

Fluidlink®

i400 Intelligent Laboratory Pump

PERISTALTIC FLUID DELIVERY SYSTEM
POWERFUL. FLEXIBLE. INTUITIVE.



labdynamics®

TOUCHABLE SCREEN

UNTOUCHABLE FEATURES

POWERFUL

Unmatched Flow, Speed,
and Dosing Control

FLEXIBLE

Easily adaptable to your ever-
changing process demands

INTUITIVE

Informative touch screen enhances
process visibility and ease-of-use

NETWORKED

Modbus and EtherNet/IP
connectivity built-in

PHARMA 4.0

Designed to connect with the next
generation of lab automation

INNOVATIVE

Complex tasks made simple with
Stored Dispensing Sequences,
Remote Control access, and many
other features unique to the i400



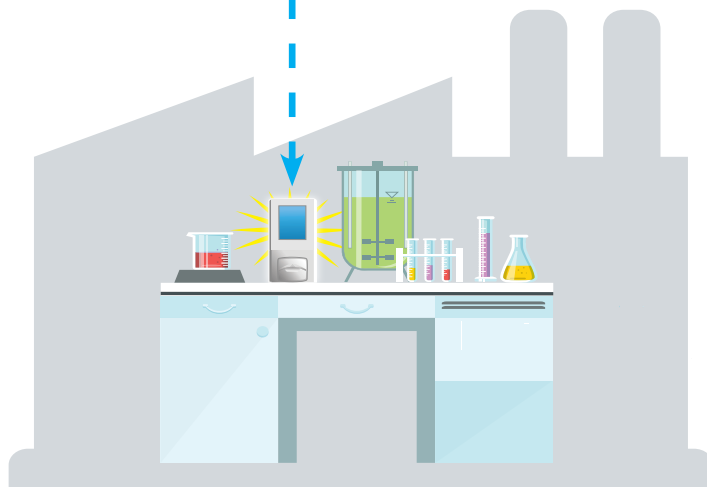
REMOTE CONTROL

SAVE A TRIP TO THE LAB WITH **fluidlink**.io™

Operate the i400 from anywhere, via a secure web browser connection to the FLUIDLINK cloud. Enjoy 24/7 remote access to start, stop, and monitor your pump's activity, all while saving inconvenient trips to the lab on weekends and after hours.

By combining FLUIDLINK.IO connectivity and the i400's ability to use an integrated scale, you'll be able to view your supply levels from anywhere. Use the Alarm and Notification features of FLUIDLINK.IO to proactively alert you when it's time to replenish your fluid supply, and ensure uninterrupted delivery.

The online tools at FLUIDLINK.IO allow you to author, launch, and manage dispensing sequences, and perform numerous other tasks as you would when interacting directly with the touch screen interface. Use the online tools to distribute copies of saved dispensing sequences from one pump to another, allowing you to easily duplicate complex instructions from one i400 to all the pumps in your lab.

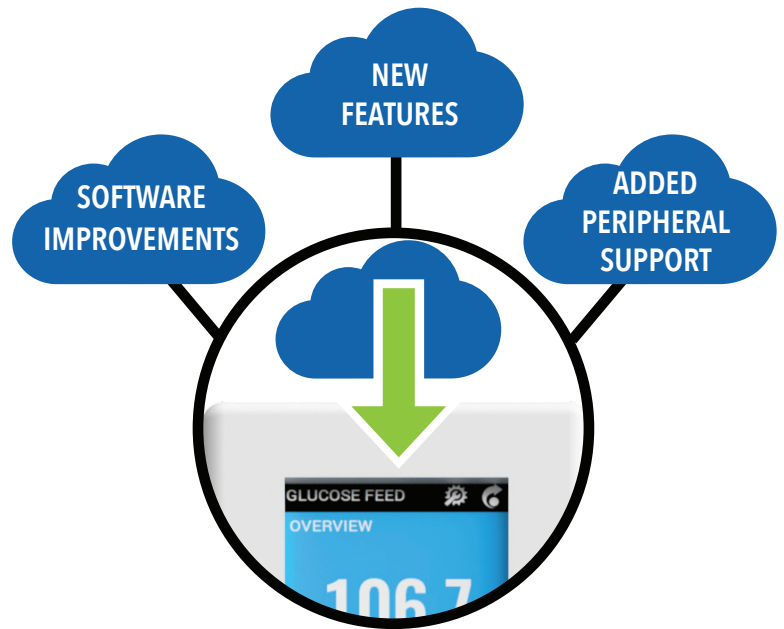


SOFTWARE UPDATES

INVESTMENT PROTECTION UNLIMITED FEATURES

The FLUIDLINK line of products employ state-of-the-art functionality that's years ahead of the competition, however, even the best products have room for improvement. That's why the i400 Operating System can be updated right over the internet. This powerful feature allows you to take advantage of newly added functionality, and brings future support for an emerging market of 3rd-party peripherals.

The i400 is an easy choice for solving the most demanding fluid delivery challenges - today, and for years to come.



INTELLIGENT

THE PUMP WITH A MIND OF ITS OWN

The i400 delivers dozens of features, most never before seen in a laboratory pump - features only made possible by the combination of expert engineering, powerful software design, and the industry's most advanced pump controller architecture.

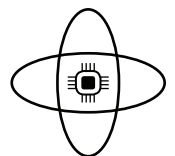
Some notable features include:

Unlimited Scheduling Run multiple independent schedule-driven dispensing sequences, and trigger any series of linked sequences for infinite possibilities.

Instant Go To Flow Rate Immediate delivery of a precise flow rate without ramping or waiting on weight scale feedback.

Exact Dosing Dynamically adjusts acceleration and deceleration curves based on tubing calibration, never overshooting your target!

The i400 approaches every feature of a peristaltic pump with a fresh perspective, maintaining the goal of making the operators work easier, faster, and more accurate. Everything from simple priming to even the most advanced dosing strategies is made more effortless by a powerful yet intuitive user interface.

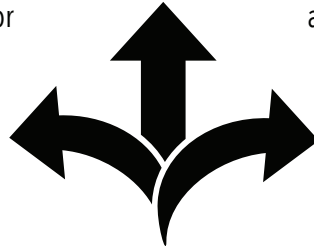


CONNECTED

INDUSTRIAL NETWORKING BUILT-IN

The i400 is the only laboratory pump that supports simultaneous mixed-mode operation for Attended, Industrial, and Remote modes - right out of the box!

Modbus RTU, Modbus TCP/IP, and EtherNet/IP (Industrial Protocol) come built-in, and future software updates will enable the same hardware to support additional



protocols - at no additional cost. Network connections are made via waterproof ports in the rear of the device, and the product ships with a set of male connectors to make installation a breeze.

Each operating mode delivers the full range of speed, flow, and dosing control, all without compromising control resolution (unlike outdated 4-20 mA solutions).

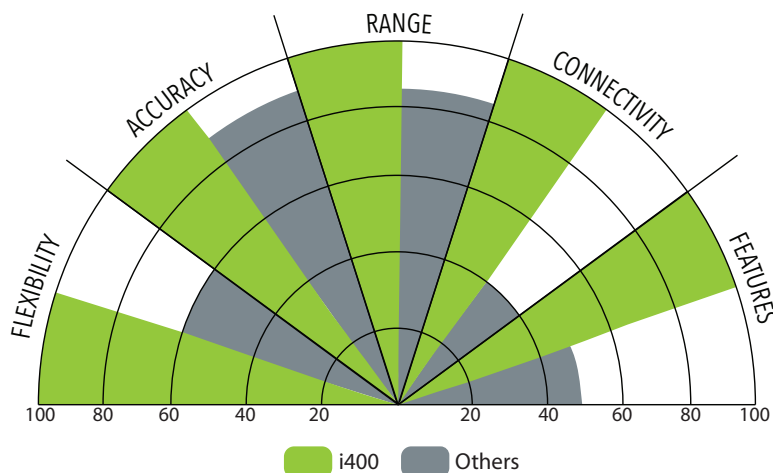
PERFORMANCE

UNBEATABLE ACCURACY INCREDIBLE RANGE

Whether you're delivering a bolus as small as 0.1 mL, or require a rapid continuous flow rate of 350 mL/min - the i400 has you covered.

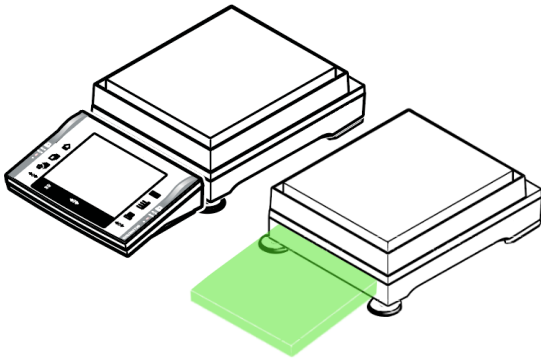
Control speeds from 0.01 - 400 rpm [$\pm 0.5\%$ FS] with 0.01 rpm resolution - a remarkable 40,000:1 turndown ratio!

Deliver dose amounts as low as 0.1 mL [± 0.005 to ± 0.015 mL based on tubing bore & scale integration]. The i400 automatically controls delivery speeds based on stored calibration data, and doses efficiently and at the proper speed for your application.



SCALE INTEGRATION

UNPARALLELED ACCURACY
REDUCED COSTS
SMALLER FOOTPRINT



Connect a laboratory weight scale* to enable a multitude of performance enhancing and time saving features unique to the FLUIDLINK line of products.

Turn the i400's touchscreen into an operator interface for your scale! Using "headless" scales (without a bulky display or button interface) greatly reduces costs, and lets you reclaim a significant amount of useable benchtop space.

The i400 stores an unlimited quantity of both factory-installed and user-created tubing calibrations, and operates with even greater delivery accuracy when linked to a dedicated weight scale. Use of an integrated scale enables a number of exclusive features, including:

"One Step Calibration" The easiest way to create a unique tubing calibration! Leave the i400 unattended as it executes a series of complex calibration routines, all with the simple press of a few buttons.

"Disruption Dampening" Prevent accidental operator disruptions from creating unwanted interference with your scale measurement. The i400 employs a proprietary disruption dampening algorithm that filters out bad readings caused by accidental bumps.

*Weight scale must support MT-SICS Command Protocol and be equipped with an RS-232 communications interface.

Specifications

PERFORMANCE

Speed Control	0.01 - 400 rpm ($\pm 0.5\%$ FS) with 0.01 rpm resolution
Turndown Ratio	40,000:1
Flow Rates	0.005 to 350 mL/min at 30 psi (2 bar)
Minimum Dose Amount	0.1 mL (± 0.005 to ± 0.015 mL based on tubing bore)
Tubing Size	0.5/1.6mm to 4.8/1.6mm (bore/wall)

COMMUNICATIONS

Modbus RTU	RS-485 (half duplex) Modbus App. Protocol Spec. v1.1a
Modbus TCP/IP	ODV Conformance Tested
EtherNet/IP (Industrial)	ODVA Conformance Tested (ENetCT Ver A3.5)
FLUIDLINK.IO (Remote)	IEEE 802.3 10BASE-T (DHCP)
Weight Scale	USB (FTDI) RS-232 MT-SICS Protocol

MECHANICAL

Dimensions	(L x W x H) 10.1" x 4.1" x 9.0" (25.5 x 10.2 x 22.8 cm)
Weight	1660 grams (3.67 pounds)
Touch Display	272 x 480 TFT/LCD
Ingress Rating	IP33 / NEMA 2 - indoor use
Power Supply	24 VDC / 3.0 Amp (from supplied transformer)
Transformer	Universal input: 100 - 240 VAC @ 50/60 Hz

OPERATING CONDITIONS

Temperature Range	+5 °C (+41 °F) to +40 °C (+104 °F)
Humidity	Up to 90% relative humidity non-condensing

MATERIALS OF CONSTRUCTION

Enclosure	TC-890 FR (wipe down 70% isopropyl alcohol)
Pump Head	IXEF PEI Grilamid PA 12
Base Feet	Monsanto Santoprene (87 shore A)

COMPLIANCE

EMC Directive 2014/30/EU	BS EN 61326-1: 2013
Low Voltage Directive (LVD) 2014/35/EU	BS EN 61010-1: 2010
Machinery Directive 2006/42/EC	BS EN ISO 12100: 2010
RoHS Directive	All components RoHS Compliant (2011/65/EU)

WARRANTY

24 Month Limited Warranty	Subject to Terms and Conditions of Sale
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Ordering Information

FLUIDLINK® i400 Intelligent Laboratory Pump
Catalog Number: FL-i400-LAB-01-01-00-24V

Comes with Accessory Kit which includes:

- (1) AC-DC Power Converter
- (1) DC Power Field Installable Conn.
- (1) Modbus (C3) Field Installable Conn.
- (1) RJ45 Industrial Network Cable (EIP)
- (1) Scale Serial Cable



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Warning: These products are not designed for use in, and should not be used for patient-connected applications.

The information provided in this literature was reviewed for accuracy at the time of publication and is believed to be correct, however LAB DYNAMICS, Inc. accepts no liability for any errors it contains and reserves the right to alter specifications without notice. For current information contact LAB DYNAMICS directly. It is the users responsibility to ensure product suitability for use within their application.

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