Yamaha				
Series:				
Error code:	**Part:**	**Solution:**	**Steps:**	**Steps:**
12	Display	Communication with the display has been disrupted.	If the system does not detect any errors, the system can return to normal right away.	1. Replace the display. 2. Replace cable 2. 3. Replace the controller.
13	Motor - Display	Communications data failure to display.		Replace the display.
31	Torque sensor	No communication signals.	If the system does not detect any errors, the system can return to normal right away.	1. Replace the torque sensor. 2. Replace the controller.
		Disconnected.		
		Short-circuited.		
		Wiring error between the torque sensor and controller.		
32		Wiring failure between the coil and cicuit board. (Wire rattle: nearly disconnected.)		
33		Abnormal open-circuit voltage.	If the system does not detect any errors, the system can return to normal by turning the power off and then on again. (If the system detects the same error more than once, the system cannot return to normal even if the power is turned off and then on again.)	1. Adjust the reference voltage of the torque sensor. 2. Replace the torque sensor. 3. Replace the controller.
34		Abnormal voltage (detected during operation / with high constant voltage).		
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36		Abnormal voltage (detected during operation / other).		
37		Abnormal voltage (detected during operation at low speed).		
38	Crank sensor	Torque sensor or crank sensor failure.	If the system does not detect any errors, the system can return to normal by turning the power off and then on again.	Replace the torque sensor, controller or drive axle.
39		Crank sensor short-circuit or defect.		Replace the controller or drive axle.
61	Controller	Abnormal voltage in U-phase current sensor, while motor is not in operation.	If the system does not detect any errors, the system can return to normal by turning the power off and then on again.	Replace the controller.
		Abnormal voltage in W-phase current sensor, while motor is not in operation.		
		Overcurrent is applied to U-phase of the motor.		
		Overcurrent is applied to V-phase of the motor.		

62	Motor	Overcurrent is applied to W-phase of the motor.	The system cannot return to normal even if the power is turned off and then on again.	Replace the controller.
		Abnormal current is applied to U-phase of the motor.		
		Abnormal current is applied to W-phase of the motor.		
		Abnormal current is applied to V-phase of the motor.		
63	Controller	Error reading data.	If the system does not detect any errors, the system can return to normal when the power is turned off and then on again.	Replace the controller.
66		Data error in external memory.		
		EEPROM error.		
64		Detected circuit board temperature is too low (-20 degrees).	If the system does not detect any errors, the system can return to normal by turning the power off and then on again.	
		Detected circuit board temperature is too high (125 degrees) (including DC circuit).		
		Sensor on the circuit board has nearly come loose.		
67	Motor	2 connecting wires are disconnected.	If the system does not detect any errors, the system can return to normal by turning the power off and then on again.	1. Replace the controller. 2. Replace wire 3, wire 4 or wire 5.
		Yellow wire is disconnected (U-phase).		
		Blue wire is disconnected (V-phase).		
		White wire is disconnected (W-phase).		
68	Encoder	Disconnected or guided cable has short-circuited.	If the system does not detect any errors, the system can return to normal by turning the power off and then on again.	1. Check the encoder connection. 2. Replace the encoder's connector cable. 3. Replace the controller. 4. Replace the motor.
		Black wire short-circuit.		
71	Battery	Data from battery cannot be received correctly.	If the system does not detect any errors, the system can return to normal by turning the power off and then on again.	1. Replace the DC plug or wire 2. 2. Replace the controller. 3. Replace the battery.
73		Detected battery voltage is too high (45V).		1. Replace the controller. 2. Replace the battery.

79	DC-DC Converter	Abnormal direct current.	If the system does not detect any errors, the system can return to normal by turning the power off and then on again.	1. Replace the external DC-DC converter. 2. Replace the controller.
X	Speed sensor	Speed sensor disconnected.	If the system does not detect any errors, the system can return to normal right away.	1. Check the speed sensor cable connector. 2. Check the distance between the sensor and magnetic sensor. 3. Replace the speed sensor set.
X	Drive unit - Battery	Communication error between the drive unit and the battery.	If the system does not detect any errors, the system can return to normal right away.	1. Check the battery communication port. 2. Replace the DC plug. 3. Replace the controller. 4. Replace the battery.