Fluidics Gradient Research Pump Controller
Precision Low-Resonance Stepper Motor Controller

Design Note #140

Research scientists depend upon accurate fluidics controllers. Precision controllers from OTEC lead the way.

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"You nailed it! OTEC's implementation of both the motor controller hardware and the corresponding software was spot on."

–Application Chemist

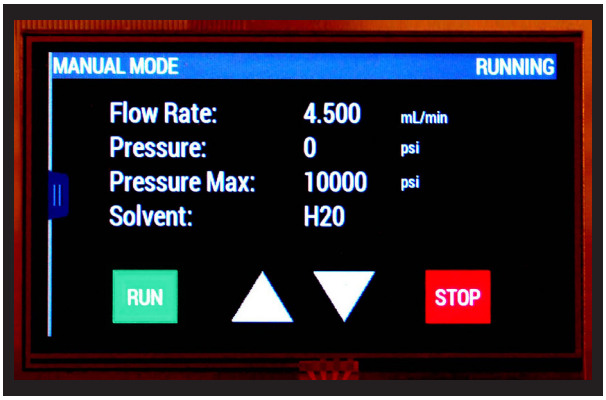
–Fluidics Control Division

Fluidics Gradient Research Pump Controller

Fluidics pump controllers that dispense precisely controlled milliliter and microliter amounts of solvents at high pressures requires attention to detail and stepper motor know-how. Operating over time periods from seconds to hours, stepper motor rotational rates must be consistent and controlled to high precision. Control of single and dual pump systems with pressure and pump compensation factors makes this controller a researcher's first choice. Dual pump operation with precision gradient controls add to system complexity.

STM32F7xx Processor and TouchGFX Graphics

The STM32F7 class ARM Cortex-M7 based processor provides real time control of stepper motor functions and performs the graphical user interface functions. Additionally, the STM32F7 performs peer-to-peer communications with a tandem unit. Running OTEC's proprietary non-preemptive real time operating system, graphics, stepper motor control, user input, peer communications and external controls Inputs are all integrated into an efficient, reliable, embedded system.

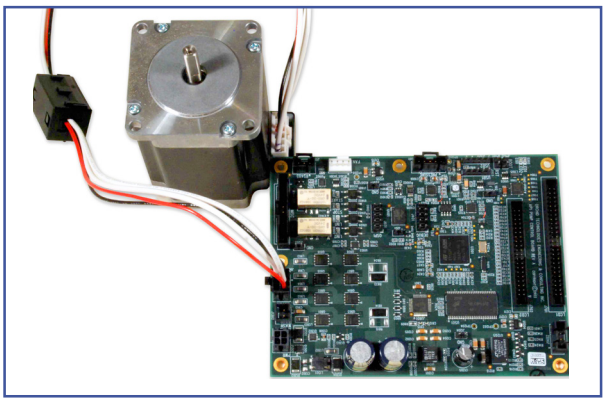


Trinamic Stepper Motor Controller

Stepper motor control makes use of a Trinamic high performance stepper motor controller. External power electronics from OTEC provides stable and reliable motor drive. Low resonance stepper motor control with a minimum of wasted energy allows quiet, low temperature component operation.

Orchid Technologies: Stepper Motor Controller

The development of custom electronic products for our OEM clients is OTEC's entire business. The design of low-resonance, precision stepper motor controllers with rapid design cycles, demanding technical requirements, and unforgiving schedules sets us apart. Call Orchid Technologies today!



ORCHID TECHNOLOGIES
ENGINEERING & CONSULTING, INC.

Custom Engineering From Concept to Production

147 Main Street, Maynard, MA 01754 www.orchid-tech.com 978-461-2000 fax: 978-461-2003