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CADD®-Solis

Ambulatory Infusion Pump with Wireless Communications

Quick Reference Guide using Code or Key

Version 4.0 or higher

A	Battery Compartment	H	Keypad
B	Display	I	Cassette Latch
C	Indicator Lights	J	Cassette/Keypad Lock
D	USB Port	K	Power Button
E	Blue AC Power Light	L	Wireless Communication Module
F	AC Power Jack	M	Wireless Indicator
G	Remote Dose Cord Jack		

Setting up the pump for a new patient

Prepare the pump for a new patient

1. Confirm one of these power sources is inserted into the battery compartment: four new 1.5 volt AA alkaline batteries, rechargeable battery pack, or wireless communication module.
2. Begin without the cassette attached to the pump.
3. Press the power switch to turn the pump on.

Start new patient

4. Screen displays "Do you want to start a new patient?" Press Yes.
5. If your facility has chosen to use Profiles, the currently chosen Profile will display. Press Yes to confirm if the current Profile is correct, then go to Step 8. Press No to select a new Profile.
6. The "Select Profile" menu is displayed.
7. Scroll ↑ or ↓ to highlight the desired Profile. Press Select.
8. The "Select Therapy" menu is displayed.
9. Scroll ↑ or ↓ to highlight the desired therapy. Press Select.
10. Scroll ↑ or ↓ to highlight the desired qualifier. Press Select.
11. Scroll ↑ or ↓ to highlight the desired drug and concentration (or unit). Press Select.
12. Unlock the keypad using the security code or the pump key.
13. Confirm that you have selected the correct therapy, qualifier, drug and concentration [or unit]. Verify and press Yes.
14. "Review pump settings" displays. Press Review.
15. To edit, highlight a patient specific parameter, press Select. Scroll ↑ or ↓ to the new value then press Save.
    NOTE: If the desired value is outside the soft limit, confirm the soft limit override by pressing Yes.
    NOTE: The next bolus setting allows for a one time override of the intermittent bolus cycle as defined by the bolus interval.
16. Continue until all patient specific parameters have been reviewed and/or edited. Press Accept Value for each setting. A check mark appears next to each patient specific parameter you have accepted.
17. To change a patient specific parameter after you have accepted it, repeat step 15.
18. When all values are accepted, press Next.
19. "Cassette not attached. Attach cassette before starting pump." is displayed. This will not display if in step 2 a cassette or administration set was attached.

When programming for the new patient is complete

20. Attach, latch, and lock the cassette to the pump.
21. "Prime Tubing?" displays. Press Yes if priming is needed.
22. "Disconnect tubing..." displays. Press Prime. Press Stop Priming when complete.
23. "Continue Priming?" displays. Press Yes or No.
24. "Start pump?" displays. Press Yes when you are ready to begin the infusion. The pump begins running.

Changing a patient's current program while the pump is running

With the pump running, all parameters can be changed except reservoir volume

Edit the program

1. Scroll ↑ or ↓ to highlight the patient specific parameter you want to change. Press Select.
2. Unlock the keypad using the security code or the pump key.
3. The patient specific parameter is displayed. Scroll ↑ or ↓ to the new value then press Save.
   NOTE: If the desired value is outside the soft limit, confirm the soft limit override by pressing Yes.
   Repeat steps 1 and 3 for each patient specific parameter that you want to change.
   NOTE: If a security code was used to unlock the keypad, always relock the keypad after making a change by pressing the right soft key twice (Tasks, then Lock Keypad). If a key was used, turn the key clockwise to relock the cassette and keypad.
4. Verify that the keypad and cassette are locked.

Changing a patient's current program with the pump stopped

Stop the pump

1. Press Stop/Start.
2. "Stop Pump?" displays. Press Yes.

Edit the program

3. Scroll ↑ or ↓ to highlight the patient specific parameter you want to change. Press Select.
4. Unlock the keypad using the security code or the pump key.
5. The patient specific parameter is displayed. Scroll ↑ or ↓ to the new value then press Save.
   NOTE: If the desired value is outside the soft limit, confirm the soft limit override by pressing Yes.
   NOTE: The next bolus setting allows for a one time override of the intermittent bolus cycle as defined by the bolus interval.
   Repeat steps 3 and 5 for each patient specific parameter that you want to change.

When programming is complete

6. Press Stop/Start.
7. "Review pump settings" displays. Press Review.
8. Choose Accept Value to confirm the value is correct for the highlighted patient specific parameter or press Select to edit the highlighted parameter.

Changing a patient's current program with the pump stopped continued

9. Continue until all patient specific parameters have been reviewed, accepted and display checkmarks. Press Next.
10. "Start Pump?" displays. Press Yes.
    NOTE: If a security code was used to unlock the keypad, the keypad automatically relocks when the pump is started. If a key was used to unlock the cassette/keypad, use the key to relock the cassette/keypad lock.

Resetting the reservoir volume without changing the tubing

Changing the IV bag without changing the tubing

Stop the pump

1. Press Stop/Start.
2. "Stop Pump?" displays. Press Yes.
   Aseptically remove the empty IV bag from the tubing and attach the new IV bag.

Reset reservoir volume

3. Scroll ↓ until Reservoir Vol is highlighted. Press Select.
4. Screen displays "Reservoir Volume remaining: XXmL Reset?" Press Yes.
5. Unlock the keypad using the security code or the pump key.
6. The screen displays the current reservoir volume and a scroll range.
7. Press Select to reset the reservoir volume to the amount displayed in blue text or scroll ↑ or ↓ to adjust the value. Press Save.

When programming is complete

8. Press Stop/Start.
9. "Review pump settings" displays. Press Review.
10. Choose Accept Value to confirm the value is correct for the highlighted patient specific parameter or press Select to edit the highlighted parameter.
11. Continue until all patient specific parameters have been reviewed, accepted and display checkmarks. Press Next.
12. "Start Pump?" displays. Press Yes.
    NOTE: If a security code was used to unlock the keypad, the pump will automatically relock when the pump is started. If a key was used to unlock the cassette/keypad, use the key to relock it.
13. If you're not starting the pump immediately, press No when "Start Pump?" appears. Lock the keypad by pressing the right soft key twice (Tasks then Lock Keypad). Ensure that the cassette is also locked by turning the cassette/keypad lock clockwise to the locked position.

Clinician bolus

Pump must be running
1. From the home screen press Tasks.
2. "Give Clinician Bolus" is highlighted. Press Select.
3. Enter the clinician security code.
4. The screen displays the clinician bolus scroll range available. Scroll ↑ or ↓ until the desired value appears. Press Deliver.
   NOTE: If the desired value is outside the soft limit, confirm the soft limit override by pressing Yes.
5. Choose Stop Bolus anytime during delivery to cancel the bolus.
   NOTE: Never leave the pump unattended while on the Clinician Bolus Edit screen. You must press Deliver to deliver the programmed value or Cancel to leave the screen.

Viewing reports

Pump may be running or stopped to view reports
Pump reports should be cleared in accordance with institution policy

Option 1:
1. From the home screen press Reports. Scroll ↑ or ↓ to the desired report and press Select.
2. Press Back to return to the Reports menu, and then press Back again to return to the home screen.

Option 2:
1. From the home screen press Tasks. Scroll ↓ to View Reports and press Select. Scroll ↑ or ↓ to the desired report and press Select.
2. Press Back to return to the Reports menu. Press Back again to return to the home screen.

To clear Given and PCA dose counters
1. From the home screen press Reports. Scroll ↑ or ↓ to the "Given and PCA Dose Counters" report. Press Select.
2. Press Clear Given to clear Total Given and update the date/time stamp.
3. Scroll down to "PCA doses Given/Attempted."
   Press Clear Doses to clear Given/Attempted and update the date/time stamp.
4. Press Back to return to the reports menu, and then press Back again to return to the home screen.

Managing battery status

Battery State	Battery Image	Alarm Message
Fully or nearly fully charged	With AA batteries	N/A
~50% charge	With AA and AC adapter	N/A
Low battery <25% charge Pump emits 3 beeps every 5 min.	Rechargeable battery or Communication Module	*Battery low, replace battery* Recharge the wireless communication module or the rechargeable battery pack, or replace the 4 AA batteries soon.
Depleted battery Pump emits a continuous, variable-tone alarm Battery power is too low to operate pump Pump delivery operation stops	Rechargeable battery or Communication Module with AC adapter	*Battery depleted. Pump stopped.* - Install 4 new AA batteries or, - Install a fully charged rechargeable battery pack or, - Attach an AC adapter to charge the Communication Module battery In order to start delivery, charged batteries must always be installed, even when an external source of power is connected. If appropriate, restart the pump.
Shut down	Screen is black	Pump powers off

Changing the batteries

Stop the pump

1. Press Stop/Start.
2. "Stop Pump?" displays. Press Yes.
3. If the wireless Communication Module is not attached, press the power button to turn the pump off. Acknowledge "Power down?" by pressing Yes.
4. Remove the used batteries.
5. Insert the new batteries.
6. Press the power button to turn the pump on.
7. The screen displays "Do you want to start a new patient?" Press No.
8. Press Stop/Start to start the pump.
9. "Start Pump?" displays. Press Yes.

Note: If the wireless Communication Module is attached, plug the AC Adapter in AC Power Jack to recharge. The Communication Module battery life is 4 hours at 10 mL/hr with backlight intensity set to 3.

Screensaver

The screensaver allows the pump to conserve battery power when not in an edit mode and if no keypad buttons have been pressed for 30 seconds. The pump displays a blank screen. Press any button on the keypad, except the PCA (PCEA) dose key, to turn the display on

Wireless status, if Communication Module is installed

Wireless Off		Wireless Off (white indicator)
Wireless On		Wireless On, not associated with wireless access point (orange indicator)
		Wireless On, associated with wireless access point (orange indicator with green center)
		Wireless On, associated with wireless access point, and communicating with PharmGuard® Server software (green indicator with green center)

If pumps are not communicating with the PharmGuard® Server software or displayed on the Device Connections report, then locate the pump, verify the pump is powered on, and verify the wireless communications are turned on.

Alarms and troubleshooting

Alarm Conditions

High Priority Alarm
If the pump is running, it always stops when a high priority alarm is activated. Accompanied by a red screen, it continues until acknowledged or until the condition that triggered the alarm goes away.

Medium Priority Alarm
Does not stop the pump. Accompanied by an amber screen, it continues until acknowledged or until the condition that triggered the alarm goes away.

Low Priority Alarm
Does not stop the pump. Accompanied by a blue screen, the alarm automatically clears after 5 seconds or when the condition that triggered the alarm goes away.

Informational Message
Does not stop the pump. This message appears in the status bar. It is displayed for 5 seconds and is generally silent, requiring no acknowledgement.

Troubleshooting

Screen is blank and alarm is sounding

Alarm Priority High. The pump has lost power and is no longer delivering. The pump was delivering and the batteries were removed or the battery door was opened. Clear this alarm by replacing the batteries or closing the battery door, if not using the Communication Module, then turn the pump back on.

If using the Communication Module, attach the AC adapter, power on the pump, and leave the AC adapter attached until the Communication Module battery is charged. The alarm will continue to sound for a minimum of 2 minutes while the power is off, then the alarm will stop.

Air-in-line detected. Press "acknowledge" then prime tubing

Alarm Priority High. The pump is stopped and can not run. The air detector has detected air in the fluid path; the fluid path may contain air bubbles. Acknowledge the alarm. Then, if the fluid path contains air bubbles, close the clamps, disconnect the fluid path from the patient, and follow the instructions for priming to remove the air.

Current settings require high/standard volume set. Change cassette

Alarm Priority High. A high volume or standard volume administration set is required. The pump is stopped and will not run. Remove the administration set to continue.

Delivery Limit reached. Running at KVO rate.

Alarm Priority Low. The programmed delivery limit has been reached and the pump is delivering at a KVO rate. This alarm occurs when the continuous rate with PCA/PCEA or intermittent bolus with PCA/PCEA caused the delivery limit to be exceeded. Select Acknowledge to clear the alarm or the alarm automatically clears after 5 seconds.

Delivery Limit reached. Partial PCA (PCEA) dose delivered. Running at KVO rate.

Alarm Priority Low. The programmed delivery limit has been reached and the pump is delivering at a KVO rate. This alarm occurs when the delivery limit is exceeded while a PCA/PCEA dose is being delivered. Select Acknowledge to clear the alarm or the alarm automatically clears after 5 seconds.

When a *Delivery Limit* is reached, the pump status bar will display: "KVO = 0" if the continuous rate value is 0.

"Del Limit" if the continuous rate value is greater than 0. (KVO = 0.1 mL/hr with a standard set; KVO = 0.2 mL/hr with a high volume set.

Downstream occlusion. Clear occlusion between pump and patient

Alarm Priority High. The pump has detected high pressure, which may be resulting from a downstream blockage, kink in the fluid path, or a closed tubing clamp.

Delivery pauses and resumes if the occlusion is removed. Remove the obstruction or stop the pump to silence the alarm for 2 minutes, then remove the obstruction and restart the pump.

Reservoir volume low
Alarm Priority Medium or Low (Depending on how the alarm is programmed in Admin Settings). Level of fluid in the reservoir is low. Prepare to install a new reservoir, if appropriate.

Reservoir volume is zero. Pump stopped
Alarm Priority High. The reservoir volume has reached 0.0 mL. The pump stops and can not run. Acknowledge the alarm. Install a new fluid container. Reset or edit the value of the reservoir volume.

Upstream occlusion. Clear occlusion between pump and reservoir
Alarm Priority High. Fluid is not flowing from the fluid container to the pump, which may be resulting from a kink, a closed clamp, or air bubble in the tubing between the fluid container and pump. Delivery is paused and will resume if the occlusion is removed. Remove the obstruction to resume operation. The alarm clears when the occlusion is removed. You will be required to acknowledge this alarm after it clears if it has occurred and cleared more than 3 times within 15 minutes.

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