

# HW-EM218 INFUSION PUMP



**Healthward**`

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# HW-EM218

# FEATURES AND HIGHLIGHTS

# Technical parameters

- Compatible syringe specifications 5/6ml, 10/12ml, 20ml, 30/35ml, 50/60ml.
- Injection speed range 2/3ml syringe: 0.01~160ml/h 5/6ml syringe: 0.01~400ml/h 10/12ml syringe: 0.01~800ml/h 20ml syringe: 0.01~1600ml/h 50/60ml syringe: 0.01~3000ml/h 30/35ml syringe: 0.01~2400ml/h
- Minimum stepping speed

0.01 ml/h

- BOLUS injection speed and volume setting range 2/3ml syringe: 0.01~160ml/h, 0.1~2ml 5/6ml syringe: 0.01~400ml/h, 0.1~5ml 10/12ml syringe: 0.01~800ml/h, 0.1~10ml 20ml syringe: 0.01~1600ml/h, 0.1~20ml 30/35ml syringe: 0.01~2400ml/h, 0.1~30ml 50/60ml syringe: 0.01~3000ml/h, 0.1~50ml
- Minimum stepping speed for BOLUS

0.01 ml/h

- Rapid infusion speed
   2/3ml syringe: 0.01~160ml/h
   5/6ml syringe: 0.01~400ml/h
   10/12ml syringe: 0.01~800ml/h
   20ml syringe: 0.01~1600ml/h
   30/35ml syringe: 0.01~2400ml/h
   50/60ml syringe: 0.01~3000ml/h
- Rapid infusion volume setting range
   0 to the maximum capacity of the current syringe.
- KVO (Keep Vein Open) speed range and stepping (In manual mode)
   Adjustable from 0.01 to 30ml/h, with a minimum stepping of 0.01ml/h
- KVO (Keep Vein Open) volume setting range (In manual mode) 2/3ml: 0.01~0.2ml
   5/6ml: 0.01~0.2ml
   10/12ml: 0.01~0.2ml
   20ml: 0.01~0.5ml
   30/35ml: 0.01~0.5ml
   50/60ml: 0.01~1ml
   Minimum stepping for all: 0.01ml.
- Preset volume setting range
   0 to 9999.99ml, with a minimum increment of 0.01ml. When the preset volume is set to 0, it indicates no injection volume limit.
- Cumulative injection volume range
   0 to 9999.99ml, with a minimum increment of 0.01ml.
- Flow rate accuracy

Within  $\pm 1.8\%$  (after calibration)

Mechanical accuracy error

Within  $\pm 0.5\%$ .

Pressure units

MPa, kPa, mmHg, inH2O, psi, mbar.

Blockage alarm pressure levels
 1-16 levels (10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150, 200) kPa. Levels 14, 15, and 16 are not applicable for 50/60ml syringes.





#### Alarms

Near-empty alert, syringe depletion alert, completion alert for pre-set volume injection, approaching completion alert for pre-set volume, extension tube detachment warning (optional), KVO (Keep Vein Open) completion alert, pre-warning for injection blockage (optional), standby task completion alert, injection blockage alert, syringe detachment warning, incorrect syringe installation warning, forgotten operation alert, low battery warning, empty battery warning, operation anomaly alert, equipment malfunction alert, system power loss alert, battery not connected warning, communication interruption alert.

- The maximum injection pressure generated by the device is within 250 kPa.
- Maximum injection volume under a single fault condition is 0.2 ml.
- Power Supply: AC100-240V, 50/60Hz
- Device Input Power: 25VA
- Fuse: Specification T2A/250VAC
- Safety Classification: Class I, Type CF, continuous
- operation device
- Enclosure Protection Level: IPX2
- Operating Environment Conditions
   Temperature: +5°C to +40°C, Relative Humidity: 20% to 90%,
   Atmospheric Pressure Range: 54.0 kPa to 106.0 kPa
- Transport and Storage Environment Conditions: Temperature: -20°C to +55°C, Relative Humidity: ≤95%, Atmospheric Pressure Range: 50.0 kPa to 106.0 kPa
- Screen Size: 3.5 inches touchscreen display
- Dimensions: 376mm (L) × 221mm (W) × 137mm (H)
- Net Weight: Approximately 2.2kg
- Gross Weight: Approximately 3.4kg

## **Functions**

- Alarm Function
   Audio and visual alarms, ensuring safety and reliability.
- Power-On Self-Test System self-check is completed upon startup, ensuring safe operation.
- Low Noise
   Utilizing German-imported ultra-silent motor drive IC and Japanese-imported motors, ensuring low noise and minimal vibration.
- 9 selectable injection modes (including TIVA), meeting the diverse injection needs of different departments and medications.
- High infusion accuracy ≤+1.8% (after calibration), low mechanical errors
- Perfect compatibility with 2~60mL syringes of all models, adapting to various clinical injection requirements.
- Supports WiFi and wired networking to the infusion central station, enabling integration with the hospital's HIS/CIS system.
- Automatic infusion data collection and centralized monitoring, enhancing efficiency and providing comprehensive functionality.
- Patient data management feature, allowing input of patient data for more efficient and streamlined nursing operations.

## Design

Compact and exquisite appearance, convenient operation, space-saving design.



#### Screen Design

3.5-inch resistive touchscreen combined with button controls, offering a dual-control mode for simplicity and practicality.



#### Handle

Distinctive U-shaped handle design for easy transportation.



#### Pull Rod Push Block

The push block is used to secure the syringe and drive the piston and plunger operation. The pull rod is used to secure the syringe's outer jacket, ensuring a tight fit of the syringe.



# Working principle

Used in conjunction with matching syringes, this device employs a microprocessor for precise control of a stepper motor. Through a mechanical drive, it generates linear thrust to propel the plunger of the syringe for injection. The infusion pump is equipped with various sensors to accurately control the injection speed and volume of disposable syringes, monitor the injection process, making it a high-precision intelligent infusion pump.



#### **Casing Material**

Injection molded using high-quality ABS engineering plastic molds for a brand-new finish.



### Internal Structure

Utilizing an aluminum-magnesium alloy frame, this product features stability and reliability with excellent shock resistance, providing ease of mobility.



#### **Fixed Stand**

Sturdy screw-fixed bracket that allows the infusion pump to be securely mounted on a wall or pole.



#### **Battery**

Built-in 11.1V rechargeable lithium battery pack with a capacity of 2600mAh. With a fully charged new battery, the infusion pump can continuously operate for over 10 hours at a rate of 5ml/h or 8 hours at a rate of 3000ml/h (above 2600mAh). External DC power supply, with an input voltage of 10-16V and input current of 1.25-0.75A.

















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