Pr.	Functions	Settings		Factory Setting
✎9-04	Communication protocol	**ASCII mode** d0: 7,N,2 d1: 7,E,1 d2: 7,O,1 d3: 8,N,2	d4: 8,E,1 d5: 8,O,1 **RTU mode** d6: 8,N,2 d7: 8,E,1 d8: 8,O,1	d0

5 Troubleshooting and Fault Information

The VFD-L AC drive has a comprehensive fault diagnostic system that includes several different alarms and fault messages. Once a fault is detected, the corresponding protective functions will be activated. The following faults are displayed on the AC drive digital keypad. The six most recent faults can be read on the digital keypad display by viewing Pr.6-07 to Pr.6-12.
NOTE: faults can be cleared by pressing the Reset key on the keypad or Input Terminal.

Common Problems and Solutions

Fault Name	Fault Descriptions	Corrective Actions
oc	The AC drive detects an abnormal increase in current.	1. Check whether the motors horsepower corresponds to the AC drive output power. 2. Check the wiring connections between the AC drive and motor for possible short circuits. 3. Increase the Acceleration time (Pr.1-09, Pr.1-11). 4. Check for possible excessive loading conditions at the motor. 5. If there are any abnormal conditions when operating the AC drive after the short-circuit is removed, the drive should be sent back to manufacturer.
ou	The AC drive detects that the DC bus voltage has exceeded its maximum allowable value.	1. Check whether the input voltage falls within the rated AC drive input voltage. 2. Check for possible voltage transients. 3. Bus over-voltage may also be caused by motor regeneration. Increase the decel time.
oH	The AC drive temperature sensor detects excessive heat.	1. Ensure that the ambient temperature falls within the specified temperature range. 2. Make sure that the ventilation holes are not obstructed. 3. Remove any foreign objects on the heat sink and check for possible dirty heat-sink fins. 4. Provide enough spacing for adequate ventilation.
Lu	The AC drive detects that the DC bus voltage has fallen below its minimum value.	Check whether the input voltage falls within the rated AC drive's input voltage.
oL1	Internal electronic overload trip	1. Check for possible motor overload. 2. Check electronic thermal overload setting. 3. Increase motor capacity. 4. Reduce the current level so that the drive output current does not exceed the value set by the Motor Rated Current Pr.7-00.
EF	The external terminal EF-GND goes from OFF to ON.	When external terminal EF-GND is closed, the output will be turned off. (under N.Q.E.F.)
oL2	Motor overload. Check the parameter settings (Pr.6-03 to Pr.6-05)	1. Reduce the motor load. 2. Adjust the over-torque detection setting to an appropriate setting.
ocA	Over-current during acceleration: 1. Short-circuit at motor output. 2. Torque boost too high. 3. Acceleration time too short. 4. AC drive output capacity is too small.	1. Check for possible poor insulation at the output line. 2. Decrease the torque boost setting in Pr.7-02. 3. Increase the acceleration time. 4. Replace with the AC drive with one that has a higher output capacity (next HP size).
ocd	Over-current during deceleration: 1. Short-circuit at motor output. 2. Deceleration time too short. 3. AC drive output capacity is too small.	1. Check for possible poor insulation at the output line. 2. Increase the deceleration time. 3. Replace with the AC drive with one that has a higher output capacity (next HP size).
bb	External Base Block. AC drive output is turned off.	1. When the external input terminal (B.B) is active, the AC drive output will be turned off. 2. Disable this connection and the AC drive will begin to work again.
ocn	Over-current during steady state operation: 1. Short-circuit at motor output. 2. Sudden increase in motor loading. 3. AC drive output capacity is too small.	1. Check for possible poor insulation at the output line. 2. Check for possible motor stall. 3. Replace with the AC drive with one that has a higher output capacity (next HP size).

Fault Name	Fault Descriptions	Corrective Actions
cF1	Internal memory IC can not be programmed.	1. Switch off power supply. 2. Check whether the input voltage falls within the rated AC drive input voltage. 3. Switch the AC drive back on.
cF2	Internal memory IC can not be read.	1. Check the connections between the main control board and the power board. 2. Reset drive to factory defaults.
cF3	Drive's internal circuitry abnormal.	1. Switch off power supply. 2. Check whether the input voltage falls within the rated AC drive input voltage. Switch on the AC drive.
cFA	Auto accel/decel failure	Don't use the function of auto acceleration/deceleration.
HPF	Hardware protection failure	Return to the factory.
codE	Software protection failure	Return to the factory.
CE1	Communication Error	1. Check the connection between the AC drive and computer for loose wires. 2. Check if the communication protocol is properly set.
oL	The AC drive detects excessive drive output current.	1. Check whether the motor is overloaded. 2. Reduce torque compensation setting as set in Pr.7-02. 3. Increase the AC drive's output capacity. **Note:** The AC drive can withstand up to 150% of the rated current for a maximum of 60 seconds.

6 Standard Specifications

Voltage Class			115V		230V			
Model Number VFD-XXXLXXA/B			002	004	002	004	007	015
Applicable Motor Output (kW)			0.2	0.4	0.2	0.4	0.7	1.5
Output Rating	Rated Output Capacity (KVA)		0.6	1.0	0.6	1.0	1.6	2.7
	Rated Output Current (A)		1.6	2.5	1.6	2.5	4.2	7.0
	Max. Output Voltage (V)		3-phase corresponds to double input voltage		Three-phase corresponds to input voltage			
	Rated Frequency (Hz)		1.0~400Hz					
Power	Rated Input Current (A)		6	9	4.9/1.9	6.5/2.7	9.7/5.1	★/9
	Input voltage Tolerance		Single phase 90~132V 50/60Hz		Single / 3-phase 180~264V 50/60Hz			3-phase 180~264V 50/60Hz
	Frequency tolerance		±5%					
Control Characteristics	Control system		SVPWM (Sinusoidal Pulse Width Modulation, carried frequency 3kHz~10kHz)					
	Output Frequency Resolution		0.1Hz					
	Torque Characteristics		Including the auto-torque, auto-slip compensation, starting torque can be 150% at 5 Hz					
	Overload Endurance		150% of rated current for 1 minute					
	Accel/Decel Time		0.1~600Sec. (can be set individually)					
	V/F pattern		V/F pattern adjustable					
	Stall Prevention Level		20~200%, setting of Rated Current					
Operating Characteristics	Frequency Setting	Keypad	Setting by ▲▼ keys or V.R					
		External Signal	Potentiometer-5KΩ/0.5W, DC 0 ~ +10V (input impedance 47KΩ), 4~20mA (output impedance 250Ω), multi-function inputs1 to 3 (3steps, JOG, UP/DOWN command), communication setting					
	Operation Setting	Keypad	Setting by RUN//STOP keys					
	Signal	External Signal	M0,M1,M2,M3 can be combined to offer various modes of operation, RS-485 communication port					
	Multi-function Input Signal		Multi-step selection 0 to 3, Jog, accel/decel inhibit, first/second accel/decel switch, counter, PLC Operation, external Base Block (NC,NO) selection					
	Multi-function Output Signal		AC Drive Operating, Frequency Attained, Non-zero speed, Base Block, Fault Indication, Local/Remote indication, PLC Operation indication.					
	Other Function		AVR, S-curve, Over-Voltage Stall Prevention, DC Braking, Fault Records, Adjustable Carried Frequency, Starting Frequency Setting of DC Braking , Over-Current Stall Prevention, Momentary Power Loss restart, Reverse Inhibition, Frequency Limits, Parameter Lock/Reset					
Environment	Protection		Over Voltage, Over Current, Under Voltage, Overload, Electronic thermal, Overheating, Self-testing					
	Other		Including EMI Filter					
	Cooling		Forced air-cooling					
	Installation Location		Altitude 1,000 m or below, keep from corrosive gasses, liquid and dust					
	Ambient Temperature		-10℃-40℃ (Non-Condensing and not frozen)					
	Storage Temperature		-20℃ to 60℃					
	Ambient Humidity		Below 90%RH (non-condensing)					
	Vibration		9.80665m/s²(1G) less than 20Hz, 5.88m/s² (0.6G) at 20 to 50Hz					