

Astral Alarm Troubleshooting Guide

| Alarm | Patient Cause | Device Cause |
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| High Pressure* | Coughing, increased secretions, bronchospasm, upper airway obstruction Solution: Reassess patient. | Water in tubing, high tidal volumes or PIFs, crimped or partially occluded ventilator circuit Solution: Empty water from tubing, check the circuit for obstruction, check inspiratory flow rates and/or I:E ratio. |
| Obstruction/High Pressure Alarm | Cough during exhalation, trach shift into soft tissue Solution: Reassess patient. | Late cycling, Ti Min/Ti set too long, occluded ventilator circuit or expiratory valve Solution: Starting at the patient connection, trace the ventilator circuit (inspiratory and expiratory if present) back to the ventilator checking all connections and fittings to ensure there is no occlusion. Verify ventilator settings are appropriate for patient. |
| Low Pressure* | Trach decannulation, , cuff leak or large mask leak Solution: Reposition ventilator circuit and trach ties, reposition mask, verify cuff pressure. | Leak in circuit or accessory components—(HME, humidifier, nebulizer, etc.). Solution: Starting at the patient connection, trace ventilator circuit (inspiratory and expiratory if present) back to the ventilator ensuring all connections and fittings. |
| High PEEP** | Intrinsic PEEP, expiratory time too long Solution: Reassess patient and evaluate PEEP, and/or i-time. | Obstruction in proximal/PEEP lines or circuit Solution: Trace the patient pressure line and expiratory valve line from the patient to the ventilator to ensure that tubings are not crimped and/or occluded by condensation. |
| Low PEEP** | Consider cuff leak, trach decannulation or significant mask leak Solution: Reposition ventilator circuit and trach ties, reposition mask, verify cuff pressure. | Check for leaks or obstruction in the circuit Solution: Starting at the patient connection, trace the ventilator circuit (inspiratory and expiratory, if present) back to the ventilator, checking all connections and fittings. |
| Apnea Alarm* | Decreasing respiratory drive, upper airway obstruction Solution: Reassess patient | “Trigger” not set appropriately, leak in circuit, “Apnea” alarm set too short Solution: Starting at the patient connection, trace the ventilator circuit (inspiratory and expiratory, if present) back to the ventilator, checking all connections and fittings. Adjust trigger and apnea alarm settings as appropriate. |
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| High Tidal Volume* High MV* | Decreased airway resistance, increased lung compliance, auto-triggering Solution: Reassess patient. | Use of nebulizer, circuit or mask leak in a single limb valve circuit Solution: When nebulizing medications utilize a nebulizer system that does not add volume to the ventilator circuit (e.g., Aerogen). Starting at the patient connection, trace the ventilator circuit (inspiratory and expiratory, if present) back to the ventilator, checking all connections and fittings. |
| Low Tidal Volume* Low MV* | Increased airway resistance Solution: Reassess patient. Suction if necessary, adjust trach cuff pressure as appropriate. | Condensation in the circuit, alarm set too sensitively in patients with small tidal volumes (COPD/peds), disconnected, crimped or partially occluded ventilator circuit Solution: Starting at the patient connection, trace the ventilator circuit (inspiratory and expiratory, if present) back to the ventilator, checking all connections and fittings. Empty condensation as needed. |
| High Respiratory* Rate | Anxiety/pain, respiratory distress Solution: Reassess patient. | “Trigger” sensitivity set too sensitive, low inspiratory flow settings and/or short I:E ratio. Solution: Adjust settings as appropriate. Evaluate patient ventilator display to review trigger sources (patient versus ventilator). An expiratory flow sensor effected by excessive condensation can result in auto-trigger. |
| Low SpO ₂ * No SpO ₂ monitoring* | Fluid overload, atelectasis, poor circulation, hypoventilation Solution: Reassess patient. Reposition and/or replace patient probe as appropriate. | Circuit disconnect, pulse ox probe disconnection. Solution: Check sensor connection at device and site of patient probe. Reconnect/reposition as appropriate. |
| *This alarm may be the result of an alarm threshold being set too close to the patient’s actual parameter **When set to “On” these alarms default to 2 cm above and 2 cm below set PEEP | | |
| System Errors | | |
| Critically Low Battery | N/A | Low battery charge, less than 10 minutes of ventilation time remaining Solution: Connect Astral to main power supply. Alarm cannot be reset until this action is taken. |
| Low Internal Battery | N/A | Low battery charge, less than 20 minutes of ventilation time remaining. Solution: Connect Astral to A/C power supply |
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| Battery Inoperable | N/A | Battery is not functional Solution: Disconnect the device from power, turn the device off, then back on again when safe to do so. Ensure battery is in the device; replace internal battery as needed. |
| Flow Sensor Not Calibrated | N/A | Solution: Perform Learn Circuit. |
| Expiratory Flow Sensor Fault | N/A | Excessive condensation in expiratory limb, resulting in water back into the device; leak in circuit; excessive flows resulting in this error when 10 mm double limb circuit in use Solution: Perform Learn Circuit. If error persists replace expiratory flow sensor; place AB filter on expiratory limb if a 10 mm circuit is in use. |
| Learn Circuit Failed | N/A | Incorrect or loose connection in circuit; circuit resistance high; AB filter needed on the expiratory limb of a 10 mm double limb circuit, using corrugated circuits with increased resistance. Solution: Repeat Learn Circuit; correct any disconnections or leaks in circuit; place an AB filter on expiratory limb if a 10 mm circuit is in use. |
| Circuit Fault | N/A | Circuit impedance doesn't match circuit type or there is a flow sensor fault or circuit disconnection. Solution: Perform Learn Circuit. |
| Incorrect Circuit | Patient not breathing on the device after starting therapy | Solution: Check circuit. Replace circuit if needed or resolve any circuit disconnections; ensure circuit type matches settings; ensure therapy settings have been confirmed. |
| NV Mask | N/A | Non-vented mask in use or blocked mask vents Solution: Change mask, unblock vents, change mask selection or perform Learn Circuit. |
| Pressure Line Disconnected | Patient not breathing on the device after starting therapy, large mask leak | Disconnect or leak in proximal and/or PEEP lines of single limb valve circuit; check the circuit; replace circuit if needed; check pressure sensor Solution: Correct any large circuit or mask leaks; replace pressure sensor. |