

L/S® VARIABLE-SPEED DIGITAL STANDARD DRIVE

FEATURES/BENEFITS

- ▶ Flow rates: 0.001 to 3400 mL/min (0.0001 to 54 GPH) with L/S tubing
- ▶ Cartridge flow rate: 0.00001 to 1700 mL/min per channel
- ▶ Four-line graphical LCD display shows four operating modes: continuous run, volume dispense, time dispense, and copy dispense—interface permits precise setting of desired flow rate or volume without over- or undershoot
- ▶ Menu-driven interface lets you select one of seven languages for programming and operation
- ▶ Set time interval (delay) between dispense cycles for hands-free dispensing
- ▶ Antidrip function ensures dispensing accuracy
- ▶ Batch count lets you set the desired number of batches and displays batches completed
- ▶ Cumulative volume function (totalizer) tracks total volume dispensed/pumped
- ▶ User-selectable metric or English units
- ▶ PWM speed control with tachometer feedback for precise, efficient control; ±0.1% speed control accuracy
- ▶ Reversible, maintenance-free brushless motor
- ▶ Drive stores one calibration value per tubing size, even when turned off
- ▶ Stackable housing is IP33 rated for wipedown
- ▶ Universal voltage, 90 to 260 VAC autoselect, 50/60 Hz
- ▶ Compatible with all L/S pump heads

DRIVE CONTROLS

- ▶ Protected power switch located on back of drive
- ▶ Lighted display indicates power is on
- ▶ Simple programming and operation of the following via sealed membrane keypad:
 - ◆ Tubing size
 - ◆ Flow rate
 - ◆ Flow direction
 - ◆ Flow units (metric or English)
 - ◆ Motor speed (rpm)
 - ◆ Total volume
 - ◆ Dispense (volume/copy/time)
 - ◆ Antidrip
 - ◆ Batch count
 - ◆ On/off time
 - ◆ Control mode (remote/internal)
 - ◆ Prime
 - ◆ Start/stop
 - ◆ Calibration

SETUP

1. Mount pump head(s) and load tubing.
2. Turn drive power on and select language.
3. Select manual (internal) or remote control.
4. Select motor direction.
5. Prime and calibrate pump if required.
6. Set flow rate through keypad.
7. Press START key to begin pumping.

SPEED CONTROL/CIRCUITRY

- ▶ Regulate motor through keypad and menus, 4 to 20 mA, or 0 to 10 V signal
- ▶ Soft start for starts without power surges
- ▶ Speed not affected by variations in power line voltage (VAC) and frequency (Hz)
- ▶ Line filters reduce outside interference
- ▶ Meets UL 61010-1, CSA C22.2, No. 61010-1; For CE mark: EN61010-1 (EU low voltage) and EN61326-1 (EU EMC)

REMOTE CONTROL

- ▶ Speed control input: 0 to 20 mA, 4 to 20 mA, and 0 to 10 V (scaleable/invertable)
- ▶ Speed signal output: 0 to 20 mA, 4 to 20 mA, and 0 to 10 V (scaleable/invertable)
- ▶ START/STOP, CW/CCW, PRIME via contact closure
- ▶ Tach output: open collector
- ▶ Motor running indicator
- ▶ 25-pin (DB25) female connection
- ▶ Handheld remote and foot switch options; order separately under "Accessories"

CALIBRATION

1. Select TUBING CAL through the Main or Setup menu.
2. Set flow direction, tubing size, and flow rate.
3. Prime the tubing
4. Highlight START and press ENTER, drive will run based on default volume.
5. Press ENTER and adjust CAL VOLUME to the actual measured volume.
6. Press ENTER to SAVE setting and EXIT.

Note: Digital signal processor retains one calibration value for each tubing size, even when power is turned off.



L/S digital standard drive 07522-20 shown with multichannel pump head 07535-04

KEYPAD LOCK/UNLOCK FEATURE

- ▶ Lock keypad and protect settings by highlighting the lock icon and pressing ENTER
- ▶ Select LOCK and press ENTER to exit menu
- ▶ Repeat above steps to unlock keypad



ORDERING INFORMATION

Catalog number	rpm	Power (50/60 Hz) universal voltage
HL-07522-20	0.1 to 600	90 to 260 VAC
HL-07522-30	0.02 to 100	

L/S PUMP TUBING FLOW RATE INFORMATION (mL/min)

Order Masterflex L/S pump tubing separately on pages 68–73.

Tubing cross section	L/S Precision pump tubing						L/S High-performance Precision pump tubing			
	L/S 13	L/S 14	L/S 16	L/S 25	L/S 17	L/S 18	L/S 15	L/S 24	L/S 35	L/S 36
Flow range @ 0.1 to 600 rpm	0.006 to 36	0.021 to 130	0.08 to 480	0.17 to 1000	0.28 to 1700	0.38 to 2300	0.17 to 1000 (0.18 to 1100)	0.28 to 1700 (0.30 to 1800)	0.38 to 2300 (0.43 to 2600)	0.48 to 2900 (0.58 to 3400)
Flow range @ 0.02 to 100 rpm	0.001 to 6	0.004 to 21	0.016 to 80	0.033 to 170	0.057 to 280	0.077 to 380	0.033 to 170 (0.036 to 180)	0.057 to 280 (0.057 to 300)	0.077 to 380 (0.086 to 430)	0.096 to 480 (0.113 to 580)

Note: Flow rates in parentheses can be obtained only with High-Performance pump heads.

SPECIFICATIONS for L/S Variable-Speed Digital Standard Drive

Catalog number	HL-07522-20	HL-07522-30
Performance Specifications		
Flow capacity	0.006 to 3400 mL/min (0 to 54 GPH)	0.001 to 580 mL/min (0 to 9.2 GPH)
rpm	0.1 to 600	0.02 to 100
Number of heads accepted	2	4
Maximum torque	Starting	381 N-cm (540 oz-in)
	Running	127 N-cm (180 oz-in)
Reversible	Yes	
External control – Input	0-20 mA, 4-20 mA, 0-10 V; START/STOP, CW/CCW, PRIME via contact closure	
External control – Output	0 to 20 mA, 4 to 20 mA, 0 to 10 V, TTL pulse, drive running	
Electrical Specifications		
Voltage/Frequency VAC (50/60 Hz)	90 to 260, universal-voltage autoselecting	
Current	2.2 A at 115 V; 1.1 A at 230 V	
Fuse rating	3.15 A / 250 V	
Motor type	Continuous-duty, brushless DC	
Motor size	75 W (1/10 hp)	
Display	Four-line graphical LCD	
Motor/speed control type	PWM with microprocessor	
Speed regulation (repeatability)	±0.1% (±0.1 rpm at 600 rpm, ±0.01 rpm at 100 rpm)	
Soft start/Electronic brake	Yes/Yes	
Physical Specifications		
Housing materials	Stackable ABS plastic housing, coated aluminum chassis	
IP rating†	IP33	
Agency listings	ETL, cETL, CE	
Operating temperature	0 to 40°C (32 to 104°F)	
Storage temperature	-25 to 65°C (-13 to 149°F)	
Dimensions (L x W x H)	27.4 x 21.2 x 21.6 cm (10 7/8" x 8 3/8" x 8 1/2")	
Shipping weight	5.9 kg (13 lb)	

†See page 194 for an explanation of IP ratings

ACCESSORIES

HL-07523-92 Foot switch, momentary start/stop; 1.8-m (6-ft) cable.

HL-07523-95 Cable assembly, DB25 male connector and 7.9-m (25-ft) cable with stripped wire ends for remote control.

HL-07523-94 DB25 male connector, use to create your own cable.

HL-07523-97 Handheld remote controller; route tubing through handle for dispensing and filling applications; 1.8-m (6-ft) cable.

HL-07523-98 Tilt bail; use to securely elevate front of drive.

HL-17050-01 NIST-traceable calibration with data for peristaltic pump drive.

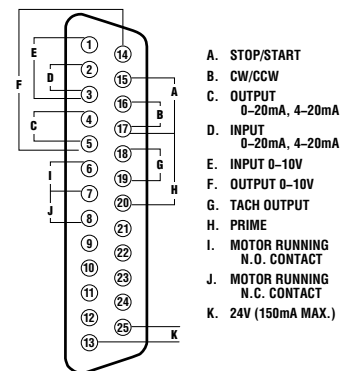
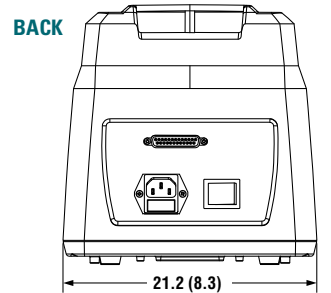
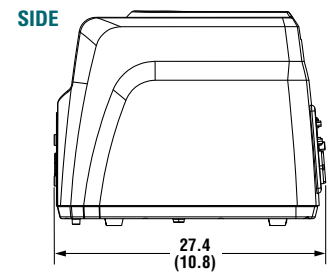
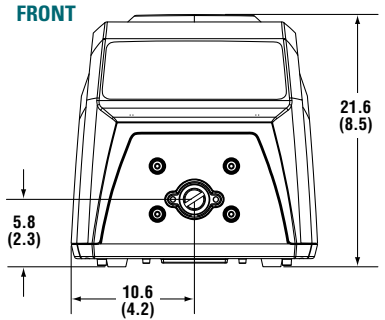
SEE PAGES 108-117

For complete L/S pump systems



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Dimensional Drawings cm (in.) 07522-series



STANDARD 0.001 to 2900 mL/min pages 40-41		HIGH-PERFORMANCE 0.018 to 3400 mL/min pages 48-49		MULTICHANNEL CARTRIDGE 3- or 4-roller; up to 8 channels 0.001 to 1700 mL/min pages 56-57	
EASY-LOAD® 3 0.001 to 2900 mL/min pages 42-43		PTFE-TUBING 0.001 to 65 mL/min pages 50-51		6- or 8-roller; up to 12 channels 0.00001 to 350 mL/min pages 58-59	
EASY-LOAD® II 0.001 to 2900 mL/min pages 44-45		MULTICHANNEL 4- or 8-channel for microbore tubing 0.00005 to 200 mL/min pages 52-53		PTFE-DIAPHRAGM 10 to 800 mL/min pages 60-61	
EASY-LOAD® 0.001 to 2300 mL/min pages 46-47		2-, 4-, or 8-channel for L/S® Precision tubing 0.001 to 2300 mL/min pages 54-55			

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