故障代码表（CURTIS系统，1212E）

序号	手柄故障代码	故障名称	故障触发逻辑	可能的原因	解决措施	故障来源
1	**11-1**	Severe Undervoltage 严重欠压	The undervoltage cutback is 0 for 64 ms with the main relay on. 主接触器吸合后，电池电压削减为0，电池电压低于9.6V报故障；	Defective controller 控制器损坏 Defective battery（Short-circuit pin 1.2 of the battery and measure the battery voltage) 电池损坏（短接电池1.2号脚，量电池电压）	Replace the controller 更换控制器 Replace the battery 更换电池	1212E控制器
2	**12-1**	Undervoltage Cutback 欠压削减	The undervoltage cutback is less than 100% with the main relay on. 主接触器吸合后，电池电压削减为小于100%，电池电压低于16.8V报故障；	Low battery （Short-circuit pin 1.2 of the battery and measure the battery voltage) 电池低压（短接电池1.2号脚，量电池电压） The battery connector has poor contact 电池接插件接触不良（电池端，线束端） The battery connector bracket is loose 电池接插件固定架松动	Replace the battery 更换电池 Replace the main power wiring harness 更换主电源线束 Fix the battery connector 固定电池接插件	1212E控制器
3	**13-1**	Severe Overvoltage 严重过电压	The keyswitch voltage is 10V above the allowed maximum voltage. 控制器设定36V，当电压大于46V报故障；	Incorrect battery voltage 电池电压高（短接电池1.2号脚，量电池电压） Main relay defective 控制器主接触器故障 Controller AD defective 控制器硬件检测故障	Replace the battery 更换电池 Replace the controller 更换控制器	1212E控制器
4	**13-2**		The keyswitch voltage is 4V above the allowed maximum voltage. 控制器设定36V，当电压大于40V报故障；			
5	**14-1**	Overvoltage Cutback 过压削减	The keyswitch voltage is greater than the user overvoltage（125%）threshold for 64 ms during the regen state or when the motor speed is greater than 2V. 停车或者下坡，KSI电压大于30V，持续64ms； 或者电机有转速时，KSI电压大于30V，持续64ms；	Incorrect battery voltage 电池电压高（短接电池1.2号脚，量电池电压） Defective main relay 控制器主继电器故障	Replace the battery 更换电池 Replace the controller 更换控制器	1212E控制器
6	**15-1**	Controller Severe Undertemp 控制器严重温度不足	The controller temperature is less than or equal to-40℃ for 48 ms. 控制器温度≤- 40℃，持续48ms。	Temperature sensor defective 温度传感器故障 Low ambient temperature 环境温度低	Replace the controller 更换控制器	1212E控制器
7	**16-1**	Controller Overtemp Cutback 控制器过热削减	The controller temperature is greater than or equal to the temperature cutback point（80~95℃）for 48 ms. 控制器温度大于或等于温度截止点（80~95℃）48 ms	Temperature sensor defective 温度传感器故障 After long-term operation with high current, the controller overheats. The vehicle is left to cool down and then restored. 长时间大电流运行，控制器过温，车辆静置散热后恢复。 If the vehicle's working condition is normal, the operating current of the vehicle needs to be tested. If the current is abnormal, the drive wheels need to be replaced. 若车辆工况正常，需要测试车辆的运行电流，电流异常需更换驱动轮；	Replace the controller 更换控制器 Replace the drive wheel 更换驱动轮	1212E控制器
8	**17-1**	Controller Severe Overtemp 控制器严重过热	The controller temperature＞95℃ 控制器温度＞95℃	Temperature sensor defective 控制器温度传感器故障 When the vehicle is in operation, if the temperature rise exceeds 95℃, over-temperature protection is provided.The vehicle is left to cool down and then restored. 车辆工作时，温升超过95℃，过温保护，车辆静置散热后恢复。 If the vehicle's working condition is normal, the operating current of the vehicle needs to be tested. If the current is abnormal, the drive wheels need to be replaced. 若车辆工况正常，需要测试车辆的运行电流，电流异常需更换驱动轮；	Replace the controller 更换控制器 Replace the drive wheel 更换驱动轮	1212E控制器
9	**21-2**	Throttle Fault 加速器故障	The HPD Sequencing fault is active for 10s. 操作顺序故障(22-1)超过10S	Incorrect throttle operation （Trigger the accelerator first and then the interlock） 加速器操作不正确（先触发加速器再触发互锁） Throttle defective 加速器问题	Replace the Throttle 更换加速器	1212E控制器
13	**22-1**	HPD Sequencing HPD操作顺序故障	At least 10% throttle is applied for 48 ms before the interlock state changes to on. 在互锁开关触发前，加速器输出超过10%且保持时间大于48ms；	IIncorrect throttle operation （Trigger the accelerator first and then the interlock） 加速器操作不正确（先触发加速器再触发互锁） Throttle defective 加速器问题	Replace the Throttle 更换加速器	1212E控制器
14	**23-1**	Main Relay Welded 主继电器黏连	The Capacitor Voltage is greater than (Keyswitch Voltage - 0.7V), and the capacitor bank voltage drop is less than 1.5V after the Main Welded PWM is applied to the motor for 96 ms. PWM作用于电机96 ms后，电容电压大于（KSI电压-0.7V），电容组压降小于1.5V。	Main relay defective 主继电器故障	Replace the controller 更换控制器	1212E控制器
15	**24-1**	Main Relay Did Not Close 主继电器为断开	The difference between the keyswitch voltage and capacitor voltage is greater than the DNC Voltage Threshold for 96 ms when the relay is engaged.	Main relay defective 主继电器故障 Incorrect Pull In Voltage 输入电压不正确	Replace the controller 更换控制器	1212E控制器
16	**24-2**		The difference between the keyswitch voltage and capacitor voltage is greater than the DNC Voltage Threshold for 96 ms after the relay is on.			
17	**25-1**	BMS Fault 锂电池故障	Byte 6, bits 0, of RPDO2 indicates that the BMS has an active fault. Over Voltage	RPDO2 indicates a fault in the BMS RPDO2表示BMS故障		1212E控制器
18	**25-2**		Byte 6, bits 1, of RPDO2 indicates that the BMS has an active fault.			
19	**25-3**		Byte 6, bits 2, of RPDO2 indicates that the BMS has an active fault.			
20	**25-4**		Byte 6, bits 3, of RPDO2 indicates that the BMS has an active fault.			
21	**26-1**	Precharge Failed 预充失败	The Capacitor Voltage is less than 65% of the Keyswitch Voltage for 500 ms after the Keyswitch Voltage is greater than 60% of the nominal voltage at startup. 电容电压小于电压的65% 启动时，Keyswitch Voltage大于标称电压的60%后，Keyswitch Voltage持续500ms。 检测ksi＞14.4V开始充电，电容电压小于15.6V；	Precharge PTC defective 预充电PTC故障	Replace the controller 更换控制器	1212E控制器
22	**26-2**		The Capacitor Voltage is less than (Keyswitch Voltage - 4V) before the relay is engaged. 继电器闭合前电容电压小于（KSI电压- 4V）。			

23	**31-1**	Stall Detected 电机堵转	The armature current is greater than 90% of the current limit and the motor speed is less than 10% of the maximum speed for the Stall Fault Time. 电流大于限流的90%，电机转速小于最大转速的10%，持续超过Stall Fault Time。	Defective controller 控制器故障 Defective motor 电机故障	Replace the controller 更换控制器 Replace the drive wheel 更换驱动轮	1212E控制器
24	**32-1**	Motor Short 电机短路	The capacitor voltage drop is greater than 1V after 10% PWM was applied to the motor for 500 µs at startup. 启动电机给了超过10%PWM，且超过500us，且电容电压跌落1V。	The motor is shorted 电机短路 The internal resistance of the motor is too small 电机内阻过小	Replace the drive wheel 更换驱动轮	
25	**32-2**		The motor is shorted. 电机短路	The motor is shorted 电机短路	Replace the drive wheel 更换驱动轮	
26	**32-3**		The motor was open when the system was powered on. 当系统通电时，电机开路。	The motor is open 电机开路 The terminals of the M1 / M2 wiring harnesses have poor contact M1\M2线束端子接触不良 The M1 / M2 wiring harnesses are broken M1\M2线束断裂	Replace the drive wheel 更换驱动轮 Replace the M1/M2 wiring harnesses 更换M1/M2线束	1212E控制器
27	**32-4**		The voltage on motor phase M1 is less than 3.5V after the main relay has been engaged. 主接触器吸合，电机M1电压低于3.5V	The motor is open 电机开路 Excessive internal resistance of the motor, motor problem 电机内阻过大，电机问题	Replace the drive wheel 更换驱动轮 Replace the M1/M2 wiring harnesses 更换M1/M2线束	
28	**33-1**	Battery Disconnect Fault 电池断开故障	The battery is disconnected. 电池电压跌落为0V	The battery suddenly dropped low. It's a battery problem 电池瞬间低压，电池问题 The battery connector has poor contact 电池接插件接触不良（电池端，线束端） The battery connector bracket is loose 电池接插件固定架松动电池接插件接触不良	Replace the battery 更换电池 Replace the main power wiring harness 更换主电源线束 Fix the battery connector 固定电池接插件	1212E控制器
29	**33-2**		The battery voltage drops below 5V 电池电压跌落，低于5V			
30	**34-1**	EM brake failed To Set EM 刹车设置失败	The motor speed is greater than the Fault Motor Revs parameter for 80 ms when the EM brake is engaged. 制动器未打开，检测驱动轮有转速（超过1V）超过80ms;	Controller problem 控制器问题 EM brake problem 制动器问题	Replace the controller 更换控制器 Replace the EM brake 更换制动器	1212E控制器
31	**42-1**	Interlock SRO Fault 互锁SRO故障	The interlock input is on when the keyswitch is turned on and the Interlock Type parameter is not set to KSI Interlock. 互锁开关上电前闭合	Incorrect operation sequence 操作顺序不正确 Controller defective 控制器故障 The interlock switch triggers the limit block before being powered on 互锁开关上电前触发限位块	Replace the controller 更换控制器 The interlock switch is fixed in place 互锁开关固定到位	1212E控制器
32	**43-1**	Low BDI 低电量	The BDI percentage is less than the Low BDI Threshold parameter value. BDI低于15%报低电量故障	Low battery 电池电量低	Charge the battery in time. 电池及时充电	1212E控制器
33	**44-1**	Speed Supervision 速度监控	The motor speed is greater than 120% of the allowed maximum speed for more than 500 ms. 电机电压超过27V*88%*120%=28.5V，持续500ms	Speed is out of allowed range 速度超出允许范围 Motor problem 电机问题	Under normal working conditions, if no faults occur, no handling is required. 正常工况下不出现故障，可不处理; Replace the drive wheel 更换驱动轮	1212E控制器
34	**44-2**		The motor speed is greater than the ramped speed curve for more than 80 ms while the vehicle is decelerating. 车辆制动减速，电机速度大于减速曲线超过80ms			
35	**44-3**		The motor speed is greater than the ramped speed curve for more than 80 ms during interlock braking. 车辆互锁制动，电机速度大于减速曲线超过80ms			
36	**44-4**		The motor speed is greater than the ramped speed curve for more than 80 ms while the vehicle is decelerating during emergency reverse. 车辆紧急制动，电机速度大于减速曲线超过80ms			
37	**44-5**		The motor speed is greater than the following for more than 2s: Ramped throttle command percentage* maximum speed+ 20% of maximum Speed 加速器曲线和车辆速度不匹配;			
38	**45-1**	Lift Timeout 起升超时	The lift operating time exceeds the time specified with the Lift Time Limit parameter when the following parameter values are specified: • Lift Timeout Enable specifies 1 (On) • Lift Time Limit is set to a non-zero value. 起升运行时间超过起升时限规定的时间参数时，指定以下参数值： •Lift Timeout Enable指定1 （On） •Lift Time Limit设置为非零值。	The lift operating time expired but the lift is still active. 起升运行时间已过，但仍在起升运行。	Press the down button and the fault disappears 按下降按钮，故障消失	1212E控制器
39	**51-1**	Over Current Fault 过流故障	The armature current is greater than 120% of the current limit for 160 ms. 电流大于电流限制的120%，持续160ms。	Controller defective 控制器故障 Current sensor defective 电流传感器故障 If the vehicle's working condition is normal, the operating current of the vehicle needs to be tested. If the current is abnormal, the drive wheels need to be replaced. 若车辆工况正常，需要测试车辆的运行电流，电流异常需更换驱动轮；	Replace the controller 更换控制器 Replace the drive wheel 更换驱动轮	1212E控制器
40	**52-1**	Current Sense Fault 电流检测故障	The zero current point is out of range for 160 ms (the range is 812±32). 零电流点超出量程160ms（量程812±32）。	Current sampling circuit defective 电流采样电路故障	Replace the controller 更换控制器	1212E控制器
41	**52-2**		The AD data for the current is out of the allowed range. 电流检测数据超出允许范围。			
42	**53-1**		EM Brake driver is open or shorted. 制动器线圈开路或短路	Brake failure 制动器故障 The brake drive circuit is faulty 制动器线路故障	Replace the main control wiring harness 更换主控制线束 Replace the EM Brake 更换制动器	
43	**53-2**		The lift driver is open or shorted. 起升接触器线圈开路或短路	Fault of the lifting contactor 起升接触器故障 Fault of the lifting contactor circuit 起升接触器线路故障	Replace the main control wiring harness 更换主控制线束 Replace the lift driver 更换起升接触器	

44	**53-3**	Driver Fault 驱动故障	The lower driver is open or shorted. 下降电磁阀线圈开路或短路	Fault of the lower driver 下降电磁阀故障 Fault of the lower driver circuit 下降电磁阀线路故障	Replace the main control wiring harness 更换主控制线束 Replace the lower driver 更换下降电磁阀	1212E控制器
46	**53-5**		The lift driver is shorted when lift driver is off. 没给起升信号，检测驱动口又悬空又没有低压，外部短路。	Fault of the lifting contactor circuit 起升接触器线路故障	Replace the main control wiring harness 更换主控制线束	
47	**53-6**		The lower driver is shorted when lower driver is off. 没给下降信号，检测驱动口又悬空又没有低压，外部短路。	Fault of the lower driver circuit 下降电磁阀线路故障	Replace the main control wiring harness 更换主控制线束	
48	**53-7**		Main relay feedback is high when the relay is on for 100 ms. 主接触器闭合超过100ms还检测到高电平（检测线圈）	Controller defective 控制器故障	Replace the controller 更换控制器	
49	**53-8**		Main relay feedback is low when the relay is off for 100 ms. 主接触器闭合超过100ms还检测到低电平（检测线圈）	Controller defective 控制器故障	Replace the controller 更换控制器	
52	**54-3**		The controller did not receive CAN lift or CAN lower PDO messages within 2s after startup.			1212E控制器
55	**55-1**	EMR SRO Fault 紧急反向操作顺序故障	The emergency reverse switch is active when the keyswitch is turned on. 紧急反向开关上电前闭合	The emergency reverse switch is faulty 紧急反向开关故障 The wiring harness of the emergency reverse switch handle part is open-circuited 紧急反向开关手柄部分线束开路 The TA7 wiring harness of the entire vehicle is open. 整车TA7-线束开路	Replace the emergency reverse switch wiring harness 更换紧急反向开关线束 Replace the upper cover of the throttle 更换手柄上盖 Check the TA7- wiring harnesses 检查TA7-线束	1212E控制器
56	**55-2**		The emergency reverse switch is active when the interlock input is turned on and the EMR SRO Type parameter specifies a value other than SRO Off. SRO ON interlock, 互锁触发时可以触发紧急反向 先触发紧急反向再触发互锁报故障	Incorrect operation sequence 操作顺序不正确	First, trigger the interlock, and then trigger the emergency reverse when walking 先触发互锁，行走时触发紧急反向	
57	**55-3**		The absolute value of the throttle demand is greater than 10% after an emergency reverse operation and the EMR SRO Type parameter specifies a value other than SRO Off 紧急反向操作后，加速器大于10%，互锁触发情况下；加速器复位故障消失；	After an emergency reverse operation, if the accelerator exceeds 10%, a fault is reported 紧急反向操作后，加速器大于10%，报故障	The accelerator reset fault disappeared 加速器复位故障消失	
58	**55-4**		Emergency reverse is active when throttle in the forward direction is applied and the EMR SRO Type parameter specifies SRO on Interlock and Throttle.			
59	**56-2**	Creep SRO Fault Creep SRO 故障	The creep input is on but the interlock state has been off for 40 ms.			1212E控制器
60	**56-3**		The interlock state is on for 40 ms during creep mode. 直立行走模式下，互锁触发超过40ms	Incorrect operation sequence Cost 不正确的操作顺序	The interlock reset fault disappeared 互锁复位故障消失	
61	**56-4**		The controller cannot abort the creep brake state after the Interlock Brake Timeout expires.			
67	**61-1**	PDO Timeout PDO 通讯超时	During the operational NMT state, RPDO1 did not receive a message before the RPDO1 Event Time expired. 超过200ms没有接收到22C地址的报文	throttle defective 手柄故障 CANbus is overloaded can总线过载	Replace the throttle 更换手柄 Check the TA1- and TA2- wiring harnesses 检查TA1-，TA2-线束	1212E控制器
69	**61-5**		During the operational NMT state, RPDO2 did not receive a message from the node specified with BMS Node ID before the BMS PDO Timeout expired. 超过5000ms没有接收到2F0地址的报文	Battery defective 电池故障 CANbus is overloaded can总线过载	Replace the battery 更换电池 Check the TA1- and TA2- wiring harnesses 检查TA1-，TA2-线束	
71	**71-1**	Hardware Fault 硬件故障	The motor voltage is out of range for 64 ms.	Controller defective 控制器故障	Replace the controller 更换控制器	1212E控制器
72	**71-3**		The belly button check is enabled and theemergency reverse NO or NC input’s voltage is less than 1.5V for 100 ms.			
73	**71-4**		UID encryption failed or the microprocessors are not in productive mode.			
74	**71-5**		The CAN programming device’s OEM code differs from the hardware’s OEM code.			
75	**71-6**		Handshake with the Curtis 3150R gauge failed.			
76	**72-1**	Software Fault 软件缺陷	Unmatched supervisor firmware. 主从芯片不匹配，软件版本问题不匹配	Controller defective 控制器故障	Replace the controller 更换控制器	1212E控制器
77	**72-2**		Test mode was exited. 测试模式			
78	**72-3**		The Node Reset command is received when the motor speed is greater than 1.00V or the armature current is greater than (1/16 * Drive Current Limit). 电机运行时，外部设备发了NMT复位指令，0X00 8114或者8100			
84	**82-1**		A parameter marked as [PCF] in the Programming Menu Parameters chapter was set but the keyswitch has not been cycled. 参数表中标明[PCF]的参数，修改后会出现故障	Normal phenomenon 正常现象	重新上电故障消失 The fault disappeared when the power was restored	
85	**82-2**		The Steering Input Type parameter specifies an analog input but the Throttle Type parameter does not specify a CAN throttle. 只有一路模拟量，只能用于加速器或转弯；			
86	**82-3**		Two or more flexible switch inputs are assigned to the same function. 两个输入类型选了同一个功能	Inputs Switch 1 Function Switch 2 Function Switch 3 Function Switch 4 Function Switch 5 Function Two or more input switches select the same function 两个或多个输入开关选择了同一个功能	Set according to the factory parameters 按照出厂参数设定	

87	**82-4**	Parameter Fault 参数故障	• The Steering Angle 1 parameter is greater than or equal to Steering Angle 2. • The Steering Angle 1or Steering Angle 2 parameter is greater than Steering Angle Max. • The speed mode’s Fwd Max Speed parameter is less than or equal to Fwd Min Speed. • The speed mode’s Rev Max Speed parameter is less than or equal to Rev Min Speed. • Speed Limit HPD specifies On, and mode 1’s Fwd Max Speed is greater than mode 2’s Fwd Max Speed, and mode 1’s Rev Max Speed is less than mode 2’s Rev Max Speed, or vice versa. • The Forward Deadband parameter is greater than Forward Max. • The Reverse Deadband parameter is greater than Reverse Max. •转向角1参数大于等于转向角2。 •转向角1或转向角2 参数大于最大转向角。 •速度模式的Fwd Max speed参数小于或等于Fwd Min speed。 •速度模式的最大转速参数小于或等于最小转速。 •速度限制HPD设定On，模式1的前进最大速度 大于模式2的Fwd Max Speed，模式1的Rev Max Speed小于模式2的最大转速，反之亦然。 •前向死区参数大于前进最大值。 •反向死区参数大于反向最大值。	Incorrect parameter settings 参数设置不正确	Set according to the factory parameters 按照出厂参数设定	1212E控制器
88	**82-5**		• The EMR Input Type parameter specifies NC Switch Input but the emergency reverse NC function is not assigned to a flexible switch input. • The Steering Input Type parameter specifies NC Switch Input but the steering function is not assigned to a flexible switch input. 功能参数设定的开关信号类型，但输入开关没有定义	The type of switch signal for setting functional parameters, but the input switch is not defined 功能参数设定的开关信号类型，但输入开关没有定义	Set according to the factory parameters 按照出厂参数设定	
89	**82-6**		The Pot Hi Switch Function parameter specifies a value other than Pot Hi Input but the Throttle Type parameter specifies a 3-wire pot throttle.			
91	**83-2**	NV Failure 存储器故障	Write FRAM failed. 存储器写入故障	FRAM operation failed FRAM 操作失败 The external power supply is unstable 外部电源不稳定	Replace the controller 更换控制器 Replace the wiring harness 更换主控制线束	1212E控制器
92	**83-3**		Restore parameters failed during flashing. 刷程序时，复位参数默认值失败			
93	**83-4**		Saving the brownout flag failed. 掉电不能保存参数			
94	**83-5**		Block number is out of range. 存储或者读取速度超范围			
97	**84-2**	SUPERVISOR_FIFTEEN_V_SUPPLY_FAILURE	The controller failed to supply power from the chip 控制器从芯片供电故障	Controller defective 控制器故障	Replace the controller 更换控制器	1212E控制器
98	**84-8**	SUPERVISOR_HARDWARE_FAULT	The controller has a hardware failure from the chip 控制器从芯片硬件故障			
99	**84-11**	PRIMARY_INIT_CAN_OBJ	The main chip of the controller is faulty 控制器主芯片故障			
100	**84-12**	PRIMARY_INIT_ILLEGAL_CAN_SIZE				
101	**84-13**	PRIMARY_INIT_CAN_SIZE				
102	**84-14**	PRIMARY_INIT_TIMEOUT				
103	**84-15**	PRIMARY_WRITE_OJECT				
104	**84-16**	PRIMARY_WRITE_SIZE				
105	**84-17**	PRIMARY_WRITE_TIMEOUT				
106	**84-18**	PRIMARY_WRITE_CRC				
107	**84-19**	PRIMARY_WRITE_ACK				
108	**84-20**	PRIMARY_TASK_QUEUE_FAIL				
109	**84-21**	PRIMARY_FAULT_ACTIONS				
110	**84-22**	PRIMARY_ALU_FAIL				
111	**84-23**	PRIMARY_MESSAGE_WATCHDOG				
112	**84-24**	PRIMARY_FAULT_ACK				
113	**84-25**	SUPERVISOR_INIT_CAN_OBJ	The controller malfunctioned from the chip 控制器从芯片故障			
114	**84-26**	SUPERVISOR_INIT_ILLEGAL_CAN_SIZE				
115	**84-27**	SUPERVISOR_INIT_CAN_SIZE				
116	**84-28**	SUPERVISOR_INIT_TIMEOUT				
117	**84-29**	SUPERVISOR_WRITE_OJECT				
118	**84-30**	SUPERVISOR_WRITE_SIZE				
119	**84-31**	SUPERVISOR_TASK_QUEUE_FAIL				
120	**84-32**	SUPERVISOR_ALU_FAIL				
121	**84-33**	SUPERVISOR_MESSAGE_WATCHDOG				
122	**84-34**	SUPERVISOR_KSI	The controller malfunctioned from chip _KSI 控制器从芯片_KSI故障	Controller defective 控制器故障 KSI端口接触不良	Replace the controller 更换控制器 Check the terminals of the wiring harness TB12- 检查线束TB12-的线束及端子	1212E控制器
123	**84-35**	SUPERVISOR_INPUT_1_SWITCH	The controller's input switch 1 from the chip is faulty 控制器从芯片输入开关1故障	Controller defective 控制器故障	Replace the controller 更换控制器	
124	**84-36**	SUPERVISOR_INPUT_2_SWITCH	The controller's input switch 2 from the chip is faulty 控制器从芯片输入开关2故障	Controller defective 控制器故障 The emergency reverse switch signal is unstable 紧急反向开关信号不稳定	Replace the controller 更换控制器 Check the terminals of the wiring harness TA7- 检查线束TA7-的线束及端子 Replace the emergency reverse switch 更换紧急反向开关	
125	**84-37**	SUPERVISOR_INPUT_3_SWITCH	The controller's input switch 3 from the chip is faulty 控制器从芯片输入开关3故障	Controller defective 控制器故障 The signal of the BB Check switch is unstable BB Check 开关信号不稳定	Replace the controller 更换控制器 Check the terminals of the wiring harness TB2- 检查线束TB2-的线束及端子	
126	**84-38**	SUPERVISOR_INPUT_4_SWITCH	The controller's input switch 4 from the chip is faulty 控制器从芯片输入开关4故障	Controller defective 控制器故障 The signal of the turning deceleration switch is unstable 转弯减速开关信号不稳定	Replace the controller 更换控制器 Check the terminals of the wiring harness TB7- 检查线束TB7-的线束及端子 Replace the turn deceleration switch 更换转弯减速开关	
127	**84-39**	SUPERVISOR_INPUT_5_SWITCH	The controller's input switch 5 from the chip is faulty 控制器从芯片输入开关5故障	Controller defective 控制器故障	Replace the controller 更换控制器	
128	**84-43**	PRIMARY_INPUT_1_SWITCH	The input switch 1 of the main chip of the controller is faulty 控制器主芯片输入开关1故障	Controller defective 控制器故障	Replace the controller 更换控制器	

129	**84-44**	PRIMARY_INPUT_2_SWITCH	The input switch 2 of the main chip of the controller is faulty 控制器主芯片输入开关2故障	Controller defective 控制器故障 The emergency reverse switch signal is unstable 紧急反向开关信号不稳定	Replace the controller 更换控制器 Check the terminals of the wiring harness TA7- 检查线束TA7-的线束及端子 Replace the emergency reverse switch 更换紧急反向开关	
130	**84-45**	PRIMARY_INPUT_3_SWITCH	The input switch 3 of the main chip of the controller is faulty 控制器主芯片输入开关3故障	Controller defective 控制器故障 The signal of the BB Check switch is unstable BB Check 开关信号不稳定	Replace the controller 更换控制器 Check the terminals of the wiring harness TB2- 检查线束TB2-的线束及端子	
131	**84-46**	PRIMARY_INPUT_4_SWITCH	The input switch 4 of the main chip of the controller is faulty 控制器主芯片输入开关4故障	Controller defective 控制器故障 The signal of the turning deceleration switch is unstable 转弯减速开关信号不稳定	Replace the controller 更换控制器 Check the terminals of the wiring harness TB7- 检查线束TB7-的线束及端子 Replace the turn deceleration switch 更换转弯减速开关	
132	**84-47**	PRIMARY_INPUT_5_SWITCH	The input switch 5 of the main chip of the controller is faulty 控制器主芯片输入开关5故障	Controller defective 控制器故障	Replace the controller 更换控制器	
133	**80**	Mode fault 龟速开关故障	The slow button on the handle is faulty. The slow button was detected to be closed before startup.手柄龟速按钮故障，龟速按钮在开机前就检测到闭合。	Turtle speed switch adhesion 龟速开关黏连	Replace the upper cover of the throttle 更换手柄上盖	Handle
134	**81**	Lift fault 起升开关故障	The up button is faulty. The up button was detected to be pressed before the machine was turned on. 上升按钮故障，上升按钮在开机前就检测到被按下。	The lifting switch is adhered 起升开关黏连	Replace the upper cover of the throttle 更换手柄上盖	handle
135	**82**	Lower fault 下降开关故障	The down button is faulty. It was detected to be pressed before the device was turned on. 下降按钮故障，下降按钮在开机前就检测到被按下。	The descent switch is adhered 下降开关黏连	Replace the upper cover of the throttle 更换手柄上盖	handle
136	**83**	BMS Communication Outage 锂电池通讯工作	BMS Communication Outage 锂电池通讯工作	锂电池BMS损坏 The BMS of the lithium battery is damaged 锂电池到手柄的通讯线断了 The communication line from the lithium battery to the handle has broken 手柄的通讯模块损坏 The communication module of the handle is damaged	Replace the battery 更换电池 Check the TA1- and TA2- wiring harnesses 检查TA1-，TA2-线束	handle
137	**84**	throttle_FAULT 加速器故障	Improper sequence of throttle input. 输入密码前，加速器不在中位，需要复位加速器才能解除该故障。	Throttle defective 加速器故障	Replace the Throttle 更换加速器	handle
138	**85**	Controller Communication Outage 控制器通讯故障	Controller communication loss 控制器通讯丢失	The communication line from the controller to the handle is lost 控制器到手柄的通讯线丢失 Poor contact of KSI KSI接触不良 Controller defective 控制器故障	Check the TA1- and TA2- wiring harnesses 检查TA1-，TA2-线束 Check the TB8- wiring harnesses 检查TB8-线束 Replace the controller 更换控制器	handle
139	**86**	Lift system failure 连续起升故障	The output of the pumping station is running continuously. If the lifting system malfunctions, it might be due to a fault in the lifting microswitch泵站输出连续运行，起升系统故障，有可能是上升微动开关故障	Press the down button and the fault disappears 按下降按钮故障消失	/	handle
140	**90**	Over Voltage 电池过电压	The battery voltage is too high. 电池电压过高。	It might be that the charger is overcharged. 可能是充电器过充电。 There is a problem with the battery BMS. 电池BMS存在问题。 The feedback current charging caused by the vehicle going downhill for a long time. 车辆长时间下坡，引起的反馈电流充电引起。	Replace the battery 更换电池 Replace the charger 更换充电器	battery
141	**91**	Over Discharge 电池过放电	Over Discharge 电池过放电	Long-term disuse of lithium batteries leads to low battery power. 锂电池长期不用，造成电池电量低。 Overuse. 使用过度。	Replace the battery 更换电池	battery
142	**92**	Communication Outage 电池与控制器通讯超时	Communication Outage 电池与控制器通讯超时	The battery communication module is faulty 电池通讯模块故障	Replace the battery 更换电池	battery
143	**93**	Under Voltage 电池电压低	Under Voltage 电池电压低	It has been stored for a long time without being charged in time 长期存放，没有及时充电 The internal cells of the battery are damaged, resulting in the inability to charge electricity. 电池内部电芯损坏，造成无法充进电量。	Replace the battery 更换电池	battery
144	**94**	Over Current 电池过电流	Over Current 电池过电流	The device was not operating according to the program originally set by the controller 使用设备没有按照控制器原先设定的程序运行 After the controller was replaced, the parameters did not match 控制器更换以后，参数不匹配 Lithium batteries have problems in current detection 锂电池存在电流检测方面的问题	Replace the battery 更换电池	battery
145	**95**	Over Temperature Protect 电池严重过温	The battery temperature is seriously too high. The usage or transportation environment causes severe high temperatures inside the battery. 电池温度严重过高，使用或者运输环境，造成电池内部严重高温。	The battery temperature sensor is faulty 电池温度传感器故障	Replace the battery 更换电池	battery
146	**96**	Temperature Protect 电池温度过高	The battery temperature is too high, and the usage or transportation environment causes high temperatures inside the battery. 电池温度过高，使用或者运输环境，造成电池内部高温。	The battery temperature sensor is faulty 电池温度传感器故障	Replace the battery 更换电池	battery