

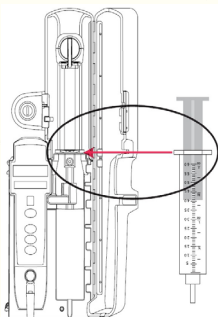
Alaris® PCA Module Guide

Syringe Loading and Set-Up

WARNING: TO PREVENT UNREGULATED FLOW, CLOSE SET TUBING CLAMP BEFORE LOADING OR UNLOADING SYRINGE.

Loading:

1. Open syringe barrel clamp (clear piece) until it clears syringe chamber.
2. Raise drive head (gray) to fully extended position.
3. Insert syringe barrel flange between barrel flange grippers (see drawing).
4. Lock syringe in place by closing barrel clamp.
5. Twist gripper control clockwise, lower drive head, lock plunger in place with plunger grippers.



Priming:

1. If priming using PCA module, this feature is available when viewing Infusion Mode screen during programming of PCA module. At this screen Press **OPTIONS**, then press **PRIME SET WITH SYRINGE**.
2. Once tubing set is primed, close slide clamp.

Note: At the start of an infusion program, the system prompts to select and confirm syringe type and size. Ensure displayed syringe manufacturer and size correctly identifies the installed syringe.

Programming Guide

WARNING: DO NOT PRIME WHILE ATTACHED TO PATIENT!
Initial Set-Up:

1. Select administration set and attach set to syringe.
2. If priming manually, express air from administration tubing set.
3. Load syringe with administration set attached.
4. Press **SYSTEM ON** key and select **YES** or **NO** to "New Patient".
5. Select appropriate profile.
6. Press **CHANNEL SELECT** key and set key to "Program" position.
7. Press **CONFIRM** time setting and choose correct syringe type and size.
Note: If installed syringe is not listed, press **ALL SYRINGES** and choose matching installed syringe type and size.
8. Choose correct medication and concentration.
9. At "Infusion Mode" screen: To Prime, press **OPTIONS** key.
10. Press **PRIME SET WITH SYRINGE**.
11. Press and hold **PRIME** key to prime tubing.
Note: Do not prime while attached to patient.
12. Press **EXIT** when prime is complete.
13. Choose desired Infusion Mode and follow on-screen prompts.
14. Close and lock door and attach administration set tubing set to patient.
15. Review settings and press **START**.

Programming PCA with PCA Pause Protocol Enabled:

1. Perform steps 1-10 of Initial Set-Up in previous section and continue with following steps.
2. Review Clinical Advisory "Attach an SPO2 or EICO2 Module Now".
3. Press **CONFIRM**.
Note: If a monitoring module is not attached and started, PCA Pause Protocol WILL NOT activate.
4. Choose desired Infusion Mode and follow onscreen prompts.
5. Press **NEXT** key to verify medication parameters.
6. Review Clinical Advisory "PCA Pause Limits Should be Reviewed".
7. Press **CONFIRM**.
8. Choose desired Infusion Mode and follow onscreen prompts.

Change Syringe:

1. Press **PAUSE** and close tubing clamp.
2. Use key and unlock door and remove old syringe.
3. Press **SILENCE**.
4. Attach new syringe to tubing and load new syringe.
5. Set key to "Program" position and close door.
6. Press **CHANNEL SELECT** key.
7. Choose correct syringe type and size.
8. Press **CONFIRM**.
9. Press **RESTORE** if same drug and concentration.
10. Verify drug and concentration and current settings.
11. Lock door and open tubing clamp.
12. Review settings and press **START**.

Change Program/Mode:

1. Press **CHANNEL SELECT** key.
2. Press **PROGRAM**.
3. Set key to "Program" position or enter authorization code (if enabled).
4. Choose desired infusion mode and follow onscreen prompts.

Beginning of Shift/Summary Review:

1. Press **CHANNEL SELECT** key and verify settings.
2. Press **START** key.

Patient History/End of Shift/24hr History:

1. Press **CHANNEL SELECT** key.
2. Press **OPTIONS**.
3. Press **PATIENT HISTORY**.
4. Press **ZOOM** key (time interval) as appropriate and review drug totals.
5. To clear patient history press **CLEAR HISTORY** and press **YES** or **NO**.
6. To view 24 hour totals: Press 24 h Totals.
7. Press **EXIT** then press **START**.

Operator Precautions: For proper operation of the Alaris® System (formerly Medley® System) the user must be familiar with the features, disposables, administration sets, set-up and programming. This guide includes selected information and suggestions and is not intended to be comprehensive instructions for the set-up and operation of the Alaris® System. For complete instructions along with Warnings and Cautions, refer to Alaris® System Directions for Use (v8).



Saint Joseph Health System

PCA/Monitoring Trend Data

Note: This function requires use of Alaris® monitoring module(s).

1. Press **CHANNEL SELECT** on the monitoring module.
2. Press **OPTIONS**.
3. Press **PCA/Monitoring Trend data**.
4. To exit: Press **MAIN**.
5. Press **MAIN SCREEN**.

Give a Bolus Dose

1. Press **CHANNEL SELECT** key.
2. Press **Bolus Dose**.
3. Set key to Program position or enter authorization code (if enabled).
4. Enter bolus dose amount and lock door.
5. Press **CONFIRM**.
6. Review settings and press **START**.

Stop Bolus, Loading or PCA Dose

1. Press **CHANNEL SELECT** key.
2. Press **Stop Bolus/Loading or PCA**.
3. Press **YES** or **NO**.

Note: Programmed settings will resume.

Change Dose Request Cord Setting

1. Press **CHANNEL SELECT** key.
2. Press **OPTIONS**.
3. Press "Dose Request Set-Up".
4. Choose desired Dose Cord Profile. (1=light flashes, 2=light on, 3=light off).
5. Press **CONFIRM** and press **START**.

Change PCA Pause Alarm Limits

1. Press **CHANNEL SELECT** key.
2. Press **OPTIONS**.
3. Press "PCA Pause Limits".
4. Choose desired parameter and enter value.
Note: If acceptable range value is not within hospital defined range a prompt is provided.
5. Follow on screen prompts.
6. Press **CONFIRM** and press **START**.

Access Drug Event History

1. Press **CHANNEL SELECT** key.
2. Press **OPTIONS** then press **DRUG EVENT HISTORY**.

Attaching and Detaching Dose Request Cord

To attach the Dose Request Cord:

Insert latching connector on the cord into Dose Request Cord attachment on the PCA module. The red marking on the latching connector should be aligned with the red marking on the Dose Request Cord attachment.

To detach the Dose Request Cord:

Hold the body of latching connector on the Dose Request Cord and pull straight away from the PCA module, without twisting or turning.

Detaching Module:

Use key to unlock door. Inside locate black lever and depress. At the same time, hold the PCA module and move the bottom of the PCA module sideways and away from the Alaris® PC Point-of-Care unit ("Alaris® PC unit").

Troubleshooting Alerts and Alarms (NOTE: During alarm state - PCA module no longer infusing).		
Alarm/Alerts	Meaning	Response
Check Syringe	<ul style="list-style-type: none"> • Plunger grippers opened during infusion and then closed. Infusion stops on affected channel. • Syringe barrel clamp opened during infusion and then closed. • Syringe plunger not captured while in idle mode. System alarms immediately to indicate potential siphoning condition. If security door is closed and syringe plunger is not captured, the system will immediately alarm. 	Securely lock plunger grippers, press CHANNEL SELECT key, and reselect syringe. Securely lock syringe barrel clamp and press RESTART key. Check for potential siphoning. Ensure administration set clamp (roller/slide) is in closed position. Securely lock plunger grippers over syringe plunger.
PCA Pause Alarm	PCA infusion has paused due to a decline in respiratory status.	Assess patient status per hospital policy. Press CONFIRM once patient status and monitoring values have been addressed. Press RESTART key per hospital policy. To view trigger of PCA Pause Alarm, Press CHANNEL SELECT , Press OPTIONS , Press DRUG EVENT HISTORY , Press Up/Down key to view text for monitoring value causing PCA Module to pause. Press EXIT and then START .
Drive Not Engaged	Drive system disengaged during operation.	Open and close plunger grippers. Ensure syringe is properly installed.
Max Limit Reached	Indicates the maximum amount of drug delivered based on Maximum Hourly Limit field.	To silence safety alarm tone, press SILENCE key. PCA module will remain silent. Alarm tone will re-sound if additional dose is requested during maximum limit reached alarm
Module Enforcement	A user message will appear on the screen when the PCA module is NOT located directly to the right of the Alaris® PC unit.	Remove the PCA module and attach directly to the right of the Alaris® PC unit.
Near End (NEOI)	Near End of Infusion and remaining VTBI will alternate on screen until syringe is empty. Alert message will scroll in channel message display on the PCA module. The PCA module remains functional and will continue infusion.	To silence safety alert tone, press SILENCE key. PCA module will remain silent until Syringe Empty alarm sounds.
Syringe Empty	Alarm message Syringe Empty will scroll in channel message display on the PCA module	To silence safety alarm tone, press SILENCE key. PCA module will remain silent approximately 2 minutes and will re-sound.

Alaris® EtCO2 Module Guide

Setting Alarm Limits:

1. Press **CHANNEL SELECT** key.
2. Press **LIMITS**.
3. Select limit parameter to be changed.
4. Enter a numeric value using keypad or up/down arrow keys.
5. Press **CONFIRM**.
6. Press **MAIN SCREEN**.

Trend Data:

1. Press **CHANNEL SELECT** key.
2. Select **TREND**.
3. Press **PAGE UP** and **PAGE DOWN** to navigate through trend data pages. To move cursor bar press up or down arrow keys.
4. Press **ZOOM** to change time period.
5. To exit press **EICO2** Main.
6. Press **MAIN SCREEN**.

PCA/EtCO2 Trend Data:

Note: This function requires use of Alaris® PCA module.

1. Press **CHANNEL SELECT** key.
2. Press **OPTIONS**.
3. Select **PCA/EICO2 Trend Data**. Navigate as described above in section titled Trend Data.

Change Waveform Height:

1. Press **CHANNEL SELECT** key.
2. Press **OPTIONS**.
3. Select **WAVEFORM HEIGHT**.
4. Select 60mmHg or 99mmHg.
5. Press **MAIN SCREEN**.

Change Waveform Time Scale:

1. Press **CHANNEL SELECT** key.
2. Press **OPTIONS**.
3. Select **WAVEFORM TIME SCALE**.
4. Select 5 or 10 seconds (for lower respiratory rates select 10 seconds).
5. Press **MAIN SCREEN**.

Pre-Silencing Alarm:

1. Press **SILENCE** to pre-silence monitoring alarms for 2 minutes.

Note: Infusion alarms will not be silenced.

Troubleshooting :







Alarms / Messages

High Priority Alarm	Meaning/ Causes	Response
No Breath Detected	<ul style="list-style-type: none"> • Patient is not breathing • Disposable is not properly attached to patient and/or device • Disposable is not detecting exhaled breath (shallow breath) 	<ul style="list-style-type: none"> • Assess patient, check disposable. • Consider using different disposable type • Follow hospital protocol actions.
High EtCO2	<ul style="list-style-type: none"> • Patient has true measurement of high EtCO2 • Fever or hypermetabolic state • Disposable is not properly attached to patient 	<ul style="list-style-type: none"> • Assess patient, check disposable • Compare value to baseline • Follow hospital protocol actions.
Low EtCO2	<ul style="list-style-type: none"> • Patient has true measurement of low EtCO2 • Disposable not correctly attached to patient or securely connected to module 	
High RR	Respiratory Rate is above the specified limit	
Low RR	Respiratory Rate is below the specified limit	
High FICO2	<ul style="list-style-type: none"> • Patient is inspiring exhaled CO2 or disposable not properly attached to patient • O2 mask may not be properly attached (if patient is wearing an O2 mask) • O2 flow to mask may have stopped • Drapes or covers may be over patient's face 	<ul style="list-style-type: none"> • Assess patient, check disposable, • Check O2 flow • Check mask and/or drape position • Follow hospital protocol actions
Disconnect Occluded Disposable	<ul style="list-style-type: none"> • Purging operation failed • The disposable is occluded or needs to be reset. 	<ul style="list-style-type: none"> • Try disconnecting disposable and then reattach. • If the device again reads DISCONNECT OCCLUDED DISPOSABLE, • Obtain and attach a new disposable.
Autozero (in progress)	The module is performing an autozero calibration. During this time no data is obtained	Monitoring will automatically resume when completed. No intervention is necessary.
Clearing Disposable	The module is trying to clear the clogged disposable. If cleared, the module will automatically resume monitoring.	If unable to clear, the module will go into a DISCONNECT OCCLUDED DISPOSABLE alarm.

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EtCO2 Waveform Examples

The following are examples of common EtCO2 waveforms. The waveform trends are examples only and do not represent all potential abnormal waveforms. Analysis of these waveform trends may provide an early indication of the noted possible causes. The associated possible responses are suggestions only and are not meant to replace current clinical practice or hospital protocols. Always consult hospital protocols. Abnormal waveforms are not always associated with alarms

Normal / Abnormal Waveform	Clinical Findings	Possible Causes	Possible Responses
Normal Waveform (Normal Ventilation): 35-45 mmHg 	<ul style="list-style-type: none"> • Normal findings, Normal EtCO2 A - B: Baseline period of no CO2. End of inhalation B - C: Exhalation begins, Begin rapid rise in CO2 C - D: Sustained exhalation, Alveolar plateau D - E: End of expiration, end tidal CO2 (EtCO2) value D - E: Inhalation, Rapid decrease in CO2 		
Hyperventilation 	<ul style="list-style-type: none"> • Rapid breathing, Low EtCO2 	<ul style="list-style-type: none"> • Increase in pain level or splinting area of pain • Increase in anxiety or fear • Respiratory distress or shortness of breath 	<ul style="list-style-type: none"> • Always follow hospital protocols • Treat cause of increased respiratory rate • Assess ABCs (Airway, Breathing, Circulation) • Decrease pain stimulus or encourage calm • Notify RT or MD
Hypoventilation 	<ul style="list-style-type: none"> • Slow breathing, High EtCO2 	<ul style="list-style-type: none"> • Over medication or increased sedation • Snoring or possible obstruction 	<ul style="list-style-type: none"> • Always follow hospital protocols • Assess ABCs • Assess sedation level • Stimulate patient • Notify RT or MD
Hypoventilation with Shallow Breathing 	<ul style="list-style-type: none"> • Slow breathing, Low EtCO2 followed by deep breath (see pointing arrow) 	<ul style="list-style-type: none"> • Over medication or increased sedation • Low tidal volume 	<ul style="list-style-type: none"> • Always follow hospital protocols • Assess ABCs • Maintain patient airway • Encourage patient to take deep breaths • Notify RT or MD
Partial Airway Obstruction 	<ul style="list-style-type: none"> • Irregular breathing, possible audible sound or snoring, EtCO2 may be above or below baseline 	<ul style="list-style-type: none"> • Poor head or neck alignment • Over medication or sedate 	<ul style="list-style-type: none"> • Always follow hospital protocols • Assess ABCs • Encourage patient to take deep breaths • Perform a head tilt or chin lift; Check position of cannula • Notify RT or MD
No Breath 	<ul style="list-style-type: none"> • Sudden loss of EtCO2 reading, Very shallow or no respiratory rate pattern observed 	<ul style="list-style-type: none"> • No Breath or Apnea • Very shallow breathing • Over medication or sedate • Displaced cannula 	<ul style="list-style-type: none"> • Always follow hospital protocols • Assess ABCs • Stimulate patient • Open airway • Notify RT or MD

References: 1. *Comprehensive Management of the Critically Ill Patient, Ed. 4, Saunders/Elsevier for Critical Care and Procedural Sedation - A Guide to Sedation, CP-DRUG - Needham, MA: Oxford Medical, 2003.*
 2. *ACCP Procedure Manual for Critical Care 4th Ed. (2010), Ed. Lynn-McHale, & Carlson, K.C., American Association of Critical Care Nurses (AACN) Ed. (2004) Ed. Under, L.D., Stuey, K.M. & Long, M.E., C.V. Mosby.*