the next generation of Peristaltic Pumps

Intuitive Touch Screen
Selectable Tubing Table
Automatic Tubing Break-In
Flow Rate & Key Parameters Displayed
User Configurable Multi-Step Operation

Peristaltic Pump System
The NEW KD Scientific Allegro™ Peristaltic Pump System allows maintenance free, continuous flow pumping of various liquids. The fluid contacts only the inside surface of the tubing negating concern for valves, O-rings or seals that might be incompatible with fluid being pumped.

- Clearly displays flow rate and total dispensed volume
- User configurable multi-step operation
- Dispenses in forward or reverse direction
- Adjustable flow rate while pump is running
- Stackable sealed remote pump drive with IP 32 rating
- Selectable tubing table
- Automatic tubing break-in
- Automatic calibration procedures
- External connectivity with USB interface and I/O port
- Easy to maintain

Masterflex® L/S® Easy Load® II Pump Head

The KD Scientific Allegro™ Peristaltic Pump System uses the prestigious Masterflex® L/S® Easy Load® II Pump Head. This fixed occlusion pump head requires no manual adjustments for tubing changes. Simply place your tubing in the pump head tubing retainer and rotate the lever to lock the cam in position.

- Delivers a wide range of flow rates
- Single or dual channel capability
- Quick and simple tubing changes with overhead cam
- Four-roller rotor reduces flow pulsation
KD Scientific
Liquid Handling Products
are the #1 choice
of Life Science and
Industrial Researchers

the
KD Scientific
Advantage

Recognized Worldwide...

Life Sciences
- pharmaceutical development
- mixing chemicals
- high flow drug screening
- fermentation and cell culture
- dispensing and dosing
- solvent transfer

Industrial
- compact and easily integrated into OEM applications
- ink dispensing
- slurry transfer
- plating chemicals
- paper manufacturing/pump monitoring
- cleaning
- chemical baths
- pH control for water & waste

Research & Development
- Liquid or Gas Circulation
- sample extraction
- sterilized media dispensing
- chemical metering
- analytical chemistry
- feeding continuous flow analyzers

Food & Beverage
- hygienic pumping of chemicals, oils, fats and other aggressive food products
- withdraw sanitary samples from process line
- easily pump viscous foods
- quick tubing changes allow for multiple batch testing
Simple Setup for Routine & Complex Applications

Intuitive Touch Screen

The Allegro™ touch display run screen presents the user with all key dispensing parameters in real-time.
- Intuitive graphical interface and touch screen
- Flow rate and key parameters clearly displayed
- Internationally recognized icons
- All program settings are indicated on the touch screen
- Alarm indication and messages
- Pump diagnostic/information
- Display rotates with horizontal/vertical orientation

A Model for Your Application

Allegro™ I Peristaltic Pump System
- One channel pump head
- Flow rates up to 1500 ml/min
- Accepts tubing ID sizes 0.8 mm (0.03 in) - 8.0 mm (0.32 in)
- Compatible with Masterflex® L/S® 13, L/S® 14, L/S® 16, L/S® 25, L/S® 17 and L/S® 18 tubing

Allegro™ II Peristaltic Pump System
- Two channel pump head
- Two simultaneous individual flows or one combined flow
- Flow rates up to 730 ml/min with combined channels
- Accepts tubing ID sizes 0.8 mm (0.03 in) - 4.8 mm (0.19 in)
- Compatible with Masterflex® L/S® 13, L/S® 14, L/S® 16 and L/S® 25 tubing

Allegro™ III Peristaltic Pump System
- Two single channel pump heads
- Two simultaneous individual flows or one combined flow
- Flow rates up to 2000 ml/min with combined channels
- Accepts tubing ID sizes 0.8 mm (0.03 in) - 8.0 mm (0.32 in)
- Compatible with Masterflex® L/S® 13, L/S® 14, L/S® 16, L/S® 25, L/S® 17 and L/S® 18 tubing

Simple Tubing Setup and Calibration

Tubing tables allow simple selection of any compatible tubing size. Masterflex® L/S® tubing selections are also available along with the ability to enter customer tubing sizes.

Automatic tubing break-in procedures allow the user to prepare tubing for operation. Simply insert tubing into the pump head and select the appropriate tubing break-in procedure. The Allegro™ Peristaltic Pump System does the rest.

Tubing Size Selection

<table>
<thead>
<tr>
<th>Tubing ID</th>
<th>3.1 mm</th>
<th>4.8 mm</th>
<th>6.4 mm</th>
<th>9.5 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>L/S® 16</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L/S® 18</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L/S® 25</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tubing calibration procedure for precise accuracy
Advanced Capabilities with Simple Configuration

User Configurable Multi-Step Operation

The Allegro® Peristaltic Pump System contains advanced features developed to allow quick setup of complex tasks. Multiple users can benefit from the Allegro™ programmable multi-step operation by saving their specific configurations and recalling them with the touch of a button. Programmable multi-step operation makes application programs easy to set up. The user can select from advanced operational profiles including constant rate, ramp, stepped, and pulsed flow.

- Store multiple programs
- Easy program retrieval
- Simple flow configuration
- Predefined operational profiles
- Identify programs with alphanumeric labels
- Trigger pumps using programmable TTL port
- Export programs to a computer or another pump
- Advanced profile features: constant rate, ramp, stepped and pulsed flow

Rugged Design with World Class Specifications

Connectivity & Communication

The Allegro® Peristaltic Pump System can easily accept commands or signals from external processes to control the pump. The unit offers USB, ideal for sending and receiving pump control commands. The Allegro™ can also be networked using RS-485. The digital I/O port can be used to send or receive remote signals from a contact or switch. An optional footswitch can be attached for start/stop external control.

- Communicate with commands or signals
- Control Allegro™ with external process or controller
- Remote start/stop footswitch capability

Unit Specification | Parameter
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tubing Size (Inner diameter/min (max))</td>
<td>0.8-8.0 mm (Allegro™ I, II); 0.8-8.8 mm (Allegro™ III)</td>
</tr>
<tr>
<td>Tubing Durometer Range (min/max)</td>
<td>55A-62A (Consult KD Scientific if using a higher durometer)</td>
</tr>
<tr>
<td>Flow Rate (per channel, tubing dependent)</td>
<td>Please see tube size flow rate chart</td>
</tr>
<tr>
<td>Accuracy</td>
<td>± 1.0 % **</td>
</tr>
<tr>
<td>Non-Volatile Memory</td>
<td>Stores all settings</td>
</tr>
</tbody>
</table>

Connectors:
- RS-485: IEEE-1394, 6 pin
- USB: Type B
- Input/Output (I/O): 15 pin D-sub connector
- Footswitch Connection: Mini phono jack
- Pressure (max): 30 psi
- Drive Motor: 1.8° stepper motor
- Motor Drive Control: Microprocessor with 17/16 microswitching
- Step Rate: Minimum 27.5 sec/pulse (Allegro™ I, II & III), Maximum 50 sec/pulse (Allegro™ III)

Maximum RPM:
- Allegro™ I: 375 RPM
- Allegro™ II/III: 312 RPM

Input Power:
- 30 VDC, 1.67 A using approved Allegro™ power supply (included)
- Input Power Connection: 2.5 ID x 5.5 mm OD male plug
- Power Supply: 100-240 VAC, 50-60 Hz/30 VDC, 8 watts universal
- Power Supply use only a KD Scientific approved power supply and line cord
- Dimensions (Control box): 5.0 x 5.0 x 1.0 in
- Dimensions (Pump Motor/Head): 11.5 x 24.1 x 11.8 cm (4.5 x 9.5 x 4.6 in)
- Weight: 2.64 kg (5.9 lbs)
- Operating Temperature: 4°C to 40°C (40°F to 104°F)
- Storage Temperature: -10°C to 70°C (14°F to 158°F)
- Ingress Protection: IP52 (pump head & drive)
- Storage Humidity: 20% to 80% RH; non-condensing
- Method of Operation: Continuous forward/continuous reverse
- Classification: Class I
- Pollution Degree: 0
- Installation: Category II
- Regulatory Certifications: CE IEC, UL, & CSA; CB scheme. EU RoHS, WEEE
- Safety Declarations: EN 61010-1 3rd Ed. CB scheme
- EMC Declaration: IEC 61326-1 Ed. 1.1

The NEW Allegro™ Peristaltic Pump family is engineered for worldwide regulatory compliance. The outstanding durability and quality of this advanced peristaltic system is second to none.

The NEW Allegro™ Peristaltic Pump System can run higher temperature tubing depending on the Allegro™ model and customer application. Please consult KD Scientific for additional information.

** Accuracy specification assumes user performance of tubing break-in and calibration. KD Scientific pumps are for laboratory use only. They have not been approved by the FDA for clinical use on patients. Specifications are subject to change.

** The Allegro® Peristaltic Pump System can be configured by saving user specific configurations and recalling them with the touch of a button. Programmable multi-step operation makes application programs easy to set up.

Multiple step operations is easy to configure.

![Pump Head/Drive Connection](Image)

<table>
<thead>
<tr>
<th>Tubing Size</th>
<th>Tubing ID</th>
<th>Maximum Flow Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allegro™ I</td>
<td>L-13</td>
<td>0.8 mm</td>
</tr>
<tr>
<td>L-14</td>
<td>1.6 mm</td>
<td>40 mL/min</td>
</tr>
<tr>
<td>L-16</td>
<td>3.1 mm</td>
<td>240 mL/min</td>
</tr>
<tr>
<td>L-25</td>
<td>4.8 mm</td>
<td>540 mL/min</td>
</tr>
<tr>
<td>L-17</td>
<td>6.4 mm</td>
<td>780 mL/min</td>
</tr>
<tr>
<td>L-18</td>
<td>7.9 mm</td>
<td>1500 mL/min</td>
</tr>
</tbody>
</table>

| Allegro™ II | L-13 | 0.8 mm | 10 mL/min |
| L-14 | 1.6 mm | 40 mL/min |
| L-16 | 3.1 mm | 150 mL/min |
| L-25 | 4.8 mm | 360 mL/min |

| Allegro™ III | L-13 | 0.8 mm | 10 mL/min |
| L-14 | 1.6 mm | 40 mL/min |
| L-16 | 3.1 mm | 150 mL/min |
| L-25 | 4.8 mm | 360 mL/min |
| L-17 | 6.4 mm | 440 mL/min |
| L-18 | 7.9 mm | 1000 mL/min |

Allegro™ Specification Notes:
- The Allegro® Peristaltic Pump System can run higher operating temperature tubing depending on the Allegro™ model and customer application. Please consult KD Scientific for additional information.
- The Allegro® Peristaltic Pump System can easily accept commands or signals from external processes to control the pump. The unit offers USB, ideal for sending and receiving pump control commands. The Allegro™ can also be networked using RS-485. The digital I/O port can be used to send or receive remote signals from a contact or switch. An optional footswitch can be attached for start/stop external control.
- The NEW Allegro™ Peristaltic Pump family is engineered for worldwide regulatory compliance. The outstanding durability and quality of this advanced peristaltic system is second to none.

Please see tube size flow rate chart.
Ordering Information: Models & Tubing

The Allegro™ I, II & III are available as complete systems. An optional footswitch for remote start/stop, TTL communication cable for synchronous control and other accessories are available. Tubing is sold separately.

KD Scientific recommends Masterflex® L/S tubing to achieve the best performance from your Allegro™ Peristaltic Pump. The tubing used in the Allegro™ Peristaltic Pump will depend on the pumping application. It is important to select tubing with appropriate chemical resistance for the liquid being pumped. KD Scientific offers various formulations of Masterflex® tubing. The tubing ordering table lists out current tubing offerings. If your desired formulation is not listed please contact KD Scientific for assistance.

### System Tubing Ordering Information

<table>
<thead>
<tr>
<th>Order #</th>
<th>Product Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>785501</td>
<td>Allegro™ I Peristaltic Pump System</td>
<td>Single channel, Masterflex® Pump Head, drive and controller</td>
</tr>
<tr>
<td>785502</td>
<td>Allegro™ II Peristaltic Pump System</td>
<td>Dual channel, Masterflex® Pump Head, drive and controller</td>
</tr>
<tr>
<td>785503</td>
<td>Allegro™ III Peristaltic Pump System</td>
<td>Two single channel, Masterflex® Pump Head, drive and controller</td>
</tr>
</tbody>
</table>

**Tubing Ordering Information**

<table>
<thead>
<tr>
<th>C-Flex Ultra</th>
<th>Characteristics</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-Flex™ Ultra is a transparent tubing composed of a silicone like material with the chemical compatibility of Tygon®.</td>
<td>Good for low pressure applications up to 24 psi.</td>
<td>FDA, Viton, FDA Opaque.</td>
</tr>
<tr>
<td>Tygon ELF</td>
<td>Characteristics</td>
<td>Description</td>
</tr>
<tr>
<td>Tygon® ELF is a clear tubing with long life and broad chemical resistance.</td>
<td>FDA compliant. Resistant to corrosives, solvents and oils at elevated temperatures.</td>
<td>FDA, Viton, FDA Opaque.</td>
</tr>
</tbody>
</table>

**Accessories**

- 780269 Allegro™ Footswitch
- 785533 Allegro™ II to III Conversion Kit
- 785542 Allegro™ Stacking Base
- 785555 TTL Communication Cable

**Additional Components**

- 785511 Allegro™ Head/Driver
- 785512 Allegro™ Head/Driver
- 785513 Allegro™ II Head/Driver
- 785521 Allegro™ Touch Controller

Registered trademarks belong to their respective companies.

More from KD Scientific

**KDS Legacy Series Syringe Pumps**

The Legacy series syringe pumps are the industry standard with proven performance.

- Single and dual syringe infuse, infuse withdraw & continuous models
- Flow direction indicator
- Anti-siphon clamp (Infuse/withdraw models only)
- Easy-to-use and set up different configurations
- User controllable multi-step operation (model dependent)

**KDS Legato® 100 Series Syringe Pumps**

The Legato series syringe pumps are the latest generation of syringe pumps. The Legato series offers unparalleled ease of use through the high resolution touch screen interface.

- Single and dual syringe infuse, infuse withdraw & continuous models
- Easy to set up graphical interface
- Key operating parameters clearly displayed
- Easy to use and set up different configurations
- User controllable multi-step operation (model dependent)
- USB Interface

**KDS Legato® 200 Series Syringe Pumps**

- Standard syringe library
- USB Interface
- RS 232 Interface
- Better flow performance and repeatability down to nL/hour
- Eliminate dead volume with fast forward/fast reverse
- Multi-rack configurations available

KD Scientific pumps are for laboratory use only. They have not been approved by the FDA for clinical use on patients.
Centrifan® Small Volume Evaporator

The Centrifan™ PE Evaporator/Concentrator is a small volume evaporator that eliminates the problem of bumping using patented SBT (Self Blowdown Technology). SBT allows solvent drying using heated, circulating gas flow and NO VACUUM PUMP!

- No vacuum pump - no bumping!
- Easy-to-use - no monitoring
- Quick set-up - put in the samples and close the cover
- Small footprint
- Dry directly in vials
- Cost effective

More from KD Scientific

6 x 16 x 100 mm Test Tubes
8 x 1.6 ml Micro-Centrifuge Tubes
8 x 4 ml Vials
6 x 30 ml Scintillation Vials
6 x 40 ml Scintillation Vials
10 x 1.5 HPLC Vials

Worldwide Sales & Support

KD Scientific is recognized worldwide for their technical expertise and high performance products with unmatched reliability.

KD Scientific is committed to delivering the highest level of customer satisfaction, as well as technical support for all their products.

Worldwide coverage to meet your individual needs • Factory trained distribution channels to help you solve your application problems • Largest selection of products to meet your demanding applications

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Please scan for more information about the Allegro™