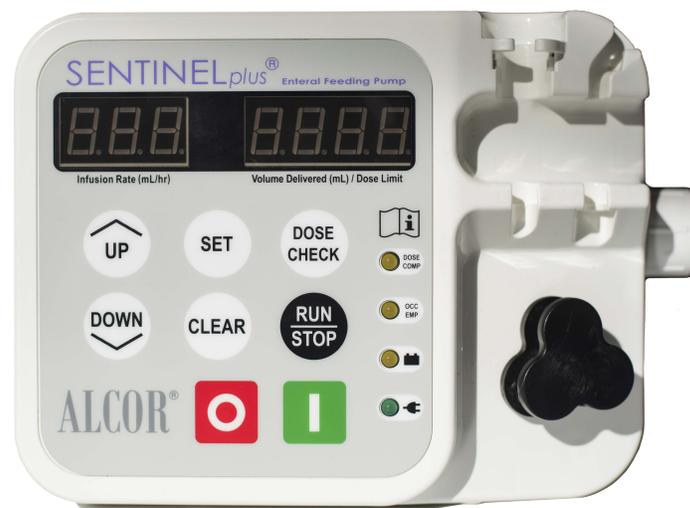


# SENTINEL<sub>plus</sub><sup>®</sup>

Enteral Feeding Pump

## *User Training Packet*



ENTERAL FEEDING SYSTEMS FROM

**ALCOR**  
SCIENTIFIC

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# SENTINELplus® Advanced Technology

The SENTINELplus® Enteral Feeding Pump is an improved version of our popular SENTINEL® product. The lighter, more compact design brings the same simplicity and reliability of its predecessor.



## DUAL DISPLAY

The bright LED display allows caregivers to simultaneously and conveniently view the infusion rate and volume delivered from a distance.



## ADVANCED MEMORY

The pump operating history is retained until manually erased, even in the event of power failure or when pump is powered down.



## DOSE CHECK

A record is kept of the accumulated amount of formula delivered over multiple feedings.



## SIMPLE ALARMS

Audible and visual alarms are easily differentiated.



## CLOVER-SHAPED ROTOR

The unique clover-shaped rotor allows for easy visual recognition of pump operation from a reasonable distance.

## ORDER INFORMATION

Cat.	Description	Packaging
S-3000-IU	SENTINELplus®, Enteral Feeding Pump	1 each

## SPECIFICATIONS

Mechanism	Rotary Peristaltic
Operating Range	5-295 mL/hour in 1 mL increments
Dose Limit	1-2000 mL in 1 mL increments 2000-9999 in 5 mL increments
Dose Accuracy	± 10% of selected flow rate with ALCOR sets
Occlusion Pressure	Does not exceed 15 psi
Battery	Battery backup 6 hours minimum at 125 mL/hr
Dimensions	15cm H x 20cm W x 9cm D
Weight	1.42kg
Power Options	All country-specific connectors available



# SENTINELplus® Administration Sets

The SENTINELplus® Enteral Administration Sets come in a variety of sizes and configurations to meet both patient and clinical safety needs. ENFit® is available for those ready to make the switch in an effort to reduce the risk of tubing mis-connections and improve patient safety.

## ENFit® CONNECTORS

ENFit® connections prevent the incidence of enteral device tubing mis-connections. The locking feature permits connectivity with only enteral specific connectors.

## PURPLE CAP AND DISTAL TIP

The purple pump set components allow visual recognition of enteral products.

## EASY INSTALLATION

Enteral pumps sets are easily loaded onto the pump.

## VARIOUS PRODUCTS

Different enteral feeding sets such as bag, gravity, and spike sets. Products range in size and function to meet the varying needs of the patient or end-user.

## 24 HOUR SINGLE USE

Single use, 24 hour hang time validation for each product, provides consistent delivery and reduces potential contamination.



## ORDER INFORMATION

Cat.	Description	Packaging
E-0500SP	Enteral Feeding Pump Bag Set, 500ml, NS	30 per case
E-1004SP	Enteral Feeding Pump Spike Set, NS	30 per case
E-1200SP	Enteral Feeding Pump Bag Set, 1200ml, NS	30 per case
E-1203SP	Enteral Feeding Gravity Set, 1200ml, NS	30 per case
EN-0500SP	Enteral Feeding Pump Bag Set, 500ml, ENFit®, NS	30 per case
EN-1004SP	Enteral Feeding Pump Spike Set, ENFit®, NS	30 per case
EN-1200SP	Enteral Feeding Pump Bag Set, 1200ml, ENFit®, NS	30 per case
EN-1203SP	Enteral Feeding Gravity Set, 1200ml, ENFit®, NS	30 per case

\*Sterile and DEHP free and avliable

# Front and Rear Components



## Priming The Set



- Open the package, remove administration set from pouch.
- Close roller clamp on set.



- Fill feeding container with desired formula.



- Close and secure cap around entire perimeter.
- Hang feeding container higher than patient's head.



- Insert drip chamber into enteral pump drip chamber bracket.



- Open roller clamp and prime tubing line with formula to end of distal tip.



- Close roller clamp to stop the flow of fluid.

## Installing The Set



- Drip chamber should already be inserted into drip chamber bracket.
- Route silicone tubing under pump rotor.



- Insert silicone tubing connector into seat adapter.



- Insert tubing into molded tube hook.



- Connect the distal tip connector to enteral feeding tube.
- Open roller clamp and program the pump.

# Programming The Pump

REFER TO OPERATION MANUAL FOR DETAILED INSTRUCTION  
SEE ALSO DIRECTIONS FOR USE ON SIDE OF PUMP

## TURNING PUMP ON

- Press green **ON**  button. Alarm sounds briefly and displays flash all 8's.

## SET INFUSION RATE

- Press **UP**  or **DOWN**  until desired infusion rate is displayed.

## SET DOSE LIMIT

- To set dose limit, press **SET** , then press **UP**  or **DOWN**  until desired dose is displayed.

**Note** If dose limit is not set (display = 0), the pump will run until container is empty or pump is stopped.

## BEGIN FEEDING

- Open roller clamp, press **RUN/STOP**  to begin feeding.

## CHANGING THE INFUSION RATE

- To change infusion rate, press **RUN/STOP**  to stop the pump.
- Press **UP**  or **DOWN**  to make necessary adjustment.
- Press **RUN/STOP**  to resume.
- The infusion rate is retained in memory.

**Note** If **UP**  or **DOWN**  is pressed without stopping the pump, an alarm will sound and the pump will continue running and there will be no change in infusion rate.

## VIEWING TOTAL ACCUMULATED VOLUME

- To view the total accumulated volume delivered, press **DOSE CHECK**



*Note* If pressed while running, the pump will stop momentarily.

## ADJUSTING DISPLAY BRIGHTNESS

- Press/hold **UP**  and **SET**  simultaneously to change bright or dim.



## LOCKING/UNLOCKING KEYPAD

- To lock/unlock keypad, while pumping, press/hold **UP**  and **DOWN**  simultaneously.



## TURNING PUMP OFF

- To turn the pump off at any time, press red **OFF**  button.



## CLEARING PUMP SETTINGS

- To clear pump settings, press **RUN/STOP**  to stop the pump.  
**Note** If **CLEAR**  is pressed while the pump is operating, alarm will sound and the pump will continue operation. Settings will remain unchanged.

### *Resetting Volume Delivered*

- To reset Volume Delivered to 0 - Press and hold **CLEAR**  the pump beeps once, pauses, beeps twice and the volume clears to 0.

### *Resetting Dose Limit*

- To reset Dose Limit to 0 - Press **SET** , then press and hold **CLEAR**  within 3 seconds. Pump will beep once, pause, beep twice, and display clears to 0.

### *Resetting Total Accumulated Volume Delivered*

- To reset total accumulated volume delivered to 0 - Press **DOSE CHECK** , then press and hold **CLEAR**  within 3 seconds. Pump will beep once, pause, beep twice, and display clears to 0.

### *Clearing Volume Delivered, Dose Limit, and Resetting Infusion rate to 5*

- To clear Volume Delivered, Dose Limit and reset Infusion Rate to 5 -Press and hold **CLEAR**  for 7 beeps total (approx. 10 seconds).

# Alarms and Indicators



## DOSE COMPLETE

- This indicator flashes and pump stops when the quantity of formula delivered reaches the dose limit setting. There will be two beeps with a flashing indicator. This is repeated every 2.5 minutes until action is taken.

## OCCUSION/EMPTY ALARM

- When the pump is running, this alarm indicator is activated and pump stops if:
  - The feeding container is empty
  - An occlusion has stopped delivery
  - The pump is left on SToP for more than 2.5 minutes
  - The drip chamber is installed improperly

## BATTERY INDICATOR

- When operating on battery power, this indicator shows solid yellow. Approximately 15 minutes before the battery is discharged, the light will flash, an alarm will sound. The pump will not restart if stopped at this time.

## AC POWER INDICATOR

- When plugged into AC power, this indicator always shows solid green indicating the battery is charging. The light remains on even when pump is turned off. The ALCOR power supply should always be plugged into an AC outlet during normal use.

## EXCESS FLOW

- The displays flash the text FLO FAST and a three-tone beep sounds whenever liquid flow rate exceeds preset limits. This can occur if the set is dislodged from the pump during operation or the drip sensor is blocked for more than 6 seconds. The alarm sounds at maximum volume and the pump stops.

## Troubleshooting Guide

SITUATION	POSSIBLE CAUSE	SOLUTIONS
Battery light flashes. After 15 minutes, pump stops, displays flash, & alarm beeps.	Battery charge is below performance level.	Plug cord into AC outlet for 10 hr for full recharge.
OCC/EMP alarm activates. Pump stops, alarm sounds, displays flash.	Container is empty.	Replace or refill.
	Occlusion is restricting flow.	Find point of occlusion: kinked tubing or closed roller clamp in pump set; feeding tube; container.
	Drip chamber not properly placed in drip chamber bracket; drops not being sensed.	Place drip chamber properly in the drip chamber bracket.
	Pump is on standby (STOP) more than 2½ minutes.	Press RUN/STOP or OFF.
Alarm sounds when attempting rate change. Pump does not stop.	UP, DOWN, or CLEAR will only work when pump has been stopped.	Press RUN/STOP once. Change rate. Press RUN/STOP again to restart
DOSE COMP alarm sounds. Displays flash.	Pump has delivered set dose.	Increase dose limit. Press RUN/STOP. Pump will run until dose is complete again.
		If feeding has been completed, press OFF. If feeding incomplete, set the dose limit to zero.
FLO FAST alarm sounds. Displays flash.	Pump set is dislodged. Tubing off of rotor.	Stop excess flow. Check set placement on rotor. Restart pump.
	Drop sensor blocked due to formula on drip chamber walls.	Clear drip chamber or replace pump set.
	Drop sensor blocked due to overfilled drip chamber.	Invert and reinstall drip chamber.

# Proficiency Test

## SENTINEL<sup>plus</sup> ENTERAL FEEDING PUMP PROFICIENCY TEST

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_  
 FACILITY: \_\_\_\_\_  
 CITY, STATE: \_\_\_\_\_



### PART A: DEMONSTRATE THESE PUMP/ADMINISTRATION SET SETUP STEPS

TASK	INITIAL
1. LOAD THE SET INTO THE PUMP AND PRIME THE LINE	_____
2. SET THE INFUSION RATE AT 50ML/HOUR AND DOSE AT 450ML	_____
3. VIEW TOTAL ACCUMULATED VOLUME THEN RESET PUMP TO 0	_____
4. CHANGE INFUSION RATE TO 75ML/HR AND THE DOSE LIMIT TO 750ML	_____
5. CLEAR THE VOLUME DELIVERED AND DOSE LIMIT, RESET INFUSION RATE TO 5	_____

### PART B: ANSWER THE BELOW QUESTIONS

1. Can a non-ALCOR SENTINEL<sup>plus</sup> administration set be used with the SENTINEL<sup>plus</sup> enteral feeding pump?  
 \_\_\_\_\_

2. What are 3 reasons that the OCC/EMP indicator might alarm?  
 \_\_\_\_\_

3. What is the alarm that signals the dose limit has been reached?  
 \_\_\_\_\_

4. What steps can you take to resolve an excess flow (FLO FAST) alarm?  
 \_\_\_\_\_

5. Why are ENFit<sup>®</sup> connectors are used?  
 \_\_\_\_\_

TRAINER/FACILITY MANAGER SIGNATURE  
 OF SUCCESSFUL COMPLETION: \_\_\_\_\_

PRINT NAME: \_\_\_\_\_

## Frequently Asked Questions

**Q.** How can I clean the pump?

**A.** With warm, soapy, water dampen a cloth or sponge. Clean the pump housing and rotor. Clean the drop sensor with soft cotton swabs dipped in isopropyl alcohol. For direction regarding contact with biohazardous material and cleaning methods not recommended refer to the SENTINEL*plus* Operator Manual. Follow other official procedures that may differ among institutions.

**Q.** What are the minimum and maximum flow rates?

**A.** 5-295mL/hr in 1 mL increments.

**Q.** What is the weight and size of the pump?

**A.** 1.42kg (3.13lbs), 15cm H x 20cm W x 9cm D (5.91in H x 7.87in W x 3.54in D).

**Q.** What kind of administration sets can I use with the SENTINEL*plus*?

**A.** Use only SENTINEL*plus* administration sets. Use of enteral administration sets other than SENTINEL*plus* sets will result in an alarm.

**Q.** What is the battery life of the pump?

**A.** Battery backup 6 hours minimum at a rate of 125mL/hr.

**Q.** Does the pump require routine calibration?

**A.** No, the SENTINEL*plus* does not require any routine calibration or adjustment procedures with its use. All functions of the formula delivery rate and alarms are software controlled and not adjustable through any service or normal activity.

**Q.** Can anyone service and repair the pump?

**A.** No, there are no user serviceable parts on the pump. Do not remove the back cover. Service may only be performed by qualified personnel only (ALCOR authorized service providers).

## Technical Support

**PHONE** Toll Free: (800) 495.5270

**EMAIL** [techservice@alcorscientific.com](mailto:techservice@alcorscientific.com)

# Quick Reference

## SET INFUSION RATE (LEFT DISPLAY)

-  Press green **ON** button.
-  or  Press **UP** or **DOWN** until desired infusion rate is displayed.
-  Open roller clamp, press **RUN/STOP** to begin feeding. (Pump will run until container is empty if no DOSE LIMIT is set.)

## ADJUST THE INFUSION RATE (LEFT DISPLAY)

-  Press **RUN/STOP** to stop the pump.
-  or  Press **UP** or **DOWN** to make necessary adjustment.
-  Press **RUN/STOP** to resume feeding.

## LOCK/UNLOCK KEYPAD

-  and  To lock/unlock keypad, while pumping, press and hold **UP** and **DOWN** simultaneously.

## SET DOSE LIMIT (RIGHT DISPLAY)

-  Press **SET** button.
-  or  Press **UP** or **DOWN** until desired dose is displayed.
-  Open roller clamp, press **RUN/STOP** to begin feeding.

## CHECK TOTAL ACCUMULATED VOLUME (RIGHT DISPLAY)

-  To view the total volume delivered, press **DOSE CHECK** (if pressed while running, the pump will stop momentarily).

## ADJUST DISPLAY BRIGHTNESS

-  and  Press and hold **UP** and **SET** simultaneously to change bright or dim.

## RESET VOLUME DELIVERED

-  To reset volume delivered to 0, press and hold **CLEAR** until the pump beeps once, pauses, beeps twice, and the volume clears to 0.

## RESET DOSE LIMIT

-  To reset DOSE LIMIT to 0, press **SET**.
-  Press and hold **CLEAR** within 3 seconds. Pump will beep once, pause, beep twice, and display clears to 0.

## RESET TOTAL ACCUMULATED VOLUME DELIVERED

-  To reset total accumulated volume delivered to 0, press **DOSE CHECK**.
-  Press and hold **CLEAR** within 3 seconds. Pump will beep once, pause, beep twice, and display clears to 0.

## RESET VOLUME DELIVERED, DOSE LIMIT, AND INFUSION RATE TO 5

-  Press and hold **CLEAR** for 7 beeps total (approximately 10 seconds).

## TURNING PUMP OFF

-  To turn the pump off at any time, press red **OFF** button.