively.
Message	Informs a status of the inverter and setting error. It is not an alarm.

■ Trip information

Trip display	Failure code	Trip name	Detection factor	Measures
E	0011	Emergency off	Emergency off is input. 1) When a run command is other than the operation panel, [STOP/RESET] key was pressed twice. 2) A signal was input to the input terminal in which emergency off is assigned. 3) Emergency off is input from communication.	• Reset after solving problems. • Clear the emergency off signal.
E-11	002B	Brake answer error *	The system does not reply even after the setting time in <F630: Brake answer wait time> elapsed.	• Check the system. • Check if the <F630> setting is correct. When not used, set <F630>="0.0: Disabled".
E-12	002C	PG error	1) PG is disconnected. 2) Error exists in PG wiring. 3) PG voltage is improper.	• Check the PG wiring. • Check if the PG settings are correct. <F376: PG phases number select>, <F379: PG option voltage>

*Enable/Disable can be selected for trip with a parameter.

Trip display	Failure code	Trip name	Detection factor	Measures
E-13	002D	Abnormal speed error	1) When <Pt: V/f Pattern> = "0" to "9", an over speed condition occurred. Over speed condition: In case F623≠0.0, F624≠0.0, the condition which estimated frequency is not inside of "output frequency - <F624>" to "output frequency + <F623>" continues <F622> times. 2) When <Pt: V/f Pattern> = "10" to "11", over speed continued by PG failure, etc. Over speed condition: In case F623≠0.0, F624≠0.0, the condition which measured frequency is not inside of "output frequency - <F624>" to "output frequency + <F623>" continues <F622> times. 3) Due to overvoltage limit operation, the output frequency exceeded <FH: Maximum frequency> +12 Hz or <FH> + <vL: Base frequency 1> x 0.1.	1) 3) • Check whether a problem exists in input voltage. • When the regenerative energy is large, install a braking resistor (option). 2) Check the PG wiring and setting.
E-18	0032	Analog input disconnecting *	The input level of the terminal [II] became the setting value or less of <F633: II analog input disconnection detection level>	• Check that the signal line connected to the terminal [II] is not disconnected. • Check if the <F633> setting is correct.
E-19	0033	CPU communicatio n error	Communication error between control CPU.	Turn off the power and then turn it on again. If the error occurs again, contact your Toshiba distributor.
E-20	0034	Over torque boost	• The setting value of the <F402: Auto-matic torque boost> is very high. • Impedance on the motor is low.	Set the motor parameters according to the motor characteristic, and perform auto-tuning. <vL: Base frequency 1>, <vLv: Base frequency voltage>, <F405: Motor rated capacity>, <F415: Motor rated current>, <F417: Motor rated speed>, <F400: Offline auto-tuning>, etc.
E-21	0035	CPU1 fault B	Control CPU fault.	Fault in internal inverter. Contact your Toshiba distributor.
E-22	0036	Embedded Ethernet fault	Fault in the embedded Ethernet.	Fault in internal inverter. Contact your Toshiba distributor.
E-23	0037	Option fault (slot A)	Fault in the option connected to slot A.	Fault in the option. Contact your Toshiba distributor.
E-24	0038	Option fault (slot B)	Fault in the option connected to slot B.	Fault in the option. Contact your Toshiba distributor.
E-25	0039	Option fault (slot C)	Fault in option 3.	Fault in the option. Contact your Toshiba distributor.
E-26	003A	CPU2 fault	Control CPU fault.	Fault in internal inverter. Contact your Toshiba distributor.

*Enable/Disable can be selected for trip with a parameter.

Trip display	Failure code	Trip name	Detection factor	Measures
E-29	003D	Control power option failure *	1) Failure on the control power supply option. 2) The setting of <F647: Control power option failure detection> is improper.	1) When input voltage of the control power supply is normal and the voltage between terminals [+SU]-[CC] is under 20 Vdc, it is a failure in the control power supply option. Contact your Toshiba distributor. 2) When the control power supply option is not used, set <F647> = "0".
E-31	003F	Rush current suppression relay fault	1) Fault on the rush current suppression relay. 2) The power was turned ON/OFF frequently.	1) Fault in internal inverter. Contact your Toshiba distributor. 2) Instead of turning ON/OFF with the power supply, turn ON/OFF with a run command.
E-32	0040	PTC failure	1) PTC protection for the motor became enabled. 2) Failure in the PTC circuit.	1) Check the motor and PTC. 2) Failure in internal inverter. Contact your Toshiba distributor.
E-37	0045	Servo lock error	1) The lock up torque or more external load is applied to the motor. 2) Setting of motor parameters is improper.	1) Reduce the load to apply the servo lock. 2) Set the motor parameters according to the motor characteristic, and perform auto-tuning. <vL: Base frequency 1>, <vLv: Base frequency voltage>, <F405: Motor rated capacity>, <F415: Motor rated current>, <F417: Motor rated speed>, <F400: Offline auto-tuning>, etc.
E-38	0046	Communication time-out of A6 Brake Unit	1) The wire linked VF-AS3 to A6 Brake Unit is disconnected. 2) The A6 Brake Unit is failed.	1) Check the wire linked VF-AS3 to A6 Brake Unit. 2) Turn off the power and then turn it on again. If the fault occurs again, contact your Toshiba distributor.
E-39	0047	PM control error	During auto-tuning or initial position, the motor current became very high.	Measure inductance with a LCR meter, etc., and set to the parameter directly.
E-42	004A	Cooling fan fault	The cooling fan failed.	The cooling fan needs to be replaced. Contact your Toshiba distributor.
E-43	004B	Communication time-out (embedded Ethernet)	Embedded Ethernet communication timed out.	Check the Ethernet communication equipment and wiring.
E-44	004C	Battery of panel failure	Calendar function is activated, and under one of these cases. 1) A battery is not in. 2) The battery level is low.	1) Put a battery. 2) Replace the battery.
E-45	004D	GD2 auto-tuning error	• The value of F459 is not fixed. • Estimated value of F459 is out of parameter range.	1) Modify the value of F481, F482 and do the tuning again. 2) Modify F480 to 0, and set the appropriate value of F459 manually.
E-48	0050	A6 Brake Unit internal fault	An internal error occurred in A6 Brake Unit.	Turn off the power and then turn it on again. If the fault occurs again, contact your Toshiba distributor.
E-99	0058	Trip for test *	Trip for test occurred.	Reset if no problem is found.

*Enable/Disable can be selected for trip with a parameter.

Trip display	Failure code	Trip name	Detection factor	Measures
EEP1	0012	EEPROM fault 1	Fault occurred during internal data writing.	Turn off the power and then turn it on again. If the fault occurs again, contact your Toshiba distributor.
EEP2	0013	EEPROM fault 2	1) While setting <tyP: Default setting>, the power was turned OFF or momentary power failure occurred. 2) Fault occurred during internal data writing.	1) Set <tyP> again. If the fault occurs again, contact your Toshiba distributor. 2) Turn off the power and then turn it on again. If the fault occurs again, contact your Toshiba distributor.
EEP3	0014	EEPROM fault 3	Fault occurred during internal data reading.	Turn off the power and then turn it on again. If the fault occurs again, contact your Toshiba distributor.
EF2	0022	Grounding fault *	1) Grounding fault occurred in the output wiring or the motor. 2) Fault can occur depends on motor, in case of rapid acceleration/deceleration.	1) Check grounding fault in the wiring on the output side and the motor. 2) Increase the acceleration/deceleration time. <ACC/dEC acceleration/ deceleration time 1>
EPHI	0008	Input phase loss *	1) Input side phase has failed.	1) Check phase failure in the wiring on the input side.
EPHO	0009	Output phase loss *	1) Output side phase has failed. 2) Output current is quite small (less than 8%) to motor rated current.	1) Check phase failure in the wiring on the output side. 2) Set <F605> to 0
Err2	0015	RAM fault	Control RAM fault.	Fault in internal inverter. Contact your Toshiba distributor.
Err3	0016	ROM fault	Control ROM fault.	Fault in internal inverter. Contact your Toshiba distributor.
Err4	0017	CPU1 fault A	Control CPU fault.	Fault in internal inverter. Contact your Toshiba distributor.
Err5	0018	Communication time-out (RS485)	RS485 communication timed out.	Check the communication equipment and wiring on RS485 communication.
Err6	0019	Gate array fault	Fault in the gate array.	Fault in internal inverter. Contact your Toshiba distributor.
Err7	001A	Current detector fault	Fault in the output current detector.	Fault in internal inverter. Contact your Toshiba distributor.
Err8	001B	Communication time-out (option)	Communication option timed out.	Check the communication equipment and wiring on communication option.
Err9	001C	Panel disconnection during run	While running with a run command from the operation panel and extension panel, the cable connecting the inverter and panel are disconnected.	Check the connection on the inverter and panel.

*Enable/Disable can be selected for trip with a parameter.

13

Trip display	Failure code	Trip name	Detection factor	Measures
Etn	0028	Auto-tuning error	1) The motor parameter does not match the motor characteristic. 2) Executed auto-tuning while the motor is rotating. 3) The output frequency does not increase within few minutes.	1) Set the motor parameters according to the motor characteristic. <vL: Base frequency 1>, <vLv: Base frequency voltage>, <F405: Motor rated capacity>, <F415: Motor rated current>, <F417: Motor rated speed>, etc. 2) Check that the motor is stopped, and perform auto-tuning again. 3) Check that the motor is not stopped while the output frequency is risin on the system.
Etn1	0054	Auto-tuning error 1	1) The motor is not connected. 2) Something other than the motor is connected. 3) In the induction motor, an improper value, a synchronized motor speed value or a value close to it is set in <F417: Motor rated speed>.	1) and 2) Check that the motor is connected. 3) Set <F417> according to the motor rating.
Etn2	0055	Auto-tuning error 2	The motor parameter does not match the motor characteristic.	Set the motor parameters according to the motor characteristic. <vL: Base frequency 1>, <vLv: Base frequency voltage>, <F405: Motor rated capacity>, <F415: Motor rated current>, <F417: Motor rated speed>, etc.
Etn3	0056	Auto-tuning error 3	The setting on <vL: Base frequency 1> or <F417: Motor rated speed> does not match the motor rating.	Set <vL: Base frequency 1> or <F417: Motor rated speed> according to the motor rating.
EtyP	0029	Inverter type error	1) Internal error exists. 2) Replaced the printed circuit board (contact your Toshiba distributor for replacing the printed circuit board).	1) Error in internal inverter. Contact your Toshiba distributor. 2) Set <tyP: Default setting> = "6: Initialize typeform".
OC1	0001	Overcurrent (during acceleration)	1) The acceleration time is short. 2) <Pt: V/f Pattern> does not match the machinery. 3) Momentary power failure occurred, and tried to start the rotating motor. 4) Tried to run the special motor (impedance small). 5) Tried to run a low inductance motor like a high-speed motor. 6) When <Pt> = "11", polarity of PG is opposite. 7) When <F614: Pulse width of short circuit detection at start> = "0", and <F613>=2, or 3, inverter output short circuit.	1) Increase the acceleration time. <ACC: Acceleration time 1>, etc. 2) Set <Pt: V/f Pattern> according to the machinery. 3) Set <F301: Auto-restart>. Depending on the characteristic of machinery, <F302: Regenerative power ride-through> = "1" is also effective. 4) When <Pt> is set to "0", "1", "2", or "7", lower <vb: Manual torque boost 1>. For settings other than "0", "1", "2", or "7", perform auto-tuning with <F400: Offline auto-tuning>. <F402: Automatic torque boost> is set matching the motor. 5) Change the inverter to large capacity.
OC2	0002	Overcurrent (during deceleration)	1) The deceleration time is short. 2) Tried to run a low inductance motor like a high-speed motor. 3) When <Pt> = "11", polarity of PG is opposite. 4) When <F614: Pulse width of short circuit detection at start> = "0", and <F613>=2, or 3 inverter output short circuit.	1) Increase the deceleration time. <dEC: Deceleration time 1>, etc. 2) Change the inverter to large capacity.

*Enable/Disable can be selected for trip with a parameter.

Trip display	Failure code	Trip name	Detection factor	Measures
OC3	0003	Overcurrent (during constant speed running)	1) The load changed rapidly. 2) Error occurred in the machinery (something got stuck, etc.). 3) Tried to run a low inductance motor like a high-speed motor. 4) When <Pt> = "11", polarity of PG is opposite. 5) When <F614: Pulse width of short circuit detection at start> = "0", and <F613>=2, or 3 inverter output short circuit.	1) Suppress load fluctuation. 2) Check whether a problem exists in the machinery. 3) Change the inverter to large capacity.
OCA1	0005	Overcurrent (U-phase arm)	Fault on IGBT in U-phase.	Fault in internal inverter. Contact your Toshiba distributor.
OCA2	0006	Overcurrent (V-phase arm)	Fault on IGBT in V-phase.	Fault in internal inverter. Contact your Toshiba distributor.
OCA3	0007	Overcurrent (W-phase arm)	Fault on IGBT in W-phase.	Fault in internal inverter. Contact your Toshiba distributor.
OCL	0004	Overcurrent (load side at startup)	1) Short circuit occurred on the output side. 2) The motor and output side wiring have defective insulation. 3) Impedance on the motor is low.	1) Check the wiring on the output side. 2) Check the insulation on the output side. 3) Set <F613: Short circuit detection at start> to "2" or "3".
OCr	0024	Overcurrent (Braking resistor)	1) When "Enabled" is set in <F304: Dynamic braking, OLr trip>: • The braking resistor is not connected. • The braking resistor connection is disconnected. • A braking resistor with a resistance value under the minimum allowable resistance value is connected. 2) Short circuit occurred between [PB] and [PC/-]. 3) IGBT fault on the dynamic braking drive circuit control.	1) Check if an adequate braking resistor is connected. When a braking resistor is not necessary, set "Disabled" in <F304>. 2) Check for problems on impedance of the braking resistor, wiring, etc. 3) Fault in internal inverter. Contact your Toshiba distributor. * This trip can not be reset. For trip clear, turn off the power and then turn it on again.
OH	0010	Overheat	1) The cooling fan is not working. 2) Ambient temperature is high. 3) The vent of the cooling fan is blocked. 4) Other heating units are nearby.	1) Replace if the cooling fan is not working during run. 2) Lower the ambient temperature. Reset after the inverter cools down. 3) Make sure the vent of the cooling fan is not blocked. 4) Place other heating units away from the inverter.
OH2	002E	External thermal trip *	A signal of external thermal trip is input.	Check that the motor is not overloaded.
OL1	000D	Overload (Inverter)	1) Sudden acceleration occurs and the acceleration time is short. 2) <Pt: V/f Pattern> does not match the machinery. 3) Momentary power failure occurred, and tried to start the rotating motor. 4) The DC braking amount is large. 5) The load is large for the inverter capacity.	1) Increase the acceleration time. <ACC: Acceleration time 1>, etc. 2) Set <Pt: V/f Pattern> according to the machinery. 3) Set <F301: Auto-restart>. Depending on the characteristic of machinery, <F302: Regenerative power ride-through> = "1" is also effective. 4) Set <F251: DC braking current> small and <F252: DC braking time> short. 5) Change the inverter to large capacity.

*Enable/Disable can be selected for trip with a parameter.

13

Trip display	Failure code	Trip name	Detection factor	Measures
OL2	000E	Overload (Motor) *	1) The motor is locked up. 2) Operation continues in low-speed range. 3) The motor is overloaded. 4) The setting of the electronic thermal does not match the motor characteristic. 5) <Pt: V/f Pattern> does not match the machinery.	1) Check the machinery. 2), 3), and 4) Set the electronic thermal according to the motor. <OLM: Motor overload protection characteristic>, <tHrA: Motor overload protection current 1>, etc. 5) Set <Pt: V/f Pattern> according to the machinery.
OL3	003E	Overload (IGBT)	1) While operating the low-speed range (15 Hz or less) with high carrier frequency, overload occurred. 2) Momentary power failure occurred, and tried to start the rotating motor.	1) • Reduce the load. • Lower the carrier frequency. Or set <F316: Carrier frequency control> to "Valid decrease". • Increase the output frequency. 2) Set <F301: Auto-restart>. Depending on the characteristic of machinery, <F302: Regenerative power ride-through> = "1" is also effective.
OLr	000F	Overload (Braking resistor) *	1) The braking rate is large. 2) The deceleration time is short.	• Increase the deceleration time. <dEC: Deceleration time 1>, etc. • Change the braking resistor (option) to a large capacity, and set <F309: Braking resistor capacity>.
OP1	000A	Overvoltage (during acceleration)	1) Input voltage is high and showed abnormal fluctuation. 2) Connection is made as the following system. • Power supply capacity is 500 kVA or more. • The power factor improvement capacitor was opened/closed. • Equipment is connected that uses thyristor on the same system. 3) Momentary power failure occurred, and tried to start the rotating motor.	1) Use within the power supply voltage range. When no problem is found in the input voltage, install an input AC reactor (option). 2) Install an input AC reactor (option). 3) Set <F301: Auto-restart>. Depending on the characteristic of machinery, <F302: Regenerative power ride-through> = "1" is also effective.
OP2	000B	Overvoltage (during deceleration)	1) The deceleration time is short and the regenerative energy is large. 2) <F305: Overvoltage limit operation> is set to "1: Disabled". 3) Input voltage is high and showed abnormal fluctuation. 4) Connection is made as the following system. • Power supply capacity is 500 kVA or more. • The power factor improvement capacitor was opened/closed. • Equipment is connected that uses thyristor on the same system.	1) • Increase the deceleration time. <dEC: Deceleration time 1>, etc. • When the regenerative energy is large, install a braking resistor. 2) Change <F305> = "0", "2", and "3" to enable the Overvoltage limit operation. When the deceleration time is limited, install a braking resistor (option). 3) Use within the power supply voltage range. When no problem is found in the input voltage, install an input AC reactor (option). 4) Install an input AC reactor (option).

*Enable/Disable can be selected for trip with a parameter.

13

Trip display	Failure code	Trip name	Detection factor	Measures
OP3	000C	Overvoltage (during constant speed running)	1) Input voltage is high and showed abnormal fluctuation. 2) Connection is made as the following system. • Power supply capacity is 500 kVA or more. • The power factor improvement capacitor was opened/closed. • Equipment is connected that uses thyristor on the same system. 3) The motor was rotated with the force on the load side, and it became to regenerative status.	1) Use within the power supply voltage range. When no problem is found in the input voltage, install an input AC reactor (option). 2) Install an input AC reactor (option). 3) Install a braking resistor (option).
Ot	0020	Overtorque *	The load torque reached the overtorque level during run.	• Check the load side. • Check the overtorque detection setting is correct. <F615: Overtorque trip>, <F616: Overtorque detection level during power running>, <F617: Overtorque detection level during regen>, <F618: Overtorque detection time>, etc.
Ot2	0041	Overtorque 2	1) The output current during power running reached <F601: Stall prevention level 1> or more, and the setting time in <F452: Stall detection time during power running> elapsed. 2) The power running torque during power running reached <F441: Power running torque limit level 1> or more, and the setting time in <F452: Stall detection time during power running> elapsed.	• Reduce the load. • Lower the detection level of <F601> or <F441>.
OtC3	0048	Overtorque/ Overcurrent *	Overtorque or overcurrent on the shock monitoring function was detected.	• Check the load. • When no problem is found, check if the shock monitoring function setting is correct. <F590: Shock monitoring> to <F598: Shock monitoring detection condition>
PrF	003B	STO circuit fault	Fault in the safe torque off (STO) circuit.	Fault inside the inverter. Contact your Toshiba distributor.
SOUT	002F	PM step-out *	1) The load changed rapidly. 2) Sudden acceleration/deceleration occurs. 3) The motor shaft is locked up. 4) Output side phase has failed.	1) and 2) Increase the acceleration/ deceleration time. <ACC: Acceleration time1>, <dEC: Deceleration time 1>, etc. 3) Check the motor and release the lock. 4) Check the wiring on the output side.
UC	001D	Undercurrent *	The output current declined to the undercurrent detection level during run.	• Check the load. • Check that the undercurrent detection setting is correct. <F610: Undercurrent trip>, <F611: Undercurrent detection level>, <F612: Undercurrent detection time>, etc.

*Enable/Disable can be selected for trip with a parameter.

13

Trip display	Failure code	Trip name	Detection factor	Measures
UP1	001E	Undervoltage (Power circuit) *	The input voltage (power circuit) declined.	• Check the input voltage. • Check that the undervoltage detection setting is correct. <F625: Undervoltage detection level>, <F627: Undervoltage trip>, etc. • To avoid trip in momentary power failure, set <F627> = "0: Disabled", and set <F301: Auto-restart> and <F302: Regenerative power ride-through level> to "1".
Ut	003C	Undertorque *	The load torque reached the undertorque level during run.	• Check the load side. • Check that the undertorque detection setting is correct. <F651: Undertorque trip>, <F652: Undertorque detection level during power running>, <F653: Undertorque detection level during regen>, <F654: Undertorque detection time>, etc.
UtC3	0049	Undertorque/ Undercurrent *	Undertorque or undercurrent on the shock monitoring function was detected.	• Check the load. • When no problem is found, check if the shock monitoring function setting is correct. <F590: Shock monitoring> to <F598: Shock monitoring detection condition>

*Enable/Disable can be selected for trip with a parameter.

■ Alarm information

Alarm display	English	Detection factor	Measures
A-09	Panel disconnection alarm	The cable connecting the inverter and panel are disconnected during run with a run command from the operation panel and extension panel.	Check the connection on the inverter and panel.
A-17	Key failure alarm	• [RUN] or [STOP/RESET] key on the operation panel is pressed and hold for 20 seconds or more. • The operation panel key has failed.	Check the operation panel. If the failure occurs again, contact your Toshiba distributor.
A-18	Analog input disconnection alarm	The input level of the terminal [II] became the setting value or less of <F633: II analog input disconnection detection level> .	• Check that the signal line connected to the terminal [II] is not disconnected. • Check that the <F633> setting is correct.
A-43	Communication alarm (embedded Ethernet)	Condition very close to the communication time out trip.	Perform the same measures with communication time out "E-43".
COFF	Control power option alarm	1) Undervoltage on the control power supply input between [+SU] and [CC]. 2) The setting of <F647: Control power option failure detection> is improper.	1) Check the voltage on the control power supply input between [+SU] and [CC]. 20 Vdc or more is required. 2) When the control power supply option is not used, set <F647> = "0". *When [COFF] occurs, turn the power OFF once, and reset.
MOFF	Undervoltage alarm	The input voltage (power circuit) declined.	Check the input voltage. If no problem is found, internal error may be the issue. Contact your Toshiba distributor.

13

Alarm display	English	Detection factor	Measures
PrA	STO activated	1) Open state between [STOA]/[STOB] and [PLC] terminal. 2) 24V output terminal [PLC]/[P24] overload. 3) SW1 is set on "PLC" position and an external power is not supplied.	1) Short circuit [STOA] - [STOB] - [PLC]. (By default, short circuit is done with a shorting bar). 2) Check 24V load. 3) Check SW1 position and external power supply.
t	Communication alarm (RS485, option)	Condition very close to the communication time out trip.	Perform the same measures with communication time out "Err5" and "Err8".
tUn1	Brake learning error	1) The load is heavy. 2) Parameter setting is improper. 3) Braking operation is abnormal.	1) Perform learning with no load or light load in approx. 3 % or less rating. 2) Set the motor parameters and learning related parameters in advance. 3) Check the brake.
tUn3	Light-load high-speed learning error	Setting of the motor parameter is improper.	Set the motor parameters according to the motor.

■ Pre-alarm information

Pre-alarm display	English	Detection factor	Measures
C	Overcurrent pre-alarm	Condition close to the overcurrent trip.	Perform the same measures with overcurrent "OC1", "OC2", and "OC3".
H	Overheat pre-alarm	Condition close to the overheat trip.	Perform the same measures with overheat "OH".
L	Motor overload pre-alarm	Condition close to the overload trip.	Perform the same measures with overload "OL1", "OL2", and "OL3".
P	Overvoltage pre-alarm	Condition close to the overvoltage trip.	Perform the same measures with overvoltage "OP1", "OP2", and "OP3".

■ Message information

Message display	English	Description	Remarks
A-01	V/f 5-point setting error 1	When <Pt:V/f Pattern> = "7: V/f 5-point setting", two or more from <vL>, <F190>, <F192>, <F194>, <F196> and <F198> are set to the same value other than 0.0 Hz.	Set different value on each parameter.
A-02	V/f 5-point setting error 2	Inclination of V/f is large.	• Set V/f 5-point and <vLv>/<vL> for the V/f inclination to be gentle. • Increase the value of <VL>, or decrease the value of <VLV>.
A-05	Base frequency setting error	Tries to run in frequency over 10 times of the base frequency.	• Check that the base frequency setting is correct. <vL: Base frequency 1>, etc. • Operate in frequency within 10 times of the base frequency.
ASIA	Setting for Asia	Setting for Asia is selected in the setup menu.	-
Atn	During auto tuning	Auto-tuning in progress.	A message that indicates auto-tuning in progress. No problem if the message disappears after several seconds.

Message display	English	Description	Remarks
CHn	Setting for China	Setting for China is selected in the setup menu.	-
CLr	Reset command acceptable	The following was operated after trip is occurring. 1) Pressed [STOP] key once. 2) Set the reset terminal ON. (During trip resetting operation)	Reset is performed with the following operation. 1) Press [STOP] key again. 2) Set the reset terminal OFF.
db	During DC braking	DC braking in progress.	-
dbOn	During motor shaft fixing	Motor shaft fixing in progress.	A message indicates the motor fixing control in progress. When standby is turned OFF, the control stops.
E1	Panel display one digit overflow	The display digit on the operation panel overflowed by one digit.	-
E2	Panel display two digits overflow	The display digit on the operation panel overflowed by two digits.	-
E3	Panel display three digits overflow	The display digit on the operation panel overflowed by three digits.	-
EASy	Easy mode	Switched to [Easy mode].	-
End	Last of data	The last data item in <History function>.	-
EOFF	Emergency off command acceptable	When a run command is other than the operation panel, [STOP/RESET] key was pressed once.	To apply emergency off, press [STOP] key again. If emergency off does not occur, press other keys.
Err1	Frequency point setting error	The setting on point 1 and point 2 of the frequency command is close.	Set apart point 1 and point 2 of the frequency command.
EU	Setting for Europe	Setting for Europe is selected in the setup menu.	-
FAIL	Password failure	Entered number in <F739: Password verification> does not match <F738: Password setting>.	-
FIrE	During Fire speed run/Forced run	Fire speed run/Forced run is in progress. ("FIrE" and the output frequency are alternately displayed)	A message indicates fire speed run/forced run in progress. It stops when turning the power OFF.
FJOG	Fwd JOG	Forward jog run in progress.	-
HEAd	Head of data	The first data item in <History function>.	-
HI	Upper limit of setting value	The upper limit of the setting value.	-
Init	During Initializing	• Set <tyP: Default setting> = "3" or "13" and initialization is in progress. • Region setting in progress with the setup menu.	No problem if the display shows "0.0" after several seconds.
JP	Setting for Japan	Setting for Japan is selected in the setup menu.	-
LO	Lower limit of setting value	The lower limit of the setting value.	-
LStP	During run sleep	Run sleep in progress.	-
n---	No detailed information of past trip	While "nErr" and a value are alternately displayed, [OK] key is pressed and detailed information are read.	Normal display.

Message display	English	Description	Remarks
nErr	No error	No trip records in the past trip history on [Monitor mode].	-
OFF	Standby OFF	The input terminal with assigned standby is OFF.	-
PASS	Password coincidence	Entered number in <F739: Password verification> matched <F738: Password setting>.	-
rJOG	Rev JOG	Reverse jog run in progress.	-
rtry	During Retry/Speed search	Retry/speed search in progress.	-
SEt	Region setting acceptable	• Display at first power on. • Display after setting <SEt> = "0".	Set a region to use in the setup menu.
Srvo	During servo lock	Servo lock in progress.	-
Std	Setting mode	Switched to [Setting mode].	-
StOP	During deceleration stop at power failure	Deceleration stop at power failure in progress.	A message indicates deceleration stop during power failure. The stop state is kept until the run command is turned OFF.
tUn	During learning	Learning the brake sequence or light-load high-speed operation in progress. ("tUn1" and the output frequency are alternately displayed)	-
tUn2	Light-load high-speed learning setting error	Error exists in learning operation.	Refer to Operation Manual, and perform learning operation.
U---	Waiting for search	Waiting for search condition in <Changed parameters search & edit>.	-
U--F	During forward search	Forward search in progress in <Changed parameters search & edit>.	-
Undo	All key unlocked	When "Locked" is set in <F737: Panel keys lockout>, pressed [OK] key for five seconds or more.	The key operation on the operation panel is temporarily valid.
U--r	During reverse search	Reverse search in progress in <Changed parameters search & edit>.	-
USA	Setting for North America	Setting for North America is selected in the setup menu.	-

13. 2 How to reset trip

Important

- Reset the inverter that has tripped after eliminating the cause of the trip.
  If it is not eliminated, the inverter will trip again even after reset. Pay enough attention.

The inverter can be reset with the following four methods after a trip occurs.

(1) Panel operation

You can reset from the operation panel even if terminal run or communication run is performed when the trip occurs.
The following is the reset procedure.

1 Press the [STOP/RESET] key with the trip displayed.
"CLr" blinks in the main area, and "Trip reset? (STOP-Key)" is displayed on the lower side.
- The backlight is red.
  (It is white when the setting of the backlight is changed.)

2 When you press the [STOP/RESET] key again while "CLr" is blinking, the trip is reset.
The display on the screen once disappears, and the screen immediately after power on is displayed.
The backlight returns to while.

(2) Terminal input (external signal)

Short the terminal [RES] and then open.
The inverter is reset when the terminal is opened.
In the default setting, the function "8: Reset 1" is assigned to the terminal [RES].
To reset with other input terminal, assignment of the reset function is required.

(3) Communication

For details, refer to "RS485 Communication Function Instruction Manual" (E6582143).

(4) Turning off power

Turn OFF the power and then turn it ON again.
When the power is off, some contents of the monitor at the time of the trip are lost.

To retain the contents of the monitor at the time of the trip, set <F602: Trip record retention> to "1: Retain at power off." Even after the inverter is reset with power off, the stored contents of the trip are displayed.
For details, refer to [6. 30. 3].

Important	• The inverter can be reset with power off, however, note that the equipment and the motor are damaged if the power is turned off frequently.

■ **When the inverter cannot be reset immediately after the trip**

1) For overload (inverter) "OL1", overload (motor) "OL2" and overload (braking resistor) "OLr", virtual cooling time is provided. During this time, the inverter cannot be reset by external signal or from the operation panel.

The reference virtual cooling time is as follows.
- "OL1": approximately 30 seconds after the occurrence of a trip
- "OL2": approximately 120 seconds after the occurrence of a trip
- "OLr": approximately 20 seconds after the occurrence of a trip

For overload (IGBT) "OL3", there is no virtual cooling time.

2) In case of overheat "OH", the inverter checks the temperature within. Wait until the temperature in the inverter falls sufficiently before resetting the inverter.

3) In case of overvoltage "OP1", "OP2" and "OP3", wait until the power circuit voltage decrease under the setting value of <F626: Overvoltage limit operation level>.

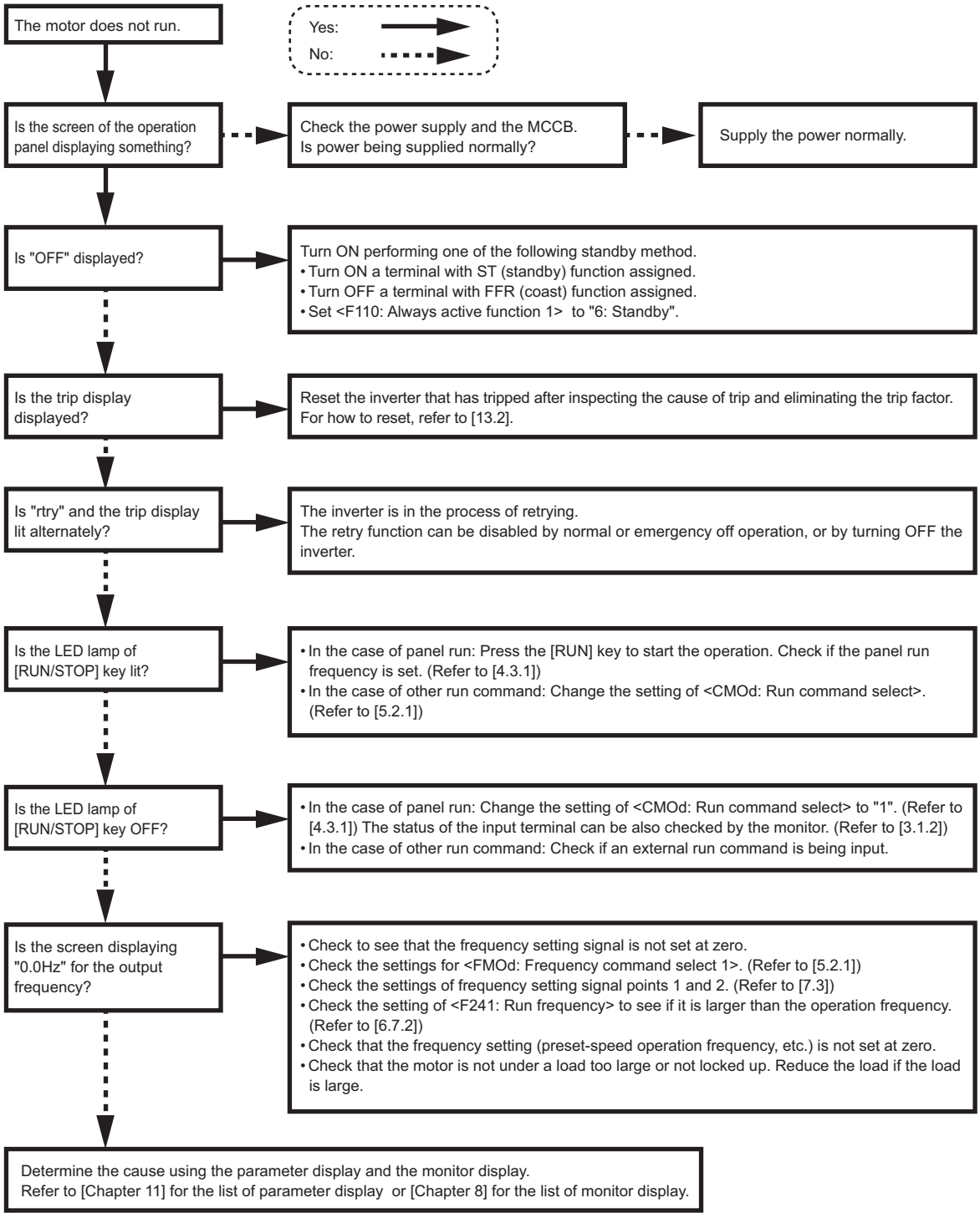
4) The inverter cannot be reset while the emergency off signal is being input to the input terminal.

5) The inverter cannot be reset while a pre-alarm occurs.

13

13. 3 If motor does not run while no trip message is displayed

If the motor does not run while no trip message is displayed, follow these steps to track down the cause.



13. 4 How to determine causes of other problems

The following table provides a listing of other problems, their possible causes and measures.

Problems	Causes	Measures
The motor runs in the wrong direction.	- The phase sequence of the output terminals [U/T1], [V/T2] and [W/T3] is wrong.	- Invert the phases of the output terminals [U/T1], [V/T2] and [W/T3].
	- The Fwd/Rev run signals are input inversely in terminal run.	- Invert the Fwd/Rev run signal terminals of the external input device. (Refer to [7. 2])
	- The setting of <Fr: Panel Fwd/Rev run select> is incorrect in panel run.	- Change <Fr> setting.
The motor runs but its frequency does not change.	- The load is large.	- Reduce the load.
	- The overload stall function is activated.	- Disable the overload stall function OFF in <OLM: Motor overload protection characteristic>, and reduce the load (Refer to [5. 2. 5]).
	- <FH: Maximum frequency> and <UL: Upper limit frequency> are set too low.	- Increase the setting values of these parameters.
	- The value of analog signal in the frequency command is small.	- Check the value of the signal, circuit, wiring, etc.
		- Check the characteristics (point 1 and point 2 setting) of the analog signal. (Refer to [7. 3])
	- If the motor runs at a low speed, the torque boost value is too large.	- Check if an overcurrent alarm or overload alarm has occurred and adjust <vb: Manual torque boost 1> and <ACC: Acceleration time 1>. (Refer to [5. 3. 6] and [5. 2. 4])
The motor does not accelerate or decelerate smoothly.	- <ACC: Acceleration time 1> or <dEC: Deceleration time 1> is set too short.	- Increase the value of each parameter.
A too large current flows into the motor.	- The load is large.	- Reduce the load.
	- If the motor runs at a low speed, the torque boost value is too large.	- Check if the value of <vb: Manual torque boost 1> is too large. (Refer to [5. 3. 6])
The motor runs at a higher or lower speed than the specified one.	- The motor has an improper voltage rating.	- Use a motor with a proper voltage rating.
	- The motor terminal voltage is too low.	- Check the setting value of <vLv: Base frequency voltage 1>. (Refer to [5. 2. 2])
		- Change the wire size to large.
	- The reduction gear ratio, etc., are not set properly.	- Adjust the reduction gear ratio, etc.
	- The frequency command is not set correctly.	- Check the value and range of the frequency command.
		- Adjust <vL: Base frequency 1> to the motor. (Refer to [5. 2. 2])

Problems	Causes	Measures
The motor speed fluctuates during run.	- The load is large or small, and load fluctuation is large.	- Reduce the load fluctuation.
	- The inverter or motor used does not have a rating large enough to drive the load.	- Change the inverter and motor to large capacity.
	- The frequency command fluctuates.	- Check if the frequency command such as the analog signal changes.
	- Vector control is not performed properly when <Pt: V/f Pattern> is set to "3" or "9".	- Check the settings and conditions of the motor parameters and vector control. (Refer to [5. 3. 4])
Parameter settings cannot be changed.	- <F700: Parameter reading&writing access lockout> is set to "1" to "4" (Locked).	- Set <F700> to "0: Unlocked".
	- The password is set with <F738: Password setting>.	- Input the password to <F739: Password verification> to clear. (Refer to [6. 34. 1])
	- Input terminal functions: "200" to "203" (Parameter writing/reading locked) are assigned to one of the digital input terminals, and the input terminal is ON.	- Turn off the applicable input terminal.
	- For reasons of safety, some parameters cannot be changed during run.	- Refer to [6. 34. 1].

The following is how to deal with parameter setting-related problems.

Problems	Measures
You forget parameters which have been reset.	- You can search for all changed parameters and set. For details, refer to "Changed parameters search & edit <GrU>" in [4. 2. 1].
You want to return all changed parameters to their respective default settings.	- You can return all parameters to default settings. For details, refer to [5. 3. 9].

13