

Error Code	UI Title	UI Instructions	Error Name	Error ID
200	Recovery Tank Full	Drain the recovery tank.	DIRTY_WATER_FULL	kit.scrubber.dirty_water_full
201	Water Tank Empty	Inspect and fill the water tank.	CLEAN_WATER_EMPTY	kit.scrubber.clean_water_empty
203	Traction Motor Error	Turn off the machine. Disconnect the battery cable for 15 seconds. Reconnect the cable and turn on the machine. If the issue continues, contact your supervisor.	TRACTION_MOTOR	kit.scrubber.traction_motor
204	Brush Error	Inspect the brush for damage or debris. Adjust or replace as needed. If the issue continues, contact your supervisor.	BRUSH_ERROR	kit.scrubber.brush_error
205	Vacuum Error	Inspect the vacuum and hose for damage or debris. If the hose is broken, contact your supervisor.	VACUUM_ERROR	kit.scrubber.vacuum_error
206	Squeegee Error	Inspect the squeegee for damage or debris. Adjust or replace as needed. If the issue continues, contact your supervisor.	SQUEEGEE_ERROR	kit.scrubber.squeegee_error
207	Scrub Deck Error	Turn off the machine. Inspect the scrub deck for damage. Turn on the machine. If the issue continues or damage is detected, contact your supervisor.	BRUSH_DECK_ERROR	kit.scrubber.brush_deck_error
208	No Brush Detected	Make sure the brushes and pads are properly installed. If the issue continues, contact your supervisor.	NO_BRUSH_ERROR	kit.scrubber.no_brush_error
210	Processor Error	Restart the machine. If the issue continues, contact your supervisor.	N/A	processor
216	Emergency Stop Button Pressed	Inspect the environment and the machine. Release the emergency stop button by rotating it clockwise.	FIRMWARE_ESTOP	kit.scrubber.VCU.firmware_estop
217	Sensor Check in Progress	Drive the machine 10-15 feet (3-5m) along the route. To resume, press the Start/Pause button.	CLIFF_DETECTOR_NOT_CONVERGED	kit.scrubber.VCU.cliff_detector_not_converged
N/A	Water the Batteries	Check each battery level indicator. If low, use pump to add distilled water.	N/A	battery_water_reminder

Error Code	UI Title	UI Instructions	Error Name	Error ID
100	Steering Error	Turn off the machine. Wait 15 seconds. Turn on the machine. If the issue continues, contact your supervisor.	STATE_ESTIMATOR_ERROR	brainos.navigation.motion.state_estimator_error
10000	Route Lost	Drive the machine to the Home Marker. Restart the route.	DELOCALIZED	brainos.navigation.localization.delocalized
10001	Machine is Off Path	Follow the arrow and drive the machine to the highlighted path. Make sure the path is clear. To resume, press the Start/Pause button.	FAILED_TO_RESUME	brainos.navigation.localization.failed_to_resume
101	Steering Error	Turn off the machine. Wait 15 seconds. Turn on the machine. If the issue continues, contact your supervisor.	WHEEL_SLIPPAGE	brainos.navigation.motion.wheel_slippage
102	Steering Error	Turn off the machine. Wait 15 seconds. Turn on the machine. If the issue continues, contact your supervisor.	STEERING_PREDICTION_ERROR	brainos.navigation.motion.steering_prediction_error
103	Path is Blocked	Make sure the path is clear. Drive past any obstacles. To resume, press the Start/Pause button.	STUCK_TIMEOUT	brainos.navigation.motion.stuck_timeout
104	Path is Blocked	Make sure the path is clear. Drive past any obstacles. To resume, press the Start/Pause button.	PATH_BLOCKED	brainos.navigation.motion.path_blocked
105	Machine is Off Path	Follow the arrow and drive the machine to the highlighted path. Make sure the path is clear. To resume, press the Start/Pause button.	DRIVING_BACKWARD	brainos.navigation.motion.driving_backward
106	Machine is Off Path	Follow the arrow and drive the machine to the highlighted path. Make sure the path is clear. To resume, press the Start/Pause button.	FAILED_TO_FIND_PATH_DURING_RECOVERY	brainos.navigation.motion.failed_to_find_path_during_recovery
200	Recovery Tank Full	Drain the recovery tank. Drive the machine back to the route. To resume, press the Start/Pause button.	DIRTY_WATER_FULL	kit.scrubber.dirty_water_full
201	Water Tank Empty	Fill the water tank. Drive the machine back to the route. To resume, press the Start/Pause button.	CLEAN_WATER_EMPTY	kit.scrubber.clean_water_empty
203	Traction Motor Error	Turn off the machine. Disconnect the battery cable for 15 seconds. Reconnect the cable and turn on the machine. If the issue continues, contact your supervisor.	TRACTION_MOTOR	kit.scrubber.traction_motor
204	Brush Error	Inspect the brush for damage or debris. Adjust or replace as needed. If no issues are found, press the Start/Pause button to resume. If the issue continues, contact your supervisor.	BRUSH_ERROR	kit.scrubber.brush_error
205	Vacuum Error	Inspect the vacuum and hose for damage or debris. If the hose is clear, press the Start/Pause button to resume. If the hose is broken, contact your supervisor.	VACUUM_ERROR	kit.scrubber.vacuum_error
206	Squeegee Error	Inspect the squeegee for damage or debris. Adjust or replace as needed. If no issues are found, press the Start/Pause button to resume. If the issue continues, contact your supervisor.	SQUEEGEE_ERROR	kit.scrubber.squeegee_error
207	Scrub Deck Error	Turn off and inspect the machine. If no issues are found, press the Start/Pause button to resume. If the issue continues, contact your supervisor.	BRUSH_DECK_ERROR	kit.scrubber.brush_deck_error
208	No Brush	Make sure brushes or pads are properly installed. If no issues are found, press the Start/Pause button to resume. If the issue continues, contact your supervisor.	NO_BRUSH_ERROR	kit.scrubber.no_brush_error
209	Operator Presence Sensor Triggered	Make sure the seat is empty. To resume, press the Start/Pause button.	OPERATOR_PRESENCE_TRIGGERED	kit.scrubber.sensors.operator_presence
211	Throttle Error	Inspect the throttle. If no issues are found, press the Start/Pause button to resume. If the issue continues, contact your supervisor.	THROTTLE_ERROR	kit.scrubber.throttle_error
212	Brake Pedal Error	Inspect the brake pedal. If no issues are found, press the Start/Pause button to resume. If the issue continues, contact your supervisor.	BRAKE_ERROR	kit.scrubber.brake_error
215	Sensor Check in Progress	Drive the machine approximately 10-15 feet (3-5m) along the path. To resume, press the Start/Pause button. If issue persists, contact your supervisor.	CLIFF_DETECTOR_NOT_CONVERGED	kit.scrubber.VCU.cliff_detector_not_converged
216	Safety Stop	Make sure the path is clear. Drive past any obstacles. To resume, press the Start/Pause button.	FW_SAFETY_STOP	kit.scrubber.VCU.firmware_safety_stop
217	Footprint Violation	Make sure the path is clear. Drive past any obstacles. To resume, press the Start/Pause button.	FW_FOOTPRINT_VIOLATION	kit.scrubber.VCU.footprint_violation

218	Steering Error	Turn off the machine. Wait 15 seconds. Turn on the machine. If the issue continues, contact your supervisor.	STEERING_MOTOR_ERROR	kit.scrubber.VCU.steering_motor_error
219	Path is Blocked	Make sure the path is clear. Drive past any obstacles. To resume, press the Start/Pause button.	NONFATAL_FIRMWARE_FAULT	kit.scrubber.VCU.firmware_fault.nonfatal
220	Pedal Pressed	Make sure the pedal is clear. To resume, press the Start/Pause button.	PEDAL_PRESSED	kit.scrubber.pedal_pressed
223	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	FIRMWARE_PLANAR_LIDAR_TIMEOUT	kit.scrubber.VCU.planar_lidar_timeout
224	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	FIRMWARE_SLANTED_LIDAR_TIMEOUT	kit.scrubber.VCU.slanted_lidar_timeout
225	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	FIRMWARE_BOTH_LIDARS_TIMEOUT	kit.scrubber.VCU.both_lidars_timeout
226	Left Sensor Not Responding	Clean the left sensors with a clean microfiber cloth. Inspect for damage. Restart the machine.	FIRMWARE_LEFT_IFM_TIMEOUT	kit.scrubber.SideSafetyData.LeftIfmTimeOut
227	Right Sensor Not Responding	Clean the right sensors with a clean microfiber cloth. Inspect for damage. Restart the machine.	FIRMWARE_RIGHT_IFM_TIMEOUT	kit.scrubber.SideSafetyData.RightIfmTimeOut
228	Left Sensor Not Responding	Clean the left sensors with a clean microfiber cloth. Inspect for damage. Restart the machine.	FIRMWARE_LEFT_INVALID_FLOOR_HEIGHT	kit.scrubber.SideSafetyData.LeftInvalidHeight
229	Right Sensor Not Responding	Clean the right sensors with a clean microfiber cloth. Inspect for damage. Restart the machine.	FIRMWARE_RIGHT_INVALID_FLOOR_HEIGHT	kit.scrubber.SideSafetyData.RightInvalidHeight
230	Left Side Obstacle Detected	Inspect the machine and the surrounding area. Drive past any obstacles. If clear, press the Start/Pause button to resume.	FIRMWARE_LEFT_IFM_OBSTACLE_TOO_CLOSE	kit.scrubber.SideSafetyData.LeftObstacleTooClose
231	Right Side Obstacle Detected	Inspect the machine and the surrounding area. Drive past any obstacles. If clear, press the Start/Pause button to resume.	FIRMWARE_RIGHT_IFM_OBSTACLE_TOO_CLOSE	kit.scrubber.SideSafetyData.RightObstacleTooClose
232	Potential Hazard Detected	Inspect the machine. Make sure the path of the machine is clear or drive past any obstacles. If the path is clear, press the Start/Pause button to resume.	FIRMWARE_PLANAR_OBSTACLE_TOO_CLOSE	kit.scrubber.VCU.planar_obstacle_too_close
233	Cliff Detected	Make sure the machine is not operating near stairs or escalators. To resume, press the Start/Pause button.	FIRMWARE_CLIFF_TOO_CLOSE	kit.scrubber.VCU.cliff_too_close
234	Machine Error	Turn off and inspect machine. If no issues are found, press the Start/Pause button to resume. If the issue continues, contact your supervisor.	PLANAR_MARKER_NOT_FOUND	kit.scrubber.VCU.planar_marker_not_found
235	Machine Error	Turn off and inspect machine. If no issues are found, press the Start/Pause button to resume. If the issue continues, contact your supervisor.	SLANTED_MARKER_NOT_FOUND	kit.scrubber.VCU.slanted_marker_not_found
236	Machine Error	Turn off and inspect machine. If no issues are found, press the Start/Pause button to resume. If the issue continues, contact your supervisor.	SOAP_VALVE_ERROR	kit.scrubber.soap_valve_error
237	Machine Error	Turn off and inspect machine. If no issues are found, press the Start/Pause button to resume. If the issue continues, contact your supervisor.	WATER_VALVE_ERROR	kit.scrubber.water_valve_error
250	Right Side Footprint Violation	Make sure the path is clear. Drive past any obstacles. To resume, press the Start/Pause button.	FW_FOOTPRINT_VIOLATION_RIGHT_SIDE_SAFETY	kit.scrubber.VCU.SideSafetyData.right_footprint_violation
251	Left Side Footprint Violation	Make sure the path is clear. Drive past any obstacles. To resume, press the Start/Pause button.	FW_FOOTPRINT_VIOLATION_LEFT_SIDE_SAFETY	kit.scrubber.VCU.SideSafetyData.left_footprint_violation
255	Machine is Off Path	Follow the arrow and drive the machine to the highlighted path. Make sure the path is clear. To resume, press the Start/Pause button.	OFF_PATH	kit.scrubber.off_path
257	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	SENSOR_ERROR	kit.scrubber.sensor_error
258	Path is Blocked	Make sure the path is clear. Drive past any obstacles. To resume, press the Start/Pause button.	MACHINE_ERROR	kit.scrubber.machine_error
300	Machine is Off Path	Follow the arrow and drive the machine to the highlighted path. Make sure the path is clear. To resume, press the Start/Pause button.	LOCAL_DWA_PATH_TOO_FAR	brainos.navigation.planner.local.dwa_path_too_far

301	Machine is Off Path	Follow the arrow and drive the machine to the highlighted path. Make sure the path is clear. To resume, press the Start/Pause button.	LOCAL_DWA_PATH_IS_EMPTY	brainos.navigation.planner.local.dwa_path_is_empty
302	Path is Blocked	Make sure the path is clear. Drive past any obstacles. To resume, press the Start/Pause button.	LOCAL_DWA_NO_VALID_MOVE	brainos.navigation.planner.local.dwa_no_valid_move
303	Path is Blocked	Make sure the path is clear. Drive past any obstacles. To resume, press the Start/Pause button.	LOCAL_DWA_ALL_PATHS_WILL_STUCK	brainos.navigation.planner.local.dwa_all_paths_will_stuck
304	Path is Blocked	Make sure the path is clear. Drive past any obstacles. To resume, press the Start/Pause button.	LOCAL_DWA_START_POSE_COLLIDING	brainos.navigation.planner.local.dwa_start_pose_colliding
305	Path is Blocked	Make sure the path is clear. Drive past any obstacles. To resume, press the Start/Pause button.	LOCAL_DWA_PATH_TOO_CLOSE	brainos.navigation.planner.local.dwa_path_too_close
306	Path is Blocked	Make sure the path is clear. Drive past any obstacles. To resume, press the Start/Pause button.	LOCAL_DWA_TOO_DANGEROUS	brainos.navigation.planner.local.dwa_too_dangerous
307	Path is Blocked	Make sure the path is clear. Drive past any obstacles. To resume, press the Start/Pause button.	LOCAL_DWA_TOUCHING_OBSTACLE	brainos.navigation.planner.local.dwa_touching_obstacle
308	Path is Blocked	Make sure the path is clear. Drive past any obstacles. To resume, press the Start/Pause button.	LOCAL_DWA_DECISION_LOOP	brainos.navigation.planner.local.dwa_decision_loop
309	Path is Blocked	Make sure the path is clear. Drive past any obstacles. To resume, press the Start/Pause button.	LOCAL_DWA_PATH_IS_BEHIND	brainos.navigation.planner.local.dwa_path_is_behind
40004	Gyro Error	Turn off and inspect the machine. Restart the machine. If the issue continues, contact your supervisor.	GYRO_MISMATCH	kit.scrubber.sensors.gyro.mismatch
40006	Steering Error	Turn off the machine. Wait 15 seconds. Turn on the machine. If the issue continues, contact your supervisor.	STEERING_ENCODER_ERROR	kit.scrubber.VCU.steering_encoder_error
40008	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	BROKEN_TRACTION_ENCODER_ERROR	kit.scrubber.VCU.broken_traction_encoder_error
40009	Vehicle Controller Interruption	Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume. If the issue continues, restart the machine.	VCU_RESET	kit.scrubber.VCU.reset
500001	Potential Hazard Detected	Inspect the area for ramps, escalators, or potential drops. Drive the machine further along the path. To resume, press the Start/Pause button.	ESCALATOR_DETECTED	brainos.navigation.semantic_layer.escalator_detected
508	Path is Blocked	Restart the machine. If the issue continues, contact your supervisor.	FULLSTACK_TIMEOUT	brainos.fullstack_timeout
510	Path Following Error	Restart the machine. If the issue continues, contact your supervisor.	MANUAL_FOLLOWING_RESULT_INVALID	brainos.navigation.motion.manual_following_result_invalid
511	Path Following Error	Restart the machine. If the issue continues, contact your supervisor.	MOTION_POSE_INVALID	brainos.navigation.motion.motion_pose_invalid
512	Path Following Error	Restart the machine. If the issue continues, contact your supervisor.	MOTION_CONTROL_INVALID	brainos.navigation.motion.motion_control_invalid
513	Path Following Error	Restart the machine. If the issue continues, contact your supervisor.	PERCEPTS_INVALID	brainos.navigation.percepts_invalid
514	Path Following Error	Restart the machine. If the issue continues, contact your supervisor.	PERCEPTION_POSE_INVALID	brainos.navigation.perception_pose_invalid
6000	Lower Sensor Dirty	Inspect and clean the bottom sensor. Reboot the machine. If the issue continues, contact your supervisor.	FIRMWARE_PLANAR_LIDAR_DIRTY	kit.scrubber.VCU.planar_lidar_dirty
6000-6	Lower Sensor Dirty	Inspect and clean the bottom sensor. Reboot the machine. If the issue continues, contact your supervisor.	PLANAR_LIDAR_DIRTY	brainos.perception.planar_lidar.dirty
6001	Upper Sensor Dirty	Inspect and clean the upper sensor. Reboot the machine. If the issue continues, contact your supervisor.	FIRMWARE_SLANTED_LIDAR_DIRTY	kit.scrubber.VCU.slanted_lidar_dirty
6001-6	Upper Sensor Dirty	Inspect and clean the upper sensor. Reboot the machine. If the issue continues, contact your supervisor.	SLANTED_LIDAR_DIRTY	brainos.perception.slanted_lidar.dirty
6003-6	Front Camera Dirty	Inspect and clean the sensors. Reboot the machine. If the issue continues, contact your supervisor.	FRONT_DEPTH_CAMERA_DIRTY	brainos.perception.front_depth_camera.dirty
6004-6	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	RIGHT_DEPTH_CAMERA_DIRTY	brainos.perception.right_depth_camera.dirty
6005-6	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	LEFT_DEPTH_CAMERA_DIRTY	brainos.perception.left_depth_camera.dirty

60461	Calibration Error	Drive the machine back to the charging station. Turn off the machine. Notify your supervisor of this issue and include the error code number. This machine will need to be recalibrated.	FIRMWARE_ESTOP_SAFETY_ZONES_STEERING_OF FSET	kit.scrubber.VCU.firmware_estop. safety_zones_steering_offset
8100-1	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	PLANAR_LIDAR_DISCONNECTED	brainos.perception.planar_lidar.disconnected
8100-2	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	PLANAR_LIDAR_DELAY	brainos.perception.planar_lidar.delay
8100-3	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	PLANAR_LIDAR_NEGATIVE_DELAY	brainos.perception.planar_lidar.negative_delay
8100-4	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	PLANAR_LIDAR_RATE	brainos.perception.planar_lidar.rate
8100-5	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	PLANAR_LIDAR_BAD_TIMESTAMP_DIRECTION	brainos.perception.planar_lidar. bad_timestamp_direction
8100-7	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	PLANAR_LIDAR_MONITOR_EXCEPTION	brainos.perception.planar_lidar.monitor_exception
8200-1	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	SLANTED_LIDAR_DISCONNECTED	brainos.perception.slanted_lidar.disconnected
8200-2	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	SLANTED_LIDAR_DELAY	brainos.perception.slanted_lidar.delay
8200-3	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	SLANTED_LIDAR_NEGATIVE_DELAY	brainos.perception.slanted_lidar.negative_delay
8200-4	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	SLANTED_LIDAR_RATE	brainos.perception.slanted_lidar.rate
8200-5	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	SLANTED_LIDAR_BAD_TIMESTAMP_DIRECTION	brainos.perception.slanted_lidar. bad_timestamp_direction
8200-7	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	SLANTED_LIDAR_MONITOR_EXCEPTION	brainos.perception.slanted_lidar.monitor_exception
8300-1	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	FRONT_DEPTH_CAMERA_DISCONNECTED	brainos.perception.front_depth_camera.disconnected
8300-2	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	FRONT_DEPTH_CAMERA_DELAY	brainos.perception.front_depth_camera.delay
8300-3	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	FRONT_DEPTH_CAMERA_NEGATIVE_DELAY	brainos.perception.front_depth_camera. negative_delay
8300-4	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	FRONT_DEPTH_CAMERA_RATE	brainos.perception.front_depth_camera.rate
8300-5	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	FRONT_DEPTH_CAMERA_BAD_TIMESTAMP_DIRECTION	brainos.perception.front_depth_camera. bad_timestamp_direction
8300-7	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	FRONT_DEPTH_CAMERA_MONITOR_EXCEPTION	brainos.perception.front_depth_camera. monitor_exception
8400-1	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	LEFT_DEPTH_CAMERA_DISCONNECTED	brainos.perception.left_depth_camera.disconnected

8400-2	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	LEFT_DEPTH_CAMERA_DELAY	brainos.perception.left_depth_camera.delay
8400-3	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	LEFT_DEPTH_CAMERA_NEGATIVE_DELAY	brainos.perception.left_depth_camera.negative_delay
8400-4	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	LEFT_DEPTH_CAMERA_RATE	brainos.perception.left_depth_camera.rate
8400-5	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	LEFT_DEPTH_CAMERA_BAD_TIMESTAMP_DIRECTION	brainos.perception.left_depth_camera.bad_timestamp_direction
8400-7	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	LEFT_DEPTH_CAMERA_MONITOR_EXCEPTION	brainos.perception.left_depth_camera.monitor_exception
8500-1	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	RIGHT_DEPTH_CAMERA_DISCONNECTED	brainos.perception.right_depth_camera.disconnected
8500-2	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	RIGHT_DEPTH_CAMERA_DELAY	brainos.perception.right_depth_camera.delay
8500-3	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	RIGHT_DEPTH_CAMERA_NEGATIVE_DELAY	brainos.perception.right_depth_camera.negative_delay
8500-4	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	RIGHT_DEPTH_CAMERA_RATE	brainos.perception.right_depth_camera.rate
8500-5	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	RIGHT_DEPTH_CAMERA_BAD_TIMESTAMP_DIRECTION	brainos.perception.right_depth_camera.bad_timestamp_direction
8500-7	Sensor Error	Clean all the sensors with a clean microfiber cloth. Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume.	RIGHT_DEPTH_CAMERA_MONITOR_EXCEPTION	brainos.perception.right_depth_camera.monitor_exception
900	Overhead Hazard Detected	Inspect tower for damage or obstructions. To resume, press the Start/Pause button.	TOWER_LIDAR_CURTAIN_TRIGGERED	kit.scrubber.VCU.tower_curtain.triggered
90003	Vehicle Controller Interruption	Inspect for damage or obstructions. If no issues are found, press the Start/Pause button to resume. If the issue continues, restart the machine.	CONTROLLER_BAD_SAFETY_PARAMS	kit.scrubber.controller.bad_safety_params
9001	Impact Detected	Inspect the machine and the surrounding area. Drive past any obstacles. If clear, press the Start/Pause button to resume.	IMPACT_DETECTED	kit.scrubber.impact_detected
9010	Left Side Obstacle Detected	Inspect the machine and the surrounding area. Drive past any obstacles. If clear, press the Start/Pause button to resume.	LEFT_BACKFACING_SAFETY_TRIGGERED	left_ifm_backfacing_triggered
9011	Right Side Obstacle Detected	Inspect the machine and the surrounding area. Drive past any obstacles. If clear, press the Start/Pause button to resume.	RIGHT_BACKFACING_SAFETY_TRIGGERED	right_ifm_backfacing_triggered
N/A	Potential Hazard Detected	Inspect the machine. Make sure the path of the machine is clear or drive past any obstacles. If the path is clear, press the Start/Pause button to resume.	N/A	potential_hazard

Error Code	UI Title	UI Instructions	Error Name	Error ID
1	Unknown Error	Restart the machine. If the issue continues, contact your supervisor.	RECOVERABLE_FROM_HOME_ERROR	kit.scrubber.recoverable_from_home
202	Battery Low	Drive the machine to the charging station. Turn off the machine. Charge the batteries.	BATTERY_VERY_LOW	kit.scrubber.battery_very_low
252	Error	Restart the machine. If the issue continues, contact your supervisor.	ROS_COMMUNICATION_ERROR	kit.scrubber.ros.communication_error
401	Unknown Error	Restart the machine. If the issue continues, contact your supervisor.	LOWSHEEN_LOOP_EXCEPTION	homing_timeout_error_from_lowsheen
501	Gyro Error	Turn off the machine. Disconnect the battery cable for 15 seconds. Reconnect the cable and turn on the machine. If the issue continues, contact your supervisor.	CALIBRATION_GYRO_STUCK	kit.scrubber.sensors.gyro.calibration.stuck
502	Home Marker Scan Error	Return to the Home Marker. Scan the Home Marker again. Do not move the machine until the scan is complete. If the issue continues, contact your supervisor.	CALIBRATION_NOISY_GYRO	kit.scrubber.sensors.gyro.calibration.noisy
503	Home Marker Scan Error	Return to the Home Marker. Scan the Home Marker again. Do not move the machine until the scan is complete.	CALIBRATION_MOVED_TOO_MUCH	kit.scrubber.sensors.gyro.calibration.moved_to_much
504	Gyro Error	Gyro error. Please restart the machine.	CALIBRATION_IMU_TIMEOUT	kit.scrubber.sensors.imu.calibration.timeout_error
509	Flash Firmware Error	Restart the machine. If the issue continues, contact your supervisor.	FLASH_FIRMWARE_FAULT	app.scrubber.activities.firmware_initializer.flash_failed
610	Firmware Error	Restart the machine. If the issue continues, contact your supervisor.	FATAL_FIRMWARE_FAULT	kit.scrubber.VCU.firmware_fault.fatal
701	App Communication Error	Restart the machine. If the issue continues, contact your supervisor.	N/A	error: app communication
8100	Lower Sensor Error	Restart the machine. If the issue continues, contact your supervisor.	PLANAR_LIDAR_UNCALIBRATED	brainos.perception.planar_lidar.uncalibrated
8200	Upper Sensor Error	Restart the machine. If the issue continues, contact your supervisor.	SLANTED_LIDAR_UNCALIBRATED	brainos.perception.slanted_lidar.uncalibrated
8300	Front Depth Sensor Error	Restart the machine. If the issue continues, contact your supervisor.	FRONT_DEPTH_CAMERA_UNCALIBRATED	brainos.perception.front_depth_camera.uncalibrated
8400	Left Depth Sensor Error	Restart the machine. If the issue continues, contact your supervisor.	LEFT_DEPTH_CAMERA_UNCALIBRATED	brainos.perception.left_depth_camera.uncalibrated
8500	Right Depth Sensor Error	Restart the machine. If the issue continues, contact your supervisor.	RIGHT_DEPTH_CAMERA_UNCALIBRATED	brainos.perception.right_depth_camera.uncalibrated
20000	Route Error	Retrain the route, starting and ending at the same Home Marker.	MAPPING_NOT_STARTED	brainos.mapping.not_started
20001	Route Error	Retrain the route, starting and ending at the same Home Marker.	DEPRECATED__ROUTE_CLOSURE_FAILED	brainos.mapping.route_closure_failed
20002	Route Error	Retrain the route to be at least two minutes long.	ROUTE_TOO_SHORT	brainos.mapping.route_too_short
20003	Gyro Error	Turn off the machine. Disconnect the battery cable for 15 seconds. Reconnect the cable and turn on the machine. If the issue continues, contact your supervisor.	MAPPING_IMU_ERROR	brainos.mapping.imu_error
20004	Route Error	Retrain the route. Do not drive backwards while training.	ROUTE_IS_BACKWARDS	brainos.mapping.route_is_backwards
20005	Sensor Error	Clean the lower sensor with a clean microfiber cloth. Inspect for damage or obstructions. If the issue continues, contact your supervisor.	MAPPING_LIDAR_DELAY	brainos.mapping.lidar_delay
20007	Route Failed to Save	Teach the route again, starting and ending at the same Home Marker.	ROUTE_FAILED	brainos.mapping.route_failed
20008	Route Error	Retrain the route, starting and ending at the same Home Marker.	ROUTE_ENDPOINTS_EMPTY	brainos.mapping.route_endpoints_empty
20009	Gyro Error	Turn off the machine. Disconnect the battery cable for 15 seconds. Reconnect the cable and turn on the machine. If the issue continues, contact your supervisor.	MAPPING_IMU_ZERO	brainos.mapping.imu_zero
20011	Route Error	Retrain the route, starting and ending at the same Home Marker.	MAPPING_UNKNOWN	brainos.mapping.unknown
20012	Sensor Error	Clean the lower sensor with a clean microfiber cloth. Inspect for damage or obstructions. If the issue continues, contact your supervisor.	MAPPING_LIDAR_PITCHED_DOWN	brainos.mapping.lidar_pitched_down

30001	Error	Failed to load route data. Please try again.	GET_ROUTE_ERROR	brainos.mapping.route_server.get_route_error
40007	Steering Calibration Adjustment Needed	Drive the machine back to the charging station. Turn off the machine. Notify your supervisor of this issue and include the error code number. This machine will need to be recalibrated.	STEERING_OUT_OF_RANGE	kit.scrubber.VCU.steering_out_of_range
40010	Vehicle Controller Error	Restart the machine. If the issue continues, contact your supervisor.	VCU_DISCONNECTED	kit.scrubber.VCU.disconnected
60000	Firmware E-Stop Error	Restart the machine. If the issue continues, contact your supervisor.	FIRMWARE_ESTOP	kit.scrubber.VCU.firmware_estop
60500	Lithium Battery System Fault	Restart the machine. If the issue continues, contact customer service.	FIRMWARE_ESTOP_BMS_NO_KEEP_ALIVE	kit.scrubber.VCU.firmware_estop.bms_no_keep_alive
60501	Lithium Battery System Fault	Restart the machine. If the issue continues, contact customer service.	FIRMWARE_ESTOP_BMS_NO_STATE_OF_CHARGE	kit.scrubber.VCU.firmware_estop.bms_no_state_of_charge
60502	Lithium Battery System Fault	Restart the machine. If the issue continues, contact customer service.	FIRMWARE_ESTOP_BMS_ERROR_FLAGS	kit.scrubber.VCU.firmware_estop.bms_error_flags
60503	Lithium Battery System Fault	Restart the machine. If the issue continues, contact customer service.	FIRMWARE_ESTOP_BMS_MISSING_ENTRIES	kit.scrubber.VCU.firmware_estop.bms_missing_entries
70002	Error	Failed to load route data. Please try again.	ROUTE_LOADING_ERROR	kit.scrubber.mapping.route.loading_error
70003	Route Failed to Save	Teach the route again, starting and ending at the same Home Marker.	ROUTE_SAVE_ERROR	kit.scrubber.mapping.route.saving_error
90001	Controller Error	Restart the machine. If the issue continues, contact your supervisor.	CONTROLLER_FATAL	kit.scrubber.controller.fatal
N/A		Restart the machine. If the issue continues, contact your supervisor.	N/A	
N/A	Autonomy Disabled Error	Restart the machine. If the issue continues, contact your supervisor.	N/A	error: autonomy disabled
N/A	Invalid App State Error	Restart the machine. If the issue continues, contact your supervisor.	N/A	error: invalid app state
N/A	UI Error	Restart the machine. If the issue continues, contact your supervisor.	N/A	error: ui error
N/A	Home Marker Scan Error	Return to the Home Marker. Scan the Home Marker again. Do not move the machine until the scan is complete. If the issue continues, contact your supervisor.	N/A	home marker scanning
N/A	Route Error	Retrain the route, starting and ending at the same Home Marker.	N/A	mapping endpoints mismatch
N/A	System Error	Restart the machine. If the issue continues, contact your supervisor.	N/A	system error

Error Code	UI Title	UI Instructions	Error Name	Error ID
500	Emergency Stop Button Pressed	Inspect the environment and the machine. Release the emergency stop button by rotating it clockwise.	ESTOP	brainos.hardware.estop
N/A	Emergency Stop Button Released	To resume the previous action, select OK.	N/A	estop: cleared

Error Code	UI Title	UI Instructions	Error Name	Error ID
0	Unknown Error	Turn off and inspect the machine. Restart the machine. If the issue continues, contact your supervisor.	UNKNOWN_ERROR	brainos.unknown_error
5036	Sensor Update Error	Restart the machine.	IFM_FIRMWARE_UPDATE_FAILURE	ifm_firmware_update_failure
101002	Sensor Update Error	Restart the machine.	DIAGNOSTICS_DEPTH_CAMERA_UPDATE_FAILURE	diagnostics.brainos.perception.depth_camera.update_failure
101003	Unknown Error	Turn off and inspect the machine. Restart the machine. If the issue continues, contact your supervisor.	DIAGNOSTICS_UNKNOWN_ERROR	diagnostics.unknown
101004	Center Sensor Not Responding	Clean the center sensor with a clean microfiber cloth. Inspect for damage. Restart the machine.	DIAGNOSTICS_HAL_FRONT_DEPTH_DISCONNECTED	diagnostics.hal.brainos.perception.front_depth_camera.disconnected
101005	Center Sensor Not Responding	Clean the center sensor with a clean microfiber cloth. Inspect for damage. Restart the machine.	DIAGNOSTICS_HAL_FRONT_IFM_NOT_AVAILABLE	diagnostics.hal.brainos.perception.front_depth_camera.not_available
101006	Center Sensor Not Responding	Clean the center sensor with a clean microfiber cloth. Inspect for damage. Restart the machine.	DIAGNOSTICS_HAL_FRONT_IFM_DAMAGED	diagnostics.hal.brainos.perception.front_depth_camera.damaged
101007	Left Sensor Not Responding	Clean the left sensors with a clean microfiber cloth. Inspect for damage. Restart the machine.	DIAGNOSTICS_HAL_LEFT_DEPTH_DISCONNECTED	diagnostics.hal.brainos.perception.left_depth_camera.disconnected
101008	Left Sensor Not Responding	Clean the left sensors with a clean microfiber cloth. Inspect for damage. Restart the machine.	DIAGNOSTICS_HAL_LEFT_IFM_NOT_AVAILABLE	diagnostics.hal.brainos.perception.left_depth_camera.not_available
101009	Left Sensor Not Responding	Clean the left sensors with a clean microfiber cloth. Inspect for damage. Restart the machine.	DIAGNOSTICS_HAL_LEFT_IFM_DAMAGED	diagnostics.hal.brainos.perception.left_depth_camera.damaged
101010	Right Sensor Not Responding	Clean the right sensors with a clean microfiber cloth. Inspect for damage. Restart the machine.	DIAGNOSTICS_HAL_RIGHT_DEPTH_DISCONNECTED	diagnostics.hal.brainos.perception.right_depth_camera.disconnected
101011	Right Sensor Not Responding	Clean the right sensors with a clean microfiber cloth. Inspect for damage. Restart the machine.	DIAGNOSTICS_HAL_RIGHT_IFM_NOT_AVAILABLE	diagnostics.hal.brainos.perception.right_depth_camera.not_available
101012	Right Sensor Not Responding	Clean the right sensors with a clean microfiber cloth. Inspect for damage. Restart the machine.	DIAGNOSTICS_HAL_RIGHT_IFM_DAMAGED	diagnostics.hal.brainos.perception.right_depth_camera.damaged
101013	Lower Sensor Not Responding	Clean the lower sensors with a clean microfiber cloth. Inspect for damage. Restart the machine.	DIAGNOSTICS_HAL_PLANAR_LIDAR_DISCONNECTED	diagnostics.hal.brainos.perception.planar_lidar.disconnected
101015	Lower Sensor Not Responding	Clean the lower sensors with a clean microfiber cloth. Inspect for damage. Restart the machine.	DIAGNOSTICS_HAL_PLANAR_LIDAR_DAMAGED	diagnostics.hal.brainos.perception.planar_lidar.damaged
101016	Upper Sensor Not Responding	Clean the upper sensors with a clean microfiber cloth. Inspect for damage. Restart the machine.	DIAGNOSTICS_HAL_SLANTED_LIDAR_DISCONNECTED	diagnostics.hal.brainos.perception.slanted_lidar.disconnected
101018	Upper Sensor Not Responding	Clean the upper sensors with a clean microfiber cloth. Inspect for damage. Restart the machine.	DIAGNOSTICS_HAL_SLANTED_LIDAR_DAMAGED	diagnostics.hal.brainos.perception.slanted_lidar.damaged
101019	Center Sensor Not Responding	Clean the center sensor with a clean microfiber cloth. Inspect for damage. Restart the machine.	DIAGNOSTICS_FRONT_IFM_ERROR	diagnostics.brainos.perception.front_depth_camera.error
101020	Left Sensor Not Responding	Clean the left sensors with a clean microfiber cloth. Inspect for damage. Restart the machine.	DIAGNOSTICS_LEFT_IFM_ERROR	diagnostics.brainos.perception.left_depth_camera.error
101021	Right Sensor Not Responding	Clean the right sensors with a clean microfiber cloth. Inspect for damage. Restart the machine.	DIAGNOSTICS_RIGHT_IFM_ERROR	diagnostics.brainos.perception.right_depth_camera.error
101022	Upper Sensor Not Responding	Clean the upper sensors with a clean microfiber cloth. Inspect for damage. Restart the machine.	DIAGNOSTICS_SLANTED_LIDAR_ERROR	diagnostics.brainos.perception.slanted_lidar.error
101023	Lower Sensor Not Responding	Clean the lower sensors with a clean microfiber cloth. Inspect for damage. Restart the machine.	DIAGNOSTICS_PLANAR_LIDAR_ERROR	diagnostics.brainos.perception.planar_lidar.error
101024	Machine Not Responding	Restart the machine.	DIAGNOSTICS_ROBOT_STATE_ERROR	diagnostics.robot_state.error
101025	Odometer Not Responding	Restart the machine.	DIAGNOSTICS_ODOM_ERROR	diagnostics.odom.error
101026	Sensor Not Responding	Restart the machine.	DIAGNOSTICS_MARKER_CAM_ERROR	diagnostics.marker_cam.error
N/A	Sensor Not Responding	Restart the machine.	N/A	right rgb unavailable
N/A	Transformer Not Responding	Restart the machine.	N/A	transformer unavailable
N/A	Uncalibrated Sensor	Sensors not calibrated. Go to Settings to calibrate or contact your supervisor.	N/A	uncalibrated

Code	Message	Title	Detailed Description	Possible Causes
0x12	EEPROM Error	EEPROM ERROR	EEPROM (Electrically Erasable Programmable Read-Only Memory) read error or parameter out of range	1. Controller parameter setting out of range 2. Controller problem (EEPROM fault)
0x1A	Battery Low (All Function Off)	Battery Low	Battery Voltage is very low (all function is disabled)	1. Battery voltage is less than 18V 2. Parameter"Battery Voltage" set to 1 but actual battery is 24V 3. Controller hardware fault
0x21	Battery Low (Traction Only)	Battery Low	Battery Voltage is low (only traction is enabled)	1. Battery voltage is less than set parameter value (Class 0 Volt) 2. Controller Hardware fault
0x23	MCU Over Temperature	MCU Overheated	Controller MCU (Micro Controller Unit) is over temperature	Controller is over temperature
0x26	Precharge Failure (Traction)	Precharge Failure	Internal Relay1 input voltage check failure	1. Wiring problem 2. Controller hardware fault
0x29	Traction Left Null Error	Traction Error	Traction left bridge zero current check failure	1. Controller firmware fault 2. Controller hardware fault
0x2D	Brush Null Error	Brush Error	Brush zero current check failure	1. Controller firmware fault 2. Controller hardware fault
0x2E	Vacuum Null Error	Vacuum Error	Vacuum zero current check failure	1. Controller firmware fault 2. Controller hardware fault
0x2F	Squeegee Null Error	Squeegee Error	Squeegee zero current check failure	1. Controller firmware fault 2. Controller hardware fault
0x31	Brush Adjustment Timeout	Brush Pressure Adjustment Error	Brush Pressure adjustment timeout (when brush auto adjust function is enabled)	Brush Pressure adjustment parameters setting are not reasonable
0x32	Solenoid Welded (Traction)	Solenoid Error	Controller internal Relay1 is welded	Controller hardware fault
0x33	Solenoid Didn't Close (Traction)	Solenoid Error	Controller internal Relay1 is not closed	Controller hardware fault
0x37	Throttle Fault	Throttle Error	Accelerator Fault	1. Accelerator PWR wire is broken (for potentiometer accelerator) 2. Accelerator Gnd wire is broken (for potentiometer accelerator) 3. Accelerator Signal wire is broken (for potentiometer accelerator) 4. Actual accelerator resistance is mismatched with set resistance value (for potentiometer accelerator) 5. Hall Accelerator output is more than 5V
0x3A	Brake Fault	Brake Error	Brake output (P1 Pin2) is over current	1. Brake output is over current 2. Controller hardware fault
0x3B	Alarm Fault	Alarm Error	Alarm output (P3 Pin17) is over current	1. Alarm output is over current 2. Controller hardware fault
0x3C	AUX1 Fault	Auxiliary Output Error	Aux1 (Auxiliary1) output (P3 Pin7) is over current	1. Aux1 output is over current 2. Controller hardware fault
0x3D	AUX2 Fault	Auxiliary Output Error	Aux2 (Auxiliary2) output (P2 Pin9) is over current	1. Aux2 output is over current 2. Controller hardware fault
0x3F	Brush Deck Null Error	Brush Deck Error	Brush Deck zero current check failure	1. Controller firmware fault 2. Controller hardware fault

0x42	Traction Stalled Motor	Traction Motor Error	Traction motor is stalled	1. Traction motor is stalled 2. Parameter "Traction I Limit" is set too low
0x44	Traction Reverse Short Circuit Protection	Traction Motor Error	Traction motor is short-circuit	Traction motor is short-circuit
0x4C	Traction Forward Short Circuit Protection	Traction Motor Error	Traction motor is short-circuit	Traction motor is short-circuit
0x4D	Brush Over Current Protection	Brush Motor Error	Brush motor is over current	Brush motor peak current is more than 150A
0x4E	Brush Short Circuit Protection	Brush Motor Error	Brush motor is short-circuit	Brush motor is short-circuit
0x59	Traction Left Drain Fault	Traction Motor Error	Traction left bridge drain fault	Controller hardware fault
0x5B	Traction Right Drain Fault	Traction Motor Error	Traction right bridge drain fault	Controller hardware fault
0x5C	Traction Reverse Over Current Protection	Traction Motor Error	Traction reverse output is over current	Traction motor peak current is more than 190A
0x5D	Traction Forward Over Current Protection	Traction Motor Error	Traction forward output is over current	Traction motor peak current is more than 190A
0x61	Brush Drain Fault	Brush Drain Fault	NA	NA
0x62	Supply Out Of Range	Supply Out Of Range	Controller 12V check failure	Controller hardware fault
0x64	Brush Deck Over Current Protection	Brush Deck Over Current Protection	Brush Deck output is over current	Brush Deck motor peak current is more than 9A
0x65	Vacuum Short Circuit	Vacuum Short Circuit	Vacuum output is short-circuit	Vacuum motor is short-circuit
0x66	Brush Deck Short Circuit Protection	Brush Deck Short Circuit Protection	Brush Deck output is short-circuit	Brush Deck motor is short-circuit
0x67	Squeegee Over Current Protection	Squeegee Over Current Protection	Squeegee output is over current	Squeegee motor peak current is more than 9A
0x68	Vacuum Over Current Protection	Vacuum Over Current Protection	Vacuum output is over current	Vacuum motor peak current is more than 60A
0x69	Squeegee Short Circuit Protection	Squeegee Short Circuit Protection	Squeegee output is short-circuit	Squeegee motor is short-circuit
0x6A	Valve Fault	Valve Fault	Valve output (P3 Pin2) is over current	1. Valve output is over current 2. Controller hardware fault
0x6C	Traction Right Null Error	Traction Right Null Error	Traction right bridge zero current check failure	1. Controller firmware fault 2. Controller hardware fault
0x71	Trial Timeout	Trial Timeout	Controller trial use is timeout (when trial use function is enabled)	Trial use hours is more than set value (Trial time limit)

0x72	Solenoid Welded (Others)	Solenoid Welded (Others)	Controller internal Relay2 is welded	Controller hardware fault
0x73	Solenoid Didn't Close (Others)	Solenoid Didn't Close (Others)	Controller internal Relay2 is not closed	Controller hardware fault
0x74	Squeegee Stalled Motor	Squeegee Motor Stalled	Squeegee motor is stalled	1. Squeegee motor is stalled 2. Parameter "Squeegee Current Limit" is set too low
0x75	Brush Deck Stalled Motor	Brush Deck Motor Stalled	Brush Deck motor is stalled	1. Brush Deck motor is stalled 2. Parameter "Bru-D Current Limit" is set too low
0x76	Precharge Failure (Others)	Precharge Failure (Others)	Internal Relay2 input voltage check failure	1. Wiring problem 2. Controller hardware fault
0x77	Brush Stalled Motor	Brush Motor Stalled	Brush motor is stalled	1. Brush motor is stalled 2. Parameter "Brush Current Limit" is set too low
0x78	Vacuum Stalled Motor	Vacuum Motor Stalled	Vacuum motor is stalled	1. Vacuum motor is stalled 2. Parameter "Vacuum Current Limit" is set too low
0x83	Mosfet Over Temperature	Mosfet Overheated	Controller Mosfets are over temperature	1. Output Current is too big 2. Controller heat dissipation is not so good (installation baseplate, etc.) 3. Controller hardware fault
0xA2	High Battery Protection	High Battery Protection	Battery voltage is high	1. Battery voltage is more than 45V 2. Parameter "Battery Voltage" set to 0 but actual battery is 36V 3. Controller hardware fault

Error Title (Back-End)	Current Message	Proposed Message
REGISTER_FAILURE	We're sorry, but we were unable to register for alerts.	We're sorry, but we could not register your mobile device to receive alerts. Please try again.
REGISTER_SUCCESS	You've successfully been registered for alerts for this session.	Success! Your mobile device will receive alerts for this session.
EMERGENCY_STOP_ENGAGED	Emergency Stop Engaged!	Emergency Stop Engaged
EMERGENCY_STOP_DETAIL	<Emergency Stop Detail>	<Emergency Stop Photo>
ROBOT_REQUIRES_ASSISTANCE	Robot Requires Assistance.	The machine requires assistance.
ASSISTANCE_DETAIL	<Assistance Detail>	<Assistance Photo>
ROUTE_COMPLETE	Route Complete!	Route complete!
ROUTE_SUMMARY	<Route Summary>	<Route Summary Photo>