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**Clever Pumps, Priced Right!**

NEW ERA
Pump Systems Inc.
SyringePump.com

New Era pump offers the best bang-for-the-buck when it comes to syringe pump. The different ways of securing the syringe are nice features rarely found on other brands. NE-1000 also offers both infusion and withdrawal functions which could be helpful when negative pressure is needed.

It has been a robust piece for introducing reagent into microfluidic devices and can sustain fair amount of back pressure (100 psi) without stalling. If the pump does stall, their is a safety feature to turn off the motor so the belt won't slip, which makes the pump more durable. They also have other pump selections for multiple syringe or customized programmed pumping.

Overall New Era makes solid and versatile syringe pumps that should be known to anyone who is looking for one.

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## NE-1000 Family Detailed Features

### Setup

### Simple Features

### Production Productivity Features

### Pump Programming

### Bi-Directional RS-232 Interface

### TTL Logic Control Interface

## Setup as easy as 1-2-3-4!

1. Set syringe diameter.

2. Set dispense rate.

3. Set dispense volume.

4. Press start.

## Simple Features

- Infuses and withdraws
- Selectable pump rate units: µl/hr, µl/min, ml/hr, ml/min.
- Change pumping rate and direction while pumping.
- Dispense a specified volume.
- Syringe purge mode will infuse or refill syringe at top speed to purge air from the line or to fill the syringe.

- Audible buzzer can be programmed to alert when an alarm condition occurs or the pumping program completes.
- Power failure mode restarts a pumping program interrupted by a power failure.
- Stall detection stops pump when the motor's operation is impeded (not on NE-500 model)
- Non-volatile memory restores all setup parameters and the pumping program, on power up.
- Elastomer raised keypad with optional beeping whenever the keypad is pressed.
- CE certified
- Worldwide power supplies available

## Production Productivity Features

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- Pre-program a set of production dispensing protocols. The operator then selects the required dispense protocol
- Keypad Lockout: Prevent unauthorized or accidental changes to the settings by requiring a Lockout Disable key to be inserted to change settings.
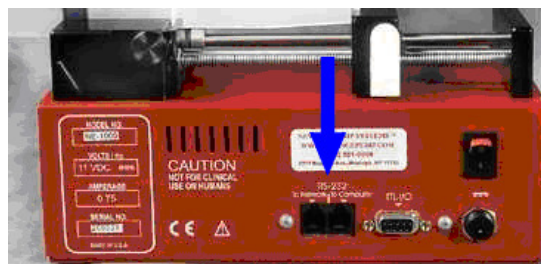
## Pump Programming

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- Up to 340 programmable phases
- Enter programs from the keypad or from a computer.
- Download or upload pumping programs from or to a computer. Store dispensing

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- Download or upload pumping programs from or to a computer. Store dispensing programs in a file on your computer, then download them to one or more pumps. Specify in the file to send a different pumping program to each pump in the pump network.
- Pre-program dispense volumes. Each volume can be different.
- Automatically change pumping rates or pumping direction.
- Ramp up or down the pumping rate.
- Set timed delays between dispenses.
- Automatically pause the program and wait for the user to continue the dispense.
- Synchronize dispenses with other equipment or pumps to change pumping rates in reaction to a sensor or signals from other pumps.
- Send logic signals to other equipment. Change pumping rates in reaction to a sensor.
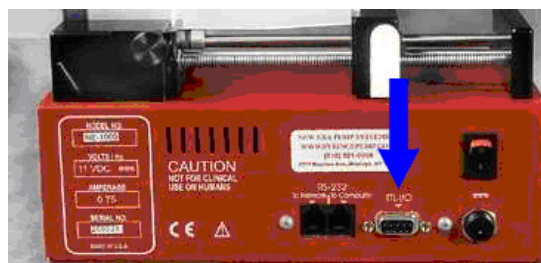- Program the audible alarm to beep at any time to alert the operator.

## Bi-Directional RS-232 Interface                                          t p



- Network up to 100 pumps from a single communications port on a computer. Baud rates up to 19200.
- Free terminal emulator program allows communications with syringe pump.

- Directly control one or more pumps from a computer, including setting the pumping rate, direction and volume. Set the operational and setup configurations. Also the TTL interface can be queried and the programmable output set.
- Using a computer, each pump in the pump network can be individually controlled and monitored. Or, the computer can download a new pumping program to each pump which would automatically reconfigure the dispensing system for a new job.
- Downloading control programs to the pump would unload computer overhead to the pump. computer resources could then be used elsewhere while the pumps operate independently.
- **2 modes of communications: Basic and Safe**
    - **Basic:** Basic master-slave interface. Easy to implement. Can communicate from any terminal emulator.
    - **Safe:** A reliable interface for a real-world environment.
- High quality interface which detects communication errors via a 16 bit CCITT CRC.
- The pump will automatically transmit an alarm packet when a pump alarm occurs. For instance, if the pump stalls or resets, a message is immediately sent to the computer.
- A configurable communications time-out will stop the pump and alarm if the communications link is broken.
- Packet inter-character time-out to recover packet synchronization after communication glitches.

- Software Developer friendly communications protocol.

- Consistent and well defined communications packets.
- Constant start and end characters.
- Packets structured to be easily parsed

## TTL Logic Contol Interface



- Control the pump from a foot switch or timer.
- Output signals can be used to switch a valve from an output to an input reservoir.
- Keypad Lockout: Prevent unauthorized or accidental changes to the settings by requiring a "Lockout Disable" key to be inserted to change settings.
- Pumping direction control
- Programmable output signal
- Programmable responses to input signals
- Configurable start and stop trigger:
    - Start or stop the pump on each contact closure to ground. For example, a foot switch.
    - Start the pump on closure to ground and stop the pump on opening the connection. For example, a timer relay that starts the pump whenever closed.

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connection. For example a timer relay that starts the pump whenever closed and stops the pump whenever open.
  - Only start the pump on each contact closure to ground. For example, a laboratory animal trained to press a lever can receive a drug dosage from the pump and the pump will not stop or deliver another dosage until it is permitted by the pumping program entered by the user

- Configurable trigger input:
  - Edge trigger: Starts or stops the pump, such as from a foot switch
  - Level trigger: Start or stops the pump, such as from a timer or relay control
  - Start only trigger: Edge trigger will only start the pump, such as from a lab animal trained to press a lever to receive a dosage.