10.4 Trilogy Error Codes and Corrective Actions

NOTE

Use the corrective action(s) listed in Troubleshooting Table before using corrective action(s) listed in the error code charts below.

10.4.1 Ventilator Inoperative Alarm Error Codes

Error Code	Probable Cause	Corrective Action
E-009	Motor Capacitor not installed Motor Connector not soldered properly Motor Rotor Locked or other mechanical problem	Check the Capacitor Check Motor connector Replace Motor Replace System/CPU PCA
E-014	Board revision resistors are not installed Software is running on wrong revision of the board	Load Correct Software Replace System/CPU PCA
E-021	Problem with serial communication between DSP and Host	Replace System/CPU PCA
E-037	Host CPU is constantly rebooting	Reinstall Software Replace System/CPU PCA
E-071	Parameter Settings corrupted	Replace System/CPU PCA
E-073	Parameter Settings corrupted	Replace System/CPU PCA
E-076	Defective EEPROM	Replace System/CPU PCA
E-077	Defective EEPROM Program Execution Error	Replace System/CPU PCA
E-090	Software does not support newer/older revision of Hardware Board revision resistors on System/CPU PCA are setup incorrect	Reinstall software Replace the System/CPU PCA
E-101	Program Execution Error	Contact Respironics Product Support
E-103	Control Flow Sensor out of electrical spec	Check Tubing Check Manifold Replace Sensor PCA
E-125	3 reboots occurred within 24 hours	Examine error logs for reasons for reboots Proceed accordingly
E-141	Motor capacitor(off board) not installed motor connector not soldered correctly shorts in hall sensor circuitry due to the soldering issue (capacitor and resistor array) DC/DC	Check bulk capacitor Check motor connector Replace motor Replace system/CPU Subassembly

Error Code	Probable Cause	Corrective Action
	MOSFET failed short (Q3 and Q4) DC/DC MOSFET driver (U10) failed TVS failure (CR28) motor phase MOSFET (Q6 to Q11) failure motor phase MOSFET drivers failure (U13, U15, U16)hall sensor circuitry failure (U25) motor rotor locked or other mechanical problem associated error with this one should give us more information.	Replace power management board Replace Bulk Capacitor
E-145	Both control and Monitoring Pressure sensors failed. ADC failed	Check tubing Check manifold Replace Sensor PCA
E-146	Both control and Monitoring Pressure sensors failed. ADC failed	Check tubing Check manifold Replace Sensor PCA
E-158	A serious alarm has occurred before six breaths have been taken after blower is turned on. The lack of therapy data causes back up therapy not to be initiated and the ventilator to become completely inoperative. The alarms that would initiate this possible scenario are: both pressure sensors failing, both pressure and flow sensors failing, a failure of non-volatile memory, or a high pressure patient alarm	None - recorded for informational purposes to indicate that backup therapy could not be provided for the Ventilator Inoperative condition currently active
E-160	Obstructed intake Obstructed flow path Obstructed or disconnected pressure tubing Faulty Blower	Check Inlet filter / Air Path for obstruction Check circuit Check internal tubing Replace Blower
E-163	Control Flow Sensor out of electrical specification	Check tubing Check manifold Replace Sensor PCA
E-172	Unit is exceeding 60cm of delivered pressure High pressure sensor reading Large amount of drift Pinched/blocked tubing	Check the tubing for pinched or blocked tubes Check the circuit for leaks Check the Active Exhalation Valve functionality Check the tubing for leaks, kinks, or blockages

Error Code	Probable Cause	Corrective Action
		Replace the Sensor board Replace the System/CPU PCA
E-253	Communication failure The Host CPU is unable to communicate with the DSP	Replace the System/CPU PCA
E-323	When the device encounters errors while it has started to apply the Rx Setting from the SD Card, the device stops the Rx update and tries to restore back the old setting on the device. During the restoration of these old settings of the device, if there is an error this error code is generated	Replace System/CPU Subassembly
E-357	Control Flow Sensor out of electrical spec	Check tubing Check manifold Replace Sensor Board PCA
E-361	Assigned product ID unknown and invalid	Recalibrate Unit Replace System/CPU Subassembly

10.4.2 Ventilator Service Required Alarm Error Codes

Error Code	Probable Cause	Corrective Action
E-017	Big Motor Capacitor not installed or wrong value or at the end of life cycle	Install or Replace Capacitor Replace System/CPU PCA
E-023	Internal watchdog on DSP failed	Replace System/CPU PCA
E-031	Problem with +3.3V_DSP U23 failure DSP failure	Replace System/CPU PCA
E-032	Faulty Sensor Board Cable Faulty Sensor Board Circuitry	Check Sensor Board Cable Replace Sensor Board PCA Replace System/CPU PCA
E-036	Cpld not programmed Pin 15 of U30 shorted Cpld failed	Replace System/CPU PCA
E-064	Unit not calibrated Calibration Table corrupted	Recalibrate the device Replace the System/CPU PCA
E-065	Unit not calibrated Calibration Table corrupted	Recalibrate the device Replace the System/CPU PCA
E-066	Unit not calibrated Calibration Table corrupted	Recalibrate the device Replace the System/CPU PCA
E-067	The sensor has drifted.	Replace Sensor Board PCA
E-068	Error indicates a short in the Li Ion battery discharge path on the power management	Replace power management board

Error Code	Probable Cause	Corrective Action
	board. Normally, the host software recognizes a useable detachable and internal battery and attempts to disable the discharge path of the Internal battery. Since the internal battery discharge path has failed, shorted, current will be shared by the internal and detachable battery.	Replace system/CPU subassembly Replace the internal battery
E-069	The sensor has drifted.	Replace Sensor Board PCA
E-070	The sensor has drifted.	Replace Sensor Board PCA
E-080	The sensor has drifted.	Replace Sensor Board PCA
E-094	Barometric pressure sensor is reading maximum or minimum counts for an extended period of time	Replace the Sensor Board PCA
E-100	Software error Bad table written by Production or Field Service Calibration	Recalibrate the device Replace the System/CPU PCA
E-106	Speaker 1 failed or not installed	Install speaker 1 Check connection between front panel and system board Replace the Front Panel PCA Replace the System/CPU PCA
E-107	Speaker 2 failed or not installed	Install speaker 2 Check connection between front panel and system board Replace the Front Panel PCA Replace the System/CPU PCA
E-119	Battery charging is detected when there is no AC present	Replace Power Management PCA
E-130	The sensor has drifted.	Check tubing Check manifold Replace the Sensor Board PCA
E-131	Control pressure sensor is reading maximum or minimum counts for an extended period of time	Check tubing Check manifold Check the Sensor Board Cable Replace the Sensor PCA Replace the System/CPU PCA
E-132	Monitor pressure sensor is reading maximum or minimum counts for an extended period of time	Check tubing Check manifold Check the Sensor Board Cable Replace the Sensor PCA Replace the System/CPU PCA

Error Code	Probable Cause	Corrective Action
E-133	Proximal pressure sensor is reading maximum or minimum counts for an extended period of time	Check tubing Check manifold Check the Sensor Board Cable Replace the Sensor PCA Replace the System/CPU PCA
E-134	Control flow sensor is reading maximum or minimum counts for an extended period of time	Check tubing Check manifold Check the Sensor Board Cable Replace the Sensor PCA Replace the System/CPU PCA
E-135	Monitor flow sensor is reading maximum or minimum counts for an extended period of time	Check tubing Check manifold Check the Sensor Board Cable Replace the Sensor PCA Replace the System/CPU PCA
E-136	Air stream Temperature 1 sensor is reading maximum or minimum counts for an extended period of time	Check Airstream Temp Sensor connections Replace Sensor Replace Sensor Board Replace System/CPU PCA
E-137	dP Pressure Temperature sensor is reading maximum counts for an extended period of time	Check dP Pressure Temp Sensor Replace Sensor Replace Sensor Board PCA Replace System/CPU PCA
E-138	Barometric Pressure sensor is reading a count outside of its valid range	Replace the Sensor PCA Replace the System/CPU PCA
E-139	Software Error	Recalibrate the device Replace the System/CPU PCA
E-143	Control or Monitoring Pressure sensor has drifted too far away from the other	Turn off Blower and allow 30 seconds for drift processing to complete Replace the Sensor PCA
E-147	The sensor has drifted.	Replace Sensor Board
E-149	Before a drift is computed for this sensor, its auto-null valve is opened to atmosphere. A test is performed to ensure that the valve has fully opened in accordance with the time provided by the technical specification. This is performed by ensuring that the control pressure has dropped significantly enough after the valve has opened and a de-bounce time has expired. If the pressure	Replace Sensor Board Replace System/CPU PCA

Error Code	Probable Cause	Corrective Action
	reading before the valve was opened was not high enough (due to ventilator therapy settings) to provide a valid criteria regarding a significant drop in pressure, then the check is not performed. When this condition is in effect for a consecutive number of attempted drifts, the error is reported	
E-159	Problem with power management board or batteries - unit would not go into Sleep when AC Power removed	Replace Power Management PCA Replace System/CPU PCA
E-161	Internal Li-Ion has a TDA due to Discharge Overcurrent or Discharge Short Circuit PMB fault System Board fault Internal Li-Ion fault	Replace Power Management PCA Replace Internal Li-Ion battery Replace System/CPU PCA
E-164	Monitor Flow Sensor out of electrical spec	Check tubing Check manifold Replace Sensor Board
E-174	Can't communicate with Charger Chip PMB fault Internal Li-Ion fault Detachable Li-Ion fault	Replace Power Management PCA Replace Internal Li-Ion battery Replace Detachable Li-Ion battery Replace System/CPU PCA
E-175	Can't communicate with Internal Li-Ion battery after five tries and charger is not trying to wake-up charge the battery Could take up to 210 seconds for alarm to be reported because the Charger is trying to wake-up charge the Internal Li-Ion PMB fault Internal Li-Ion fault	Replace Power Management PCA Replace Internal Li-Ion battery
E-177	Internal Li-Ion battery not Authentic Fake battery PMB fault Internal Li-Ion fault	Replace Internal Li-Ion battery Replace Power Management PCA

Error Code	Probable Cause	Corrective Action
E-189	Detachable or Internal Li-Ion usable and V_battLi < 9 volts for greater than 10 sec indicates Li-Ion battery unable to power the System PMB fault	Replace Power Management PCA
E-191	AFE chip does not receive the appropriate frequency on the WDI pin from the Gas Gauge chip. Both of these chips are i the Li-Ion battery pack. Internal Li-Ion fault	Replace Internal Li-Ion battery Replace Power Management PCA
E-193	Internal Li-Ion battery permanent failure	Replace Internal Li-Ion battery
E-195	Internal Li-Ion Battery State of Health < 50%. Full charge capacity (FCC) is less than 51% of the Design Capacity Internal Li-Ion FCC error Internal Li-Ion fault Internal Li-Ion end of life	Cycle the Internal Li-Ion (discharge battery so that capacity change is > 50%, then rest for > 2 hours. Charge to 100%, then rest for > 2 hours) Replace Internal Li-Ion battery
E-197	Internal Li-Ion not present as indicated by the Charger Chip status PMB fault Internal Li-Ion battery pack fault	Replace Power Management PCA Replace Internal Li-Ion battery
E-199	Detachable Battery harness failure Power Management Board Failure Circuitry failure	Replace Detachable Battery harness Replace the Power Management PCA Replace the System/CPU PCA
E-200	Circuitry failure	Replace the System/CPU PCA
E-201	Power Management Board Failure Circuitry failure	Replace the Power Management PCA Replace the System/CPU PCA
E-202	Circuitry failure	Replace the System/CPU PCA Replace Interface PCA
E-203	Circuitry failure	Replace System/CPU PCA
E-204	U3 failure CPLD failure	Replace System/CPU PCA
E-205	Error indicates a shorted Q25, Q26 in the battery discharge path on the Power Management PCA. If either FET is shorted or AC is connected, then AC voltage will be connected to the Pb	Replace the Power Management PCA

Error Code	Probable Cause	Corrective Action
	Acid battery terminals if one is connected and enabled. This may bring down the AC supply due to excessive current because the AC supply is trying to charge the PB Acid. If the AC supply folds back the unit should run properly	
E-207	Q11 failure on Power Management PCA	Replace Power Management Board Replace System/CPU Subassembly
E-208	Internal Li-Ion Cycle Count exceeded > 475 cycles Internal Li-Ion end of life	Replace internal Li-Ion battery
E-265	Checks if Li-Ion battery is present by attempting to communicate when the Charger CHip safety signal indicates the battery is not present. Safety signal from the Li-Ion may be disconnected or Charger CHip may have a fault so it is not detecting a Li-Ion battery	Replace the internal battery Replace the power management PCA
E-267	FCC > 150% of the Li-Ion design capacity Corrupted Gas Gauge	Cycle the Internal Li-Ion (discharge battery so that capacity change is > 50%, then rest for > 2 hours. Charge to 100%, then rest for > 2 hours) Replace internal Li-Ion battery
E-269	Error indicates an open VBULK FET. This MOSFET connects the output of the AC/DC supply to the input of the boost converter. Unit will not run on AC power. Will use battery power if available.	Replace power management board. Replace system/CPU subassembly Replace the internal battery
E-270	Error indicates an open Q11, which controls the discharge of the Li-Ion batteries post VbattLi. When the Lithium Ion power is selected, this FET is turned on. If Q11 fails open,	Replace power management PCA

Error Code	Probable Cause	Corrective Action
	there will be no Li-Ion battery power to the system	
E-271	Error indicates an open Q13, Q14 in the Lead Acid battery discharge path on the Power Management PCA. When Pb Acid is selected by the hardware or software, VBATTSENSE would be low. If AC is disconnected, there would be no battery backup from the Li-Ion battery	Replace power management PCA
E-272	Charger chip failure FET failure	Replace power management PCA
E-273	Unit not calibrated Calibration table corrupted	Recalibrate the device Replace the System/CPU PCA
E-274	Unit not calibrated Calibration table corrupted	Recalibrate the device Replace the System/CPU PCA
E-290	One or more "Ventilator Service Required" errors are active in the system	Examine the Significant Event Log error log. The first column of data contains the first error code that is causing this error message. Address according to this first error code Each time you address an error, cycle the motor (OFF to ON to OFF) and check the Significant Event Log again until this alarm is no longer sounded Remove all power from the unit and then reapply power, then turn the motor ON to see if this message is still reported
E-302	Voltage reference on internal ADC failed	Replace System/CPU PCA
E-311	Unit wasn't calibrated or calibration table was destroyed	Recalibrate Replace System/CPU PCA
E-333	U24 circuitry failure U26 circuitry failure	Replace System/CPU PCA
E-338	Unit not calibrated Calibration Table corrupted	Recalibrate Replace System/CPU PCA
E-340	CPLD stopped sending alive signal to the Host CPU	Replace System/CPU PCA
E-344	Failure of Oxygen Blending Module	Recalibrate the device Replace the Blending Module PCA

Error Code	Probable Cause	Corrective Action
E-345	Internal O2 sensor at end of life or watchdog failure	Replace OBM PCA
E-349	Communication between Host and OBM was lost	Replace OBM PCA Replace Interface PCA
E-356	Before a drift is computed for this sensor, its auto-null valve is opened to atmosphere. A test is performed to ensure that the valve has fully opened in accordance with the time provided by the technical specification	Replace Sensor PCA Replace System/CPU PCA
E-358	Proximal Flow Sensor out of electrical spec.	Check tubing Check manifold Replace Sensor PCA
E-364	Internal Li Ion Battery Fuse Open	Replace Internal Li-Ion Battery
E-365	Records SD card information (Manufacturer ID, Product Name, Product Revision, Manufacture Date, and Card Capacity) when an SD card is inserted.	None – recorded for informational purposes
E-366	If the MPV feature is enabled for the primary or secondary prescription stored in the unit during an SD Card Prescription update.	If the MPV feature is enabled for the primary or secondary prescription stored in the unit during an SD Card Prescription update.
E-367	Spontaneous breathing has not been detected within the alarm time when the Mouthpiece Ventilation (MPV) attribute is active.	Check Device and Circuit setup. Check the circuit tubing for pinched or blocked tubes. Check the circuit for leaks Check the Active Exhalation Valve functionality, if it is attached. Check the tubing (inside and outside the unit) for leaks, kinks, or blockages. Replace the sensor board PCA and recalibrate.
E-368	Active Circuit Leak Test Started	None – recorded for informational purposes to indicate that the Active Circuit Leak Test was started by the User.
E-369	Active Circuit Leak Test Passed	None – recorded for informational purposes to

Error Code	Probable Cause	Corrective Action
		indicate that the Active Circuit Leak Test was successful
E-370	Active Circuit Leak Test Failed	Check the Active Exhalation Valve functionality, if it is attached.
E-371	Program execution error	None -Internal software transaction recorded for Informational purposes
E-386	Faulty SD card	Use different SD card
E-999	Program execution error	None -Internal software transaction recorded for Informational purposes

10.4.3 On-Screen Error Codes

Error Code	On-Screen Message	Probable Cause	Corrective Action
E-053	High Vte	The measured Exhaled Tidal Volume is greater than or equal to the alarm setting Flow Sensor problem Active exhalation valve problem	Check device and circuit setup if patient circuit is available Check the Active Exhalation Valve functionality, if it is attached Check the alarm settings against the therapy settings. Check the tubing for leaks, kinks, or blockages Replace the Sensor PCA and re-calibrate
E-054	Low Vte	The measured Exhaled Tidal Volume is less than or equal to the alarm setting High leak Flow sensor problem Active exhalation valve problem	Check device and circuit setup if patient circuit is available Check the circuit tubing for pinched or blocked tubes if patient circuit is available Check the circuit for leaks if patient circuit is available Check the Active Exhalation Valve functionality, if it is attached Check the alarm settings against the therapy settings

Error Code	On-Screen Message	Probable Cause	Corrective Action
			Check the tubing for leaks, kinks, or blockages Replace the Sensor PCA and recalibrate
E-081	Card Error	Faulty SD Card	Use different SD Card
E-083	Card Error	Foreign object inserted in card slot Unformatted card Card prematurely removed	Use correct MMC/SD card Re-insert card Replace System/CPU PCA
E-084	Card Error	Foreign object inserted in card slot Unformatted card Card prematurely removed	Use correct MMC/SD card Re-insert card Replace System/CPU PCA
E-085	Card Error	Foreign object inserted in card slot Unformatted card Card prematurely removed	Use correct MMC/SD card Re-insert card Replace System/CPU PCA
E-086	Card Error	Foreign object inserted in card slot Unformatted card Card prematurely removed	Use correct MMC/SD card Re-insert card Replace System/CPU PCA
E-087	Card Error	Foreign object inserted in card slot Unformatted card Card prematurely removed	Use correct MMC/SD card Re-insert card Replace System/CPU PCA
E-088	Card Error	Foreign object inserted in card slot Unformatted card Card prematurely removed	Use correct MMC/SD card Re-insert card Replace System/CPU PCA
E-089	Card Error	Foreign object inserted in card slot Unformatted card Card prematurely removed	Use correct MMC/SD card Re-insert card Replace System/CPU PCA
E-093	Keypad Stuck	Key is providing reading that it has been held down for 2 minutes	Check the Keypad for stuck keys Replace the Front Panel PCA Replace the System/CPU PCA

Error Code	On-Screen Message	Probable Cause	Corrective Action
E-109	High Expiratory Pressure	Unit is not reaching the exhaled pressure setting; Patient Pressure during exhalation is greater than or equal to Exhaled Pressure Setting = 5 cm for 5 seconds or more	Check device and circuit setup if patient circuit available Check the circuit tubing for pinched or blocked tubes if patient circuit available Check the Active Exhalation Valve functionality, if it is attached Check the tubing for leaks, kinks, or blockages Replace the Sensor PCA and recalibrate
E-110	Low Inspiratory Pressure	Unit is not reaching the inhalation pressure setting; In CPAP, S, S/T, T, PC, and PC-SIMV modes, the lowest Patient Pressure delivered during inhalation is less than the lowest inhalation pressure - 5 cm; In CV, AC, and CIMV modes, the lowest Patient Pressure delivered during inhalation is less than the Low PIP Alarm setting Low pressure sensor reading Large amount of drift Pinched/blocked tubing	Check device and circuit setup if patient circuit available Check the circuit tubing for pinched or blocked tubes if patient circuit available Check the circuit for leaks if patient circuit is available Check the Active Exhalation Valve functionality, if it is attached Check the tubing for leaks, kinks, or blockages Replace the Sensor PCA and recalibrate
E-111	High Respiratory Rate	The measured Breath Rate is greater than or equal to the alarm setting False triggering Alarm/setting mismatch Spontaneous breathing above the alarm	Check device and circuit setup if patient circuit available Check the circuit tubing for pinched or blocked tubes if patient circuit available Check the circuit for leaks if patient circuit is available

Error Code	On-Screen Message	Probable Cause	Corrective Action
			Check the Active Exhalation Valve functionality, if it is attached Check the alarm settings against the therapy settings Check the tubing for leaks, kinks, or blockages Replace the Sensor PCA and recalibrate
E-112	Low Respiratory Rate	The measured Breath Rate is less than or equal to the alarm setting Alarm/setting mismatch Spontaneous breathing below the alarm high leak	Check device and circuit setup if patient circuit available Check the circuit tubing for pinched or blocked tubes if patient circuit available Check the circuit for leaks if patient circuit is available Check the Active Exhalation Valve functionality, if it is attached Check the alarm settings against the therapy settings Check the tubing for leaks, kinks, or blockages Replace the Sensor PCA and recalibrate
E-113	High Minute Ventilation	The measured Minute Ventilation is greater than or equal to the alarm setting Alarm/setting mismatch Low breath rate (leak) High exhaled tidal volume (flow sensor problem, active exhalation valve problem)	Check device and circuit setup if patient circuit available Check the circuit for leaks if patient circuit is available Check the Active Exhalation Valve functionality, if it is attached Check the alarm settings against the therapy settings

Error Code	On-Screen Message	Probable Cause	Corrective Action
			Check the tubing for leaks, kinks, or blockages Replace the Sensor PCA and recalibrate
E-114	Low Minute Ventilation	The measured Minute Ventilation is less than or equal to the alarm setting Alarm/setting mismatch High leak High breath rate Low exhaled tidal volume (flow sensor problem)	Check device and circuit setup if patient circuit available Check the circuit tubing for pinched or blocked tubes if patient circuit available Check the circuit for leaks if patient circuit is available Check the Active Exhalation Valve functionality, if it is attached Check the alarm settings against the therapy settings Check the tubing for leaks, kinks, or blockages Replace the Sensor PCA and recalibrate
E-115	High Vti	The measured inhaled tidal volume is greater than or equal to the alarm setting Flow sensor problem Active exhalation valve problem	Check device and circuit setup if patient circuit available Check the Active Exhalation Valve functionality, if it is attached Check the alarm settings against the therapy settings Check the tubing for leaks, kinks, or blockages Replace the Sensor PCA and recalibrate
E-116	Low Vti	The measured inhaled tidal volume is less than or equal to the alarm setting High leak Flow sensor problem	Check device and circuit setup if patient circuit available Check the circuit tubing for pinched or blocked tubes if patient circuit available

Error Code	On-Screen Message	Probable Cause	Corrective Action
		Active exhalation valve problem	Check the circuit for leaks if patient circuit is available Check the Active Exhalation Valve functionality, if it is attached Check the alarm settings against the therapy settings Check the tubing for leaks, kinks, or blockages Replace the Sensor PCA and recalibrate
E-118	Low Circuit Leak	The leak in the system is too small Wrong circuit Blocked tubes Sensor problems	Check device and circuit setup Check the circuit tubing for pinched or blocked tubes Check the circuit setting against the circuit being used Check the tubing for leaks, kinks, or blockages Replace the Sensor PCA and recalibrate
E-120	Apnea	Spontaneous breathing has not been detected within the alarm time High leak	Check device and circuit setup Check the circuit tubing for pinched or blocked tubes Check the circuit for leaks Check the Active Exhalation Valve functionality, if it is attached Check the tubing for leaks, kinks, or blockages Replace the Sensor Board PCA and recalibrate
E-121	Circuit Disconnect	High flow condition has been detected High leak Flow Sensor problem	Check device and circuit setup

Error Code	On-Screen Message	Probable Cause	Corrective Action
			Check the circuit tubing for pinched or blocked tubes Check the circuit for leaks Check the Active Exhalation Valve functionality, if it is attached Check the tubing for leaks, kinks, or blockages Replace the Sensor Board PCA and recalibrate
E-162	Replace Detachable Battery	Detachable Li-Ion has a TDA due to Discharge Overcurrent or Discharge Short Current PMB fault System Board fault Detachable Li-Ion fault	Replace Detachable Li-Ion Replace Power Management PCA Replace System CPU PCA
E-165	Low Expiratory	When the Expiratory pressure is less than or equal to the EPAP/CPAP/PEEP - 5 pressure units in value for 5 seconds or more Deactivated if the Attained Expiratory Pressure > EPAP/PEEP/CPAP - 5 pressure units	Check the circuit tubing for pinched or blocked tubes if patient circuit available Check the circuit for leaks if patient circuit available Check the Active Exhalation Valve functionality, if it is attached Check the tubing for leaks, kinks, or blockages Replace the sensor board
E-170	High Inspiratory Pressure	Unit is exceeding the inhalation pressure setting; IN CPAP, S, S/T, T, PC, and PC-SIMV modes, the highest Patient Pressure delivered during inhalation is greater than the highest inhalation	Check the circuit tubing for pinched or blocked tubes if patient circuit available Check the circuit for leaks if patient circuit available Check the Active Exhalation Valve

Error Code	On-Screen Message	Probable Cause	Corrective Action
		pressure + 5 cm; In CV, AC, and SIMV modes, the highest Patient Pressure delivered during inhalation is greater than the High PIP Alarm setting High pressure Sensor reading Large amount of drift Pinched/blocked tubing	functionality, if it is attached Check the tubing for leaks, kinks, or blockages Replace the Sensor PCA
E-171	High Inspiratory Pressure	Unit is exceeding the inhalation pressure setting; IN CPAP, S, S/T, T, PC, and PC-SIMV modes, the highest Patient Pressure delivered during inhalation is greater than the highest inhalation pressure + 5 cm; In CV, AC, and SIMV modes, the highest Patient Pressure delivered during inhalation is greater than the High PIP Alarm setting High pressure sensor reading Large amount of drift Pinched/blocked tubing	Check the circuit tubing for pinched of blocked tubes if patient circuit is available Check the circuit for leaks if patient circuit is available Check the Active Exhalation Valve functionality, if it is attached Check the tubing for leaks, kinks, or blockages Replace the Sensor PCA
E-173	Start On Battery	Vent was started on battery power	None - recorded for informational purposes to indicate the unit was started without AC power.
E-176	Replace Detachable Battery	Can't communicate with Detachable Li-Ion battery and charger is not trying to wake-up charge the battery. Could take up to 210 seconds for alarm to be reported because the charger is trying to	Replace the Power Management PCA Replace the Detachable Li-Ion

Error Code	On-Screen Message	Probable Cause	Corrective Action
		wake-up charge the Detachable Li-Ion PMB fault Detachable Li-Ion fault	
E-178	Replace Detachable Battery	Detachable Li-Ion battery not authentic Fake battery PMB fault Detachable Li-Ion fault	Replace Detachable Li-Ion Replace Power Management PCA
E-179	AC Power Disconnected	AC was disconnected PMB fault AC Power Supply fault Power Cord fault A/D channel fault	Verify AC connected Replace Power Management PCA Replace AC Power Supply Replace System/CPU PCA
E-180	External Batt Disconnected	Lead Acid was disconnected Power Cord fault PMB fault A/D channel fault	Connect Lead Acid Verify Lead Acid Battery Cord Replace Power Management PCA Replace System/CPU PCA
E-181	Detach Batt Disconnected	Detachable Li-Ion was disconnected Li-Ion connector fault PMB fault A/D channel fault	Verify Detachable Li-Ion connected Replace Detachable Li-Ion cable Replace Power Management PCA Replace System/CPU PCA
E-183	Low External Battery	Low battery - Lead Acid has ≤ 20 minutes run time remaining and it is last available power source	Charge Lead Acid Battery Replace Lead Acid Battery
E-184	Low Detachable Battery	Low battery - Detachable Li-Ion has ≤ 20 minutes run time remaining and it is last available power source	Charge Detachable Li-Ion Battery Replace Detachable Li-Ion Battery
E-185	Low Internal Battery	Low battery - Internal Li-Ion has ≤ 20 minutes run time remaining and it is last available power source	Charge Internal Li-Ion Battery
E-186	Low External Battery	Depleted battery - Lead Acid has ≤ 10	Charge Lead Acid battery

Error Code	On-Screen Message	Probable Cause	Corrective Action
		minutes run time remaining and it is last available power source	Replace Lead Acid battery
E-187	Low Detachable Battery	Depleted battery - Detachable Li-Ion has ≤ 10 minutes run time remaining and it is last available power source	Charge Detachable Li-Ion Battery Replace Detachable Li-Ion battery
E-188	Low Detachable Battery	Depleted battery - Internal Li-Ion has ≤ 10 minutes run time remaining and it is last available power source	Charge Internal Li-Ion Battery
E-192	Replace Detachable Battery	AFE chip does not receive the appropriate frequency on the WDI pin from the Gas Gauge chip. Both of these chips are in the Li-Ion battery pack Detachable Li-Ion fault	Replace Detachable Li-Ion battery Replace Power Management Board
E-194	Replace Detachable Battery	Detachable Li-Ion Battery Permanent Failure	Replace Detachable Li-Ion battery
E-196	Replace Detachable Battery	Detachable Li-Ion State of Health ≤ 50%. Full Charge Capacity (FCC) is less than 51% of the design capacity Detachable Li-Ion FCC error Detachable Li-Ion fault Detachable Li-Ion end of life	Cycle the Detachable Li-Ion (discharge battery so that capacity change is > 50%, then rest for > 2 hours. Charge to 100%, then rest for > 2 hours) Replace Detachable Li-Ion battery
E-206	Replace Detachable Battery	Corruption of battery gas gauge	Replace Battery Cycle the Detachable Li-Ion (discharge battery so that capacity change is > 50%, then rest for > 2 hours. Charge to 100%, then rest for > 2 hours)
E-209	Replace Detachable Battery	Detachable Li-Ion Cycle Count ≥ 5500 cycles Detachable Li-Ion end of life	Replace Detachable Li-Ion Battery

Error Code	On-Screen Message	Probable Cause	Corrective Action
E-218	Batt Discharge Stopped-Temp.	Internal Li-Ion charge current greater than 4 Amps for greater than 2 sec. Battery charge FET is turned off. High temperature during discharge. Battery recovers if temperature is less than 55° C.	Inspect fans Replace cooling fan(s)
E-219	Batt Discharge Stopped-Temp.	Detachable Li-Ion charge current greater than 4 Amps for greater than 2 sec. Battery charge FET is turned off. High temperature during discharge. Battery recovers if temperature is less than 55° C.	Inspect fans Replace cooling fan(s)
E-230	Battery Not Charging - Temp.	Internal Li-Ion temp > 45° C or < 0° C when charging is initiated. Resets when temp ≤ 42° C and ≥ 3° C Internal Li-Ion temp > 50° C or < -2.5° C during charging. Resets when temp 42° C and ≥ 0.5° C High/low ambient temperature Cooling fan(s) fault Detachable Li-Ion fault	Inspect fans Replace cooling fan(s) Replace Internal Li-Ion
E-231	Battery Not Charging - Temp.	Detachable Li-Ion temp > 45° C or < 0° C when charging is initiated. Resets when temp ≤ 42° C and ≥ 3° C Detachable Li-Ion temp > 50° C or < -2.5° C during charging. Resets when temp 42° C and ≥ 0.5° C High/low ambient temperature Cooling fan(s) fault	Inspect fans Replace cooling fan(s) Replace Detachable Li-Ion

Error Code	On-Screen Message	Probable Cause	Corrective Action
		Detachable Li-Ion fault	
E-234	Upgrade Failed Screen	Unable to open the new software file on the card	Reformat card and replace new software file on the card Re-insert card, retry upgrade
E-235	Upgrade Failed Screen	Unable to read the new software file on card The new software file on the card is corrupt	Reformat card and replace new software file on the card Re-insert card, retry upgrade
E-236	Upgrade Failed Screen	The user tried to upgrade to an older version of software	Reformat card and replace new software file on the card Re-insert card, retry upgrade
E-237	Upgrade Failed Screen	The user tried to upgrade to a version of software that is not intended for the Trilogy Ventilator	Reformat card and replace new software file on the card Re-insert card, retry upgrade
E-238	Upgrade Failed Screen	The new software file on the card is corrupt	Reformat card and replace new software file on the card Re-insert card, retry upgrade
E-239	Upgrade Failed Screen	Unable to program the new software on the Host CPU	Replace System/CPU PCA
E-240	Upgrade Failed Screen	The user tried to upgrade to a version of software that is not intended for the Trilogy Ventilator	Reformat card and replace new software file on the card Re-insert card, retry upgrade
E-241	Upgrade Failed Screen	Unable to program the new software on the DSP	Replace System/CPU PCA
E-242	Upgrade Failed Screen	Unable to program the new software on the Host CPU	Reformat card and replace new software file on the card. Re-insert card, retry upgrade Replace System/CPU PCA
E-245	Software stops blower and Loss of All Power sounds	Last battery depleted	Replace or charge the battery

Error Code	On-Screen Message	Probable Cause	Corrective Action
E-246	Internal Battery Not Charging	Unable to charge Internal Li-Ion battery after 30 minutes PMB fault Internal Li-Ion fault Detachable Li-Ion fault	Replace Internal Li-Ion Replace Detachable li-Ion Replace Power Management PCA
E-247	Detach Battery Not Charging	Unable to charge Detachable Li-Ion battery after 30 minutes PMB fault Detachable Li-Ion fault Internal Li-Ion fault	Replace Detachable Li-Ion Replace Internal Li-Ion Replace Power Management PCA
E-266	Replace Detachable Battery	Checks if Li-Ion battery is present by attempting to communicate when the Charger Chip safety signal indicates the battery is not present. Safety signal from the Li-Ion may be disconnected or Charger Chip may have fault so it is not detecting a Li-Ion battery	Replace the Power Management PCA Replace Detachable Battery
E-280	External Battery Depleted	Lead Acid was depleted	Replace or charge Lead Acid
E-281	Detachable Battery Depleted	Detachable Li-Ion was depleted	Replace or Charge Detachable Li-Ion
E-282	Internal Battery Depleted	Internal Li-Ion was depleted Internal Li-Ion discharge FET off	Charge Internal Li-Ion Replace Internal Li-Ion
E-283	Upgrade Screen Complete	Software upgrade completed successfully	None - recorded for informational purposes to indicate that a software upgrade was completed
E-291	Check Circuit	Patient circuit does not match Circuit Type Tubing on active circuit not connected properly Tubing on active circuit fell off	Change circuit or Circuit Type Reconnect tubing correctly Reconnect tubing Install correct porting block Replace Sensor PCA

Error Code	On-Screen Message	Probable Cause	Corrective Action
		One of dual sensors failed	
E-299	Card Error	When the SD Card does not have enough memory available to write EDF (3 days of Waveform and 1 year of Annotations and Detailed data) and Event Log (CSV) Files	Erase unnecessary files on card. Ensure card > 75 MB Use new card
E-300	Card Error	When the Card is detected as a write protected SD Card	Check write protect switch on card Use new card Replace System/CPU PCA
E-301	Card Error	Error in creating files/directories on the SD Card	Use new card Replace System/CPU PCA
E-305	High Internal Oxygen	Disconnected O_2 tubing O_2 level between 25% and 35%	Connect/replace O_2 tubing Replace Interface PCA
E-307	High Temperature	It could be caused by air stream temperature, motor temperature or batteries temperature	Check/replace fans Replace batteries Replace motor Replace air stream temperature sensor
E-308	High Temperature	It could be caused by air stream temperature, motor temperature or batteries temperature	Check/replace fans Replace batteries Replace motor Replace air stream temperature sensor
E-309	Check External Battery	Lead Acid is useable and current is being drawn from the Li-Ion battery External Battery Cable fault Faulty connection to Leak Acid battery terminals PMB fault A/D channel fault High impedance Lead Acid battery	Check connections Replace External Battery Cable Replace Lead Acid Battery Replace Power Management PCA Replace System/CPU PCA
E-312	Prescription Change screen	If usable Rx found on the SD Card for the device.	None - recorded for informational purposes that the prescription

Error Code	On-Screen Message	Probable Cause	Corrective Action
	displayed at time of Rx Update		was read successfully from the SD card.
E-313	Prescription Review screen displayed at time of Rx Update	Rx from the SD Card is ready for user review	None - recorded for informational purposes that the prescription was read successfully from the SD card.
E-314	Failed -Card is read only	If the Rx is only for the current device and the card is read only	Check write protect switch on card Replace System/CPU PCA
E-315	Failed - Serial Number	If the Serial Number in the Rx Card does not match the Serial Number of the device	None - recorded for informational purposes that the serial number in the prescription does not match the serial number for the device.
E-316	Failed - Circuit Type	If the circuit type in the Rx on the card does not match the Circuit Type in the device	None - recorded for informational purposes that the circuit type in the prescription does not match the circuit type for the device.
E-317	Prescription Change Failed	Failure to update the Rx due to the errors in the Rx settings	None - recorded for informational purposes to indicate that the prescription had bad settings.
E-318	Prescription Change Complete	Rx update is complete	None - recorded for informational purposes to indicate that the prescription update was completed successfully.
E-319	Prescription Change Cancelled	Rx update is cancelled by the user by either UI option or by pulling out of the card before Rx Update is complete	None - recorded for informational purposes indicate that the prescription update was not completed.
E-320	Prescription Change Failed	failure to update the Rx due to error in the file format or errors in reading the file	None - recorded for informational purposes to indicate that the prescription data on the card could not be read.
E-321	Prescription Change failed	Rx version incorrect for the device	None - recorded for informational purposes to indicate that the

Error Code	On-Screen Message	Probable Cause	Corrective Action
			version of the prescription data on the SD card was bad.
E-322	Prescription Change Failed	Rx checksum is incorrect	None - recorded for informational purposes to indicate that the prescription on the SD card had a bad checksum.
E-342	High Priority	Pressure at Oxygen Blending Module inlet below 40 psi	Check supply pressure Check inlet pressure sensor connections Replace OBM PCA
E-343	High Priority	Pressure at Oxygen Blending Module above 87 psi	Check supply pressure Check inlet pressure sensor connections Replace OBM PCA
E-348	Upgrade Failed Screen	OBM did not accept new software version	Reformat card and replace new software file on card Re-insert card; retry upgrade
E-351	Low Oxygen Flow	Delivered oxygen concentration less than FiO_2 set point - 10%	Check supply pressure Check inlet pressure sensor connections Check internal flow element for leaks Replace OBM Module Replace OBM PCA
E-352	High Oxygen Flow	Delivered oxygen concentration greater than FiO_2 setpoint + 10%	Check inlet pressure Replace OBM valve Replace OBM PCA
E-359	High Internal Oxygen	O_2 level inside OBM > 30%	Connect O_2 tubing in OBM Disconnect O_2 source or replace sensor in OBM
E-360	Low Vte	The desired tidal volume cannot be delivered within the limits of the IPAP MIn and Max settings High leak Flow Sensor problem	Check the tubing (inside and outside unit) for leaks, kinks, or blockages Replace the sensor board and recalibrate
E-362	Low SpO_2	The %SpO2 signal received from the pulse oximeter	Check the pulse oximeter accessory.

Error Code	On-Screen Message	Probable Cause	Corrective Action
		accessory is less than the alarm setting.	Check the Low SpO2 alarm setting against the %SpO2 signal received from the pulse oximeter accessory.

10.4.4 Log Only Codes

Error Code	Probable Cause	Corrective Action
E-015	Hardware current limiting is not working correctly	Replace the System/CPU PCA Replace Motor
E-016	Problem with +3.3V_DSP. U5 failure U26 failure	Replace System/CPU Subassembly Replace Motor
E-018	Problem with DC/DC circuitry or possibly motor	If repeatable at power up or blower off/on cycle (logs a new E-018 error each time) then replace both the Motor/Blower assembly AND replace System/CPU Subassembly & If only single logged error & not repeatable, do not replace motor or system CPU subassembly. Update software to latest revision.
E-019	Problem with DC/DC circuitry	If repeatable at power up or blower off/on cycle (logs a new E-019 error each time) then replace Motor & replace System/CPU Subassembly & If only single logged error & not repeatable, do not replace motor or system CPU subassembly. Update software to latest revision.
E-022	Motor Temperature sensor failed Problem with U37 circuitry	Replace Motor Replace System/CPU PCA
E-078	Unable to read a valid time from the RTC chip	Replace the System/CPU PCA
E-079	The time read from the RTC does not match time on Host CPU	Replace the System/CPU PCA
E-122	Unable to write to Event Log	Replace the System/CPU PCA
E-123	Error indicates a shorted Q29 in the Li-Ion Battery discharge path on the Power Management PCA. This MOSFET prevents a low mA leak current from the Internal Battery when the discharge path is disabled by either the Host software or the hardware	Replace the Power Management PCA
E-182	The data is corrupted.	Recalibrate

Error Code	Probable Cause	Corrective Action
E-198	U4 circuitry failure. U26 circuitry failure. U40 circuitry failure.	Replace System/CPU Subassembly
E-211	Detachable Li Ion cell voltage less than 2.5 volts for greater than 2 sec. Battery discharge FET is turned off. Battery discharged too low. Battery recovers if cell voltage is greater than 3 volts.	Charge Detachable Li Ion battery.
E-212	Internal Li Ion cell voltage less than 10 volts for greater than 6 sec. Battery discharge FET is turned off. Battery discharged too low. Battery recovers if cell voltage is greater than 12 volts.	Charge Internal Li Ion battery.
E-213	Detachable Li Ion cell voltage less than 10 volts for greater than 6 sec. Battery discharge FET is turned off. Battery discharged too low. Battery recovers if cell voltage is greater than 12 volts.	Charge Detachable Li Ion battery.
E-220	Internal Li Ion battery capacity is equal to 0%. Battery discharged.	Charge Internal Li Ion battery.
E-221	Detachable Li Ion battery capacity is equal to 0%. Battery discharged.	Charge Detachable Li Ion battery.
E-289	One or more "Ventilator Service Recommended" errors are active for device equipped with software prior to version 10.4	Examine the Significant Event Log error log. The first column of data contains the first error code that is causing this error message Address according to this first error code Each time you address an error, cycle the motor (OFF to ON to OFF) and check the Significant Event Log again until this alarm is no longer sounded Remove all power from the unit and then reapply power, then turn the motor ON to see if this message is still reported
E-304 (Bad)	Bad Voltage Level = Less than 400 mV Text Displayed in LOG: The acceptable voltage range is 400 mV to 1 VDC O2 sensor failed	Replace Interface PCA
E-304 (Good)	Erroneous Code Text Displayed in LOG: Opt.Text=O2 Sensor GOOD O2 Level: 400mV to 1V Good Voltage Level = 400mV to 1V	No Action Required
E-334	Internal Li Ion was unsealed (programmable parameters are accessible) and was re-sealed by the software.	Retest if not repeatable Replace Internal Battery if error code is repeatable.

Error Code	Probable Cause	Corrective Action
E-335	Detachable Li Ion was unsealed (programmable parameters are accessible) and was re-sealed by the software.	Retest if not repeatable If Detachable discharge FET's are programmed off during testing with Internal battery present and functioning and DUT reboots, then replace PMB. DUT power source should have switched to Internal battery but did not. This causes the software to reseal the battery on reboot and report ERR_RE_SEALED_DET_LI_ION Replace Detachable Battery if error code is repeatable and programming of Discharge FETs of the Detachable Batteries was not involved.
E-354	Units O2 sensor not calibrated O2 Sensor Calibration Table corrupted NOTE: E354 is expected and allowable when the O2 sensor Cal has Failed, and the Pprox, Sensor, and Device Cal Tables are Active.	Recalibrate Unit. Replace System/CPU Subassembly
E-402	FILES.SEQ on SD Card has a size larger than expected	Format or replace SD card.
E-403	Too many files detected during rebuild attempt of FILES.SEQ	Format or replace SD card.

10.4.5 System Reboot Codes

Error Code	Probable Cause	Corrective Action
E-001	Bad boot flash location in DSP	Replace System/CPU Subassembly
E-002	Bad boot flash location in DSP	Replace System/CPU Subassembly
E-003	Bad boot flash location in DSP	Replace System/CPU Subassembly
E-004	Bad internal DSP RAM	Replace System/CPU Subassembly
E-005	Program Execution Error	Replace System/CPU Subassembly
E-006	Program Execution Error	Replace System/CPU Subassembly
E-008	Program Execution Error	Replace System/CPU Subassembly if repeatable
E-020	Problem with serial communication between DSP and Host	Replace System/CPU Subassembly
E-024	Program Execution Error	Replace System/CPU Subassembly
E-025	Program Execution Error	Replace System/CPU Subassembly
E-026	Program Execution Error	Replace System/CPU Subassembly
E-027	Program Execution Error	Replace System/CPU Subassembly
E-042	Corrupt software in flash Corrupt software in RAM	Reinstall software Replace System/CPU Subassembly
E-043	Defective RAM chip	Replace System/CPU Subassembly
E-058	Program Execution Error – executing a bad instruction	Reinstall software Replace System/CPU Subassembly
E-060	Program Execution Error – fetching an instruction from outside of memory range	Reinstall software Replace System/CPU Subassembly
E-061	Program Execution Error – accessing data from outside of memory range	Reinstall software Replace System/CPU Subassembly
E-062	Program Execution Error – ARM-reserved exception for microprocessor issue	Program Execution Error – ARM-reserved exception for microprocessor issue
E-063	Program Execution Error – interrupt that is not used by the system was triggered.	Program Execution Error – ARM-reserved exception for microprocessor issue

Error Code	Probable Cause	Corrective Action
E-075	Defective EEPROM. Program Execution Error.	Replace System/CPU Subassembly
E-288	Program Execution Error	Program Execution Error
E-292	Unreliable communication with the DSP	Replace System/CPU Subassembly

10.4.6 Bluetooth Error Codes

Error Code	Probable Cause	Corrective Action
E-372	Trilogy Bluetooth radio paired successfully with a mobile device.	None – recorded for informational purposes to indicate that the Trilogy Bluetooth radio paired successfully with a mobile device.
E-373	Trilogy Bluetooth radio has deleted the list of mobile devices that it has paired with in the past.	None – recorded for informational purposes to indicate that the Trilogy Bluetooth radio has deleted the list of mobile devices that it has paired with in the past.
E-374	Calibration mode is exited, and the device/product/rasp id indicates it is not configured to support a Bluetooth radio, but a Bluetooth radio is detected.	Configure the device/ product/rasp id as a Bluetooth device.
E-375	Calibration mode is exited, and device/product/rasp id indicates it is configured to support a Bluetooth radio, but the Bluetooth radio cannot be initialized.	Configure the device/ product/rasp id as a non-Bluetooth device. Replace the Bluetooth radio Replace System PCA
E-376	Bluetooth radio cannot be initialized. The device/product/rasp ID indicates it is configured to support a Bluetooth radio, but a Bluetooth radio is not detected.	Replace the Bluetooth radio Configure the device/ product/rasp ID as a non-Bluetooth device. Replace System PCA
E-377	Bluetooth informational debug message.	None – recorded for informational purposes for debugging Bluetooth radio processing.
E-378	Bluetooth radio upgrade informational debug message.	None – recorded for informational purposes for debugging Bluetooth radio upgrade processing.

Error Code	Probable Cause	Corrective Action
E-379	Bluetooth radio upgrade informational debug message.	None – recorded for informational purposes for debugging Bluetooth radio upgrade processing.
E-380	Bluetooth radio upgrade informational debug message.	None – recorded for informational purposes for debugging Bluetooth radio upgrade processing.
E-381	Bluetooth radio upgrade informational debug message.	None – recorded for informational purposes for debugging Bluetooth radio upgrade processing.
E-382	The user tried to upgrade the radio software to a version of software that is not intended for the Trilogy Ventilator.	Reformat card and replace new software files (including radio) on the card. Re-insert card; re-try upgrade
E-383	Bluetooth informational debug message.	Replace radio hardware
E-384	AC was disconnected PMB fault AC Power Supply fault Power Cord fault A/D channel fault	Verify AC connected Replace Power Management Board Replace AC power Supply Replace System/CPU Subassembly