

FAULT CODE	ERROR	POSSIBLE CAUSE	SUGGESTED REMEDY
1	SW Fault	Software error.	Update software.
2	SW Fault	Software error.	Update software.
3	SW Fault	Software error.	Update software.
4	SW Fault	Software error.	Update software.
5	SW Fault	Software error.	Update software.
6	SW Fault	Software error.	Update software.
7	SW Fault	Software error.	Update software.
8	SW Fault	Software error.	Update software.
9	SW Fault	Software error.	Update software.
10	SW Fault	Software error.	Update software.
11	SW Fault	Software error.	Update software.
12	SW Fault	Software error.	Update software.
13	SW Fault	Software error.	Update software.
14	SW Fault	Software error.	Update software.
15	SW Fault	Software error.	Update software.
16	SW Fault	Software error.	Update software.
17	SW Fault	Software error.	Update software.
19	Communication Fault: NM protocol fatal error	Communication to a module over system bus has failed.	Check bus cables. Check if a fatal error occurred on another module. If necessary, replace this module or update the software.
20	SW Fault: wrong profile version of remote device	Incompatible module connected.	Remove incompatible module or update the software.
21	SW Fault: CMM error, pool empty	Module out of resources.	Remove one or more modules.
22	SW Fault: A/D conversion timeout	Software error.	Replace module (see error history).
23	Communication Fault: more than 1 active power flip flop	Bus cable unplugged while driving; bus cable defective; or hardware failure.	Check bus cables. Unplug device after device from bus until fault is recovered.
24	SW Fault: CMM stopping not received	Communication to a module over system bus has failed; or a module (not the powerbase) created a critical failure.	Check bus cables. Check if a fatal error occurred on another module. If necessary, replace this module or update the software.
26-34	SW Fault	Software error.	Update software.
35	Joystick Center Fault	Joystick disconnected or defective.	Check if joystick is connected. Replace joystick Replace module.
36	Joystick Not Centered	Joystick out of center position for >5 sec after power up.	Release joystick or other input command. Cycle on/off switch.
37	Joystick Connection	Joystick disconnected or defective.	Check if joystick is connected. Replace joystick. Replace module.
38	Joystick Out of Range	Limiter plate changed; limiter plate defective; or joystick is badly calibrated.	Calibrate joystick. Replace joystick. Replace module
39	Joystick Signal Fault	Joystick disconnected or defective.	Check if joystick is connected. Replace joystick. Replace module.
40	Communication Fault: timeout for output DF	Bus cable unplugged while driving; bus cable defective; or hardware defective.	Check bus cables. Check if a fatal error occurred on another module. If necessary, replace this module or update the software. Unplug module after module from bus until fault is recovered.
41-43	SW Fault	Software error.	Update software.
44	Limit Sense Pots Open	Position feedback wiring open.	Check position feedback connector and wiring. Check position feedback devices.
45	Limit Sense Pots Shorted	Position feedback wiring shorted.	(Same as #44.)
46	High Battery Voltage	Battery voltage too high.	Disconnect charger.
47	Low Battery Voltage	Battery voltage too low.	Charge battery.
48	Temperature Out of Range	Temp. outside operating range.	Let system cool down (wait 15 minutes).

			Check motor brake connector. Check motor wiring. Check motor resistance and current. Decrease motor resistance: use a motor with a smaller resistance or add a parallel resistor. Replace motor.
49	Motor 1 Not Connected: resistance too high	Motor connector unplugged; motor wiring open; or defective motor.	
50	Motor 2 Not Connected: R too high	(Same as #49.)	(Same as #49.)
51	Motor 3 Not Connected: R too high	(Same as #49.)	(Same as #49.)
52	Motor 4 Not Connected: R too high	(Same as #49.)	(Same as #49.)
53	Motor 5 Not Connected: R too high	(Same as #49.)	(Same as #49.)
54	Motor Overcurrent	Motor overloaded or stalled; short in actuator or wiring; or defective motor.	Check motor wiring. Check motor resistance and current. Replace motor.
55	Motor Timeout	Motor operated in one direction longer than the programmed limit.	Increase the value of the Timeout parameter (this is an OEM parameter).
56	Sensor Reference Fault	Pressure sensor defective.	Replace device.
57	SW Fault: buffer empty or overflow	Module out of resources.	Update software.
58	EEPROM Fault: CRC of profile section is incorrect	Data in the nonvolatile memory is incorrect.	Replace module.
59	EEPROM Fault: CRC of calibration section is incorrect	Data in the nonvolatile memory is incorrect.	Replace module.
60	EEPROM Fault: CRC of calibration section is incorrect	Data in the nonvolatile memory is incorrect.	Download parameter file with the PCPS (Activate Advanced Cloning).
61	EEPROM Fault: CRC of critical section is incorrect	Data in the nonvolatile memory is incorrect.	Download parameter file with the PCPS (Activate Advanced Cloning).
62	EEPROM Fault: CRC of critical section is incorrect	Data in the nonvolatile memory is incorrect.	Download parameter file with the PCPS (Activate Advanced Cloning).
63	EEPROM Fault: E2PROM parameter disturbed	A parameter value is out of range.	Download parameter file with the PCPS (Activate Advanced Cloning).
64	EEPROM Fault: E2PROM parameter disturbed in critical section	A parameter value is out of range.	Download parameter file with the PCPS (Activate Advanced Cloning).
65	DMS Fault: inactive input device not centered	Inactive input device not centered; bus cable defective; or hardware failure.	Release inactive input device. Check bus cables Unplug device after device from bus until fault is recovered.
69	Bus Overload: bus B+ fuse has tripped	Bus supply is overloaded.	Check bus cables.
70	Hardware Fault: CRC of ROM incorrect	The continuous check of the program memory has detected an error.	Update software with the PCPS (Inhibit Application Start and download compatible software). Replace module.
73	Precharge Fault: H-bridge voltage does not reach battery voltage	The supervision of a module function has detected an error.	Replace powerbase.
74	Left Motor Disconnected: left motor current is too low	Motor connector unplugged; motor wiring open; or defective motor.	Check motor-brake connector. Check motor wiring. Check motor resistance and current. Replace motor.
75	Right Motor Disconnected	(Same as #74.)	(Same as #74.)
80	Main Relay Not Open	Main relay contact is welded.	Replace powerbase
81	Left Motor Shorted	Short in motor or wiring.	Check motor-brake connector. Check motor wiring. Check motor resistance and current.
82	Right Motor Shorted	Short in motor or wiring.	(Same as #81.)
83	Left Brake Disconnected: left brake current is too low	Motor connector unplugged; brake wiring open; brake defective; or brake voltage set too low.	Check motor-brake connector. Check brake wiring. Check brake resistance. Increase value of Brake Voltage parameter (this is an OEM parameter).
84	Right Brake Disconnected	(Same as #83.)	(Same as #83.)
85	Left Brake Overload: left brake current is too high	Brake wiring shorted; or brake defective.	Check motor-brake connector. Check brake wiring. Check brake resistance. Replace motor.
86	Right Brake Overload	(Same as #85.)	(Same as #85.)

87	Left Brake Not Released: left brake voltage is too low	Brake wiring open; brake defective; battery voltage below nominal operating range limit; or brake voltage is set too low.	Check motor-brake connector. Check brake wiring. Check brake resistance. Charge battery. Increase value of Brake Voltage parameter. Replace brake.
88	Right Brake Not Released	(Same as #87.)	(Same as #87.)
89	Left Brake Fault: voltage too high	Motor connector unplugged; brake wiring open or shorted; brake defective.	Check motor-brake connector. Check brake wiring. Check brake resistance. Replace brake.
90	Right Brake Fault: voltage too high	(Same as #89.)	(Same as #89.)
94	Main Relay Not Closed	Supervision of a module function has detected an error.	Replace Power Module
96	Current Sense Fault: current sense measurement left out-of-range	Supervision of a module function has detected an error.	Replace Power Module
97	Current Sense Fault: current sense measurement right out-of-range	Supervision of a module function has detected an error.	Replace Power Module
98	Overtemperature: heatsink too hot	Constant high load made the temperature reach the maximum limit; or excessive load on outputs	Let system cool down (wait 15 minutes). Check output currents
99	High Motor Temperature	Estimated motor temperature is too high; the parameters for the motor temperature estimation are not set optimally.	Let system cool down (wait 15 minutes). Check output currents. Check the parameters for the motor temp estimation (these are OEM parameters).
100	Battery Overvoltage	A downhill ride with fully charged batteries.	Do not drive downhill with fully charged batteries. Continue downhill ride at reduced speed. (This error is at the recoverable fault level).
101	Battery Undervoltage	Battery voltage below the lower operating range limit, or empty	Charge battery. (This error is at the warning level)
102	Powerbase High Temperature	A constant high load has overheated the Powerbase; or excessive load on outputs.	Check output currents.
104	High Battery Voltage	A downhill ride with fully charged batteries. Continue downhill ride at reduced speed. (This error is at the Recoverable Fault level.)	Do not drive downhill with fully charged batteries.
105	Low Battery Voltage	Battery voltage below the lower operating range limit, or empty.	Charge battery. (This error is at the Recoverable Fault level.)
107	Charger/Drive Inhibit: driving inhibited due to low voltage on the DMS line	Charger plugged in while driving; attempting to start while charger connected; deadman switch line (DMS) inhibits driving; or bus cable defective.	Disconnect charger. Check inhibiting modules. Unplug module after module from bus until fault is recovered. Check bus cables.
109	Communication Fault: drive command missing (Timeout CAN message)	Bus cable unplugged while driving, or bus cable defective.	Check bus cables.
110	High Pedal Protection: joystick out-of-center position during power up	Input command not zero during power up.	Release joystick. Release input command.
111	Center Detect Fault: center detect is not active when JS in center position	Joystick disconnected or defective.	Check if joystick cable is connected. Replace joystick. Replace module.
112	Center Detect Fault: center detect is active while JS is not centered	Joystick disconnected or defective.	Check if joystick cable is connected. Replace joystick. Replace module.
121	Communication Fault: input device failed	Bus cable unplugged while driving; bus cable defective; or periodic module supervision has detected breakdown of a module.	Check bus cables. Check if a fatal error occurred on another module. If necessary, replace this module or update the software. Unplug module after module from bus until fault is recovered.
122	SW Fault: overtake abort	Generic software fault.	Defective software; replace module. (See error history to determine which module caused the error.)
123	SW Fault: unresolvable duplicate output definition in system	Multiple modules of the same kind, which are only allowed to exist once in the system.	Remove duplicate modules, leaving just one unique module in the system.

124	SW Fault: unresolvable duplicate input definition in system	(Same as #123.)	(Same as #123.)
125	SW Fault: requested output definition not found	Communication to a module over the system bus has failed.	Check if a fatal error occurred on another module. If necessary, replace this module or update the software.
126	SW Fault: start of output failed	(Same as #125.)	(Same as #125.)
127	SW Fault: general menu error	The module whose function was just active, or was just activated, has failed.	Check if a fatal error occurred on another module. If necessary, replace this module or update the software.
128	Motor Control Warning: motor control loop is not stable	The control parameters do not match the motors being used; motor impedance parameters is set too high; or defective motor.	Download parameter file with the PCPS (Activate Advanced Cloning). Check Motor Impedance parameter and decreased value if necessary (this is a OEM parameter). Replace motor.
129	Communication Fault: Y-dataflow timeout	Bus cable unplugged while driving, or bus cable defective; hardware failure	Check bus cables. Replace defective bus cable or hardware
130	SW Fault: general SDO client error	Generic software fault.	Remove one or more modules. If error persists, contact Quantum Rehab.
131	Left Motor Output Fault: Incorrect output voltage	Motor connector unplugged; motor wiring open; short in motor or power module failure.	Check motor wiring. Replace motor. Replace power module.
132	Right Motor Output Fault	See error code #131	See error code #131
133	EEPROM Fault: incorrect CRC of BDI section	Data in the nonvolatile memory is incorrect.	Note: BDI will automatically reset to 100%. Update module software. Replace module if this error occurs periodically. (Check error history.
134	High Pedal Fault	Input command is not zero during power up.	Release input command. Cycle on/off switch.
135	Direction Assignment Error	Two commands assigned for the same direction.	Reassign directions.
136	Incompatible Device Connected: wrong protocol version of remote device	Incompatible module connected.	Remove incompatible module or update software.
137	Incompatible Device Connected: invalid device type or serial number	Incompatible module connected, or a module (other than the Powerbase) created a critical failure.	Unplug module after module from bus until fault is recovered. Check if a fatal error occurred on another module. If necessary, replace this module or update the software.
138	Main Relay Not Open: main relay not open during initial test	Charger connected; battery voltage below nominal operating range limit; or main relay contact is welded.	Disconnect charger. Charge battery. Replace Powerbase.
139	Communication Fault: CAN bus off	Bus cable defective, or hardware failure.	Check bus cables. Unplug module after module from bus until fault is recovered.
140	Controller Power Down Fault: internal controller supply remains active when switched off	Supervision of a module function has detected an error	Disconnect and reconnect battery. Replace power module.
141	Drive Restricted	Driving restriction active.	Clear restrictions.
142	Current Offset. Calibration Left: current offset Left is out of limit	Supervision of a module function has detected an error.	Replace power module if this error occurs periodically.
143	Current Offset Calibration Right	(Same as #142.)	(Same as #142.)
144	Puff Parameters Overlap	Puff parameters are overlapping (4-pressure setup).	Adjust parameters.
145	Sip Parameters Overlap	Sip parameters are overlapping (4-pressure setup).	Adjust parameters.
149	Open Wire in Indicator Left Circuit	Indicator bulb blown, or indicator not connected.	Check indicator bulb. Check indicator wiring.
150	Open Wire in Indicator Right Circuit	(Same as #149.)	(Same as #149.)
151	Open Wire in Light (L/R) Circuit	Light bulb blown, or light not connected.	Check light bulb. Check light wiring.
155	EEPROM Fault: CRC of config section is incorrect	Data in the nonvolatile memory is incorrect.	Set the configuration data with the help of the PCPS (OEM only). Replace Powerbase.
156	SW Fault: unexpected interrupt	The microcontroller system has triggered an unexpected interrupt.	Replace Powerbase if this error occurs periodically.

157	SW Fault: out of window range	Incompatible module connected.	Remove incompatible module or update software.
160	Set Recline to Vertical Position First!	Recline is not in down position.	Move recline to down position.
161	Set Standup to Down Position!	Standup is not in down position.	Move standup to down position.
163	One or More Initial Tests Not Processed	Not all initialize tests were processed.	Replace Powerbase if this error occurs periodically.
164	Invalid Configuration	Invalid value(s) in config section.	Set the configuration data with the help of the PCPS.
166	EEPROM Fault: CRC of distance section is incorrect.	Distance values are corrupted.	Note: This fault automatically resets the trip counters. Replace Powerbase if this error occurs periodically.
167	Brake Switch Opened During Idle	Brake switch is either open or not connected.	Close brake switch. Check brake wiring.
174	Memory Full: Code Could Not Be Saved	Not enough memory available (e.g., while learning IR codes).	Delete unused data in data section.
175	Memory Full: User-Defined Menu Too Big	Memory holding dynamic protocol table is full.	Update software. Replace Powerbase.
176	Learning of IR Code Failed. Retry.	Incorrect positioning of remote control device.	Try again with the remote control device in a different position
177	Motor 6 Not Connected: resistance too high	Motor connector unplugged; motor wiring open; or defective motor.	Check motor brake connector. Check motor wiring. Check motor resistance and current. Decrease motor resistance, by using a motor with a smaller resistance or by adding a resistor in parallel with motor.
181	Speed Potentiometer Out of Range	Invalid speed pot connection.	Replace Handcontrol.
192	Motor 1 Disconnected	Motor connector unplugged; motor wiring open; or defective motor.	Check motor brake connector. Check motor wiring. Check motor resistance and current. Replace motor.
193	Motor 2 Disconnected	(Same as #192.)	(Same as #192.)
194	Motor 1 Shorted	Short in motor or wiring.	Check motor brake connector. Check motor wiring. Check motor resistance and current.
195	Motor 2 Shorted	(Same as #194.)	(Same as #194.)
196	Current Offset Calibration Motor 1	Current offset of Motor 1 is outside the allowable limits.	Replace Powerbase.
197	Current Offset Calibration Motor 2	(Same as #196.)	(Same as #196.)
198	Current Sense Fault: Motor 1	Current measurement of Motor 1 is out of range.	Replace Powerbase.
199	Current Sense Fault: Motor 2	(Same as #198.)	(Same as #198.)
200	Motor 1 Output Fault: output voltage is incorrect	Motor connector unplugged; motor wiring open; short in motor or wiring; or controller failure.	Check motor wiring. Replace Powerbase. Replace motor.
201	Motor 2 Output Fault	(Same as #200.)	(Same as #200.)
203	Brake 1 Disconnected	Motor connector unplugged; brake wiring open; brake defective; or brake voltage set too low.	Check motor brake connector. Check brake wiring. Check brake resistance. Increase the Brake Voltage parameter (this is an OEM parameter) Replace brake.
204	Brake 2 Disconnected	(Same as #203.)	(Same as #203.)
205	Brake Driver Defective	Brake fault input high.	Replace Powerbase.
206	Hardware Fault: oscillator failure	Hardware failure.	Replace AAM.
207	On/Off Switch Disconnected	On/off switch disconnected while system is running.	Reconnect on/off switch.
208	Brake 1 Overload: current too high	Brake wiring shorted, or brake defective.	Check motor brake connector. Check brake wiring. Check brake resistance. Replace brake.
209	Brake 2 Overload: current too high	(Same as #208.)	(Same as #208.)
210	EEPROM Fault: CRC of poti section is incorrect	Data in the nonvolatile memory	Recalibrate potentiometer.
211	Poti Value Out Of Range	Poti calibration is invalid.	Recalibrate poti.
217	Actuator Overcurrent	Short in actuator or wiring; or actuator overload.	Check actuator wiring. Check actuator resistance and current.
218	Actuator Timeout	Actuator operated too long in one direction.	Release input command.
219	Reference Voltage Failed	Reference voltage failed.	Replace Powerbase.

221	Mode Switch Disconnected	Mode switch disconnected.	Reconnect Mode switch. If supervision not required, deactivate the Mode Jack Supervision parameter.
222	Handcontrol Missing or Defective	Handcontrol not connected or defective; or wrong system configuration data.	Reconnect Handcontrol. Replace Handcontrol Execute Save System Configuration function.
223	Standalone Missing or Defective	SAJ not connected or defective; or wrong system configuration data.	Reconnect SAJ. Replace SAJ. Save System Configuration.
224	Attendant Missing or Defective	Attendant Joystick not connected or defective; or wrong system configuration data.	Reconnect Attendant Joystick. Replace Attendant Joystick. Execute Save System Configuration function.
225	Advanced Actuator Module Missing or Defective	AAM not connected or defective; or wrong system configuration data.	Reconnect AAM. Replace AAM. Execute Save System Configuration function.
226	Enhanced Display Missing or Defective	Enhanced Display not connected or defective; or wrong system configuration data.	Reconnect Enhanced Display. Replace Enhanced Display. Execute Save System Configuration function.
227	Sip&Puff Module Missing or Defective	S&P not connected or defective; or wrong system configuration data.	Reconnect S&P. Replace S&P. Execute Save System Configuration function.
228	ECU Missing or Defective	ECU not connected or defective; or wrong system configuration data.	Reconnect ECU. Replace ECU. Execute Save System Configuration function.
229	Module Missing or Defective	Device not connected or defective; wrong system configuration data.	Reconnect device. Replace device. Execute Save System Configuration function.
230	Hardware Fault: charge pump defective	Supervision of a module function has detected an error.	Replace Powerbase.
231	Input Device Not Active	Input device not properly centered.	Release any inactive devices. Unplug module after module from bus until fault is recovered. Check joystick cable connection. Replace joystick. Replace module.
234	Incompatible Module Connected	Incompatible module connected.	Remove incompatible module or update software.