

BeneFusion eSP (PCA)

Patient-controlled analgesia

Data Sheet



Physical Specifications

Weight	≤ 1.6kg
Size	≤ 257x 150 x73mm
Screen	3.5 inch touchscreen TFT color LCD, 200x400 pixels
Brightness	1-8 levels, adjustable
Display	Drug name, Bolus Dose, Lock time, Rate, Drug Concentration, Effective/Actual times, Volume, Pressure, Battery, Time, Mode, Syringe size

User friendly

Re-usable patient hand set and locking facility included

Programmable to provide patient controlled intravenous and epidural analgesia and regional analgesia infusions.

PCA parameters

PCA infusion modes: Loading Dose+ PCA Bolus, Continuous Infusion + PCA Bolus, Loading Dose + Continuous Infusion + PCA Bolus, Single PCA Bolus
PCA Bolus Dose Unit: ml, Dose (ng, ug, mg, g, mU, U, KU, EU, mmol, mol, mcal, cal, kcal, and mEq)
PCA Bolus Dose: 0.01-99.99ml; 0.001 to 999.9 (for other units)
Lock time: 1-999min
Drug Conc.: 0.001-9999.99
Bolus Limit: 0.01ml/1h to 999.9ml/1h; 0.001 to 999.9 (for other units)
Bolus Rate: 0.01-2300ml/h
Loading Dose: 0.01ml to 9999.99 ml
Loading Rate: 0.01-2300 ml/h
Continuous Infusion Rate: 0.01-2300 ml/h
Security: with screen lock and drive lock
Password protected

General Specifications

Accuracy	≤ ±1.8%
Mode	PCA Mode, Rate mode, Dose Mode, Dose Time Mode, Time mode, Sequential Mode, Intermittent Mode, Loading Dose Mode, Ramp Mode, Micro-infusion Mode
Flow rate	0.01-2300ml/h
Increment	0.01ml/h(0.01-99.99ml/h); 0.1ml/h(100.0-999.9ml/h); 1ml/h(1000-2300ml/h)
Preset volume (VTBI)	0.01 ml - 9999.99 ml, increment: 0.01mL
Preset time	00:00:01-99:59:59, adjustable
Accumulated volume	0.00 ml - 99999.99 ml
KVO	0.01 to 50ml/h; increment: 0.01ml/h
Purge rate	0.01-2300ml/h
Bolus rate	0.01-2300ml/h (automatic or manual)
Occlusion detection	50-1500mmHg (15 levels selectable, respectively are 50, 150, 225, 300, 375, 450, 525, 600, 675, 750, 825, 900, 975, 1050, 1125mmHg, 50/60ml syringe maximum 1125mmHg) default is 450mmHg; Pre-alarm: an alert will pop out when the pressure is going up Auto-restart: On/Off, restart the infusion when the pressure that caused the occlusion alarm is reduced. 4 units of pressure selectable: mmHg/kPa/bar/psi
Anti-bolus	Unexpected bolus reduced when the occlusion occurs
Auto-lock time	1 - 5 minutes selectable; ON/OFF switchable
Drug library	Up to 5000 drugs; 30 categories; support color-coding drug name

History log	Up to 3500 records, without time limitation
Volume collection	Available in 4 methods: 24H total, current total, period, timing volume
DERS (Dose Error Reduction System)	Available; definition of dose limits; automatic alarms when reaching dose limits

Syringes

Compatibility	OEM calibrated syringes 1/2/3/5/10/20/30/50/60ml; automatic recognition of syringe size
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Alarms

Type	Audible and visual alarm
2 Levels	High: Occlusion/ Syringe empty/ Syringe Disengaged/ Plunger Grippers Error/ PCA Cable Detached/ Battery Depleted/ VTBI Complete/ KVO Finish/ Relay Invalid/ System Error/ No Syringe Low: KVO Running/ Battery in Use/ Battery Error/CMS/eGW Disconnected/ Standby Time Expired/ Dock Connection Interrupted/ System Time Error/ Relay Invalid Soon/ Time Near End/ Reminder/ Low Battery/ Syringe Near Empty
Sound volume	1-8 levels selectable, default is level 4
Reminder	1-5 minutes selectable; ON/OFF switchable
Mute alarm temporarily	2 minutes

Connectivity

Communication	Wired/wireless
USB	Support drug library import, patient information loading, patient data export, history record export, calibration data import/ export
Multifunctional connector	RS232; nurse call connector; DC adapter
Integration	Synergy with patient monitor Connect with BeneFusion nCS infusion central station Connect with BeneVision Central Monitoring System
Barcode scanning	Input patient information by scanning barcode

Battery

Operating time	≥ 5 hours at 125ml/h (≥ 12 hours at 125ml/h for smart battery)
Charging time	≤ 5 hours to full capacity (≤ 6 hours for smart battery)
AC power in use indicator	Automatically charged when the unit is connected to a live A.C. supply
Battery automatically provide operate when AC power is disconnected	AC power/Battery indicator.
Over-charging and over-discharging protection	

Power Supply

Voltage 100-240 V~; frequency 50/60Hz; current 0.5-0.21A

Work Environment

Temperature	5-40°C for operating; -30-70 °C for storage
Relative humidity	15-95% for operating; 10-95% for storage
Atmosphere pressure	57.0-107.4 kPa for operating; 16.0-107.4 kPa for storage
Classification	Type CF, Class I, IP33
Stackability	Supported with stack rack, maximum of 3 pumps can be stacked
Working altitude	No higher than 4000 meters

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