

## L/S® VARIABLE-SPEED ANALOG CONSOLE DRIVES

### FEATURES/BENEFITS

- ▶ Flow rates: 0.06 to 3400 mL/min (0.001 to 54 GPH) with L/S tubing
- ▶ Cartridge flow rate: 0.0005 to 1700 mL/min per channel
- ▶ Three-digit LED shows motor speed (rpm)
- ▶ PWM speed control for precise, efficient control; ±0.25% speed control accuracy
- ▶ Reversible motor—easily reverse direction of flow
- ▶ 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
- ▶ LED indicator shows motor/pumping direction
- ▶ Simple programming and operation of the following via sealed membrane keypad:
  - ◆ Flow direction
  - ◆ Motor speed (rpm)
  - ◆ Control mode (remote/internal)
  - ◆ Start/stop

### SETUP

1. Mount pump head(s) and load tubing.
2. Turn drive power on.
3. Select manual (internal) or remote (external) control.
4. Select motor direction.
5. Set drive speed (rpm) through keypad.
6. Press START key to begin pumping.



07528-10

### SPEED CONTROL/CIRCUITRY

- ▶ Regulate motor through keypad, 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: 4 to 20 mA, and 0 to 10 V
- ▶ START/STOP, CW/CCW via contact closure
- ▶ 9-pin (DB9) female connection
- ▶ Handheld remote and foot switch options; order separately under "Accessories"

### KEYPAD LOCK/UNLOCK FEATURE

- ▶ Lock out keypad and protect settings with special key sequence

### ORDERING INFORMATION

Catalog number	rpm	Power (50/60 Hz)
HL-07528-10	6 to 600	90 to 260 VAC
HL-07528-20	3 to 300	
HL-07528-30	1 to 100	



### SELECTION CRITERIA

1. Motor rpm / flow rate.
2. Number of pump heads accepted.

**Order pump heads and tubing separately.**

### ACCESSORIES

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

### L/S PUMP TUBING FLOW RATE INFORMATION (mL/MIN)

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

Tubing cross sections	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 @ 6 to 600 rpm	0.36 to 36	1.3 to 130	4.8 to 480	10 to 1000	17 to 1700	23 to 2300	10 to 1000 (11 to 1100)	17 to 1700 (18 to 1800)	23 to 2300 (26 to 2600)	29 to 2900 (34 to 3400)
Flow range @ 3 to 300 rpm	0.18 to 18	0.65 to 65	2.4 to 240	5 to 500	8.5 to 850	11.5 to 1150	5 to 500 (5.5 to 550)	8.5 to 850 (9 to 900)	11.5 to 1150 (13 to 1300)	14.5 to 1450 (17 to 1700)
Flow range @ 1 to 100 rpm	0.06 to 6	0.21 to 21	0.8 to 80	1.7 to 170	2.8 to 280	3.8 to 380	1.7 to 170 (1.8 to 180)	2.8 to 280 (3.0 to 300)	3.8 to 380 (4.3 to 430)	4.8 to 480 (5.8 to 580)

**Note:** Flow rates were determined using water at room temperature and with zero back pressure and zero suction lift. Higher flow rates in parentheses can be obtained only with L/S High-Performance pump heads.



### SPECIFICATIONS for L/S Variable-Speed Analog Console Drives

Catalog number	HL-07528-10	HL-07528-20	HL-07528-30
<b>Performance Specifications</b>			
Flow capacity	0.36 to 3400 mL/min (0 to 54 GPH)	0.18 to 1700 mL/min (0 to 27 GPH)	0.06 to 580 mL/min (0 to 9 GPH)
rpm	6 to 600	3 to 300	1 to 100
Number of heads accepted	2	2	4
Maximum torque	Starting	381 N-cm (540 oz-in)	763 N-cm (1080 oz-in)
	Running	127 N-cm (180 oz-in)	254 N-cm (360 oz-in)
Reversible	Yes		
External control – Input	4 to 20 mA, 0 to 10 V; START/STOP, CW/CCW via contact closure		
External control – Output	Not applicable		
<b>Electrical Specifications</b>			
Voltage/Frequency VAC (Hz)	90 to 260 (50/60)		
Current	2.2 A at 115 V; 1.1 A at 230 V		
Fuse rating	3.15 A / 250 V		
Motor type†	Continuous duty, TENV†, permanent-magnet DC		
Motor size	75 W (1/10 hp)		
Display	Three-digit LED		
Motor/speed control type	PWM		
Speed regulation	±0.25%		
Soft start/Electronic brake	Yes/No		
<b>Physical Specifications</b>			
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 (10¾" x 8¼" x 8½")		
Shipping weight	6.9 kg (15.2 lb)		

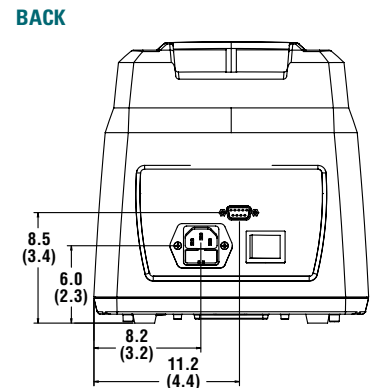
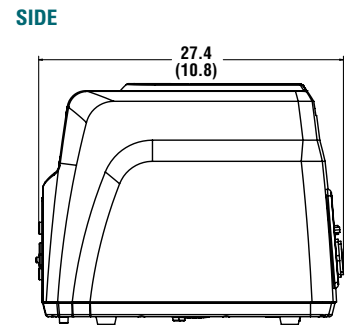
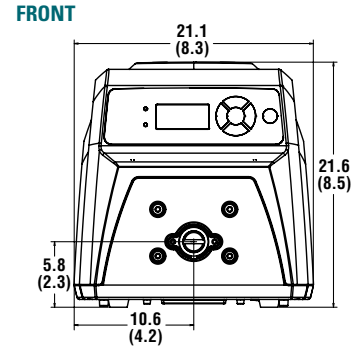
†TENV—totally enclosed, nonventilating.  
‡See page 194 for an explanation of IP ratings.

### ACCESSORIES

- HL-77595-35 Foot switch**, momentary start/stop; 1.8-m (6-ft) cable.
- HL-07595-45 DB9 male connector**, use to create your own cable.
- HL-07595-47 Cable assembly**, DB9 male connector and 7.9 m (25-ft) cable with stripped wire terminal ends. Use for remote control.
- HL-07523-98 Tilt bail**; use to securely elevate front of drive.
- HL-07528-80 Handheld remote controller**, DB9 male; for on/off control; route tubing through handle for filling and dispensing applications.



### Dimensional Drawings cm (in.) 07528-series



<b>STANDARD</b> 0.06 to 2900 mL/min pages 40–41		<b>HIGH-PERFORMANCE</b> 0.9 to 3400 mL/min pages 48–49		<b>MULTICHANNEL CARTRIDGE</b> 3- or 4-roller; up to 8 channels 0.047 to 1700 mL/min pages 56–57	
<b>EASY-LOAD® 3</b> 0.06 to 2900 mL/min pages 42–43		<b>PTFE-TUBING</b> 0.06 to 65 mL/min pages 50–51		<b>6- or 8-roller;</b> up to 12 channels 0.0005 to 350 mL/min pages 58–59	
<b>EASY-LOAD® II</b> 0.06 to 2900 mL/min pages 44–45		<b>MULTICHANNEL</b> 4- or 8-channel for microbore tubing 0.0026 to 200 mL/min pages 52–53		<b>PTFE-DIAPHRAGM</b> 10 to 800 mL/min pages 60–61	
<b>EASY-LOAD®</b> 0.06 to 2300 mL/min pages 46–47		<b>2-, 4-, or 8-channel</b> for L/S® Precision tubing 0.045 to 2300 mL/min pages 54–55			

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L/S® TUBING .....68–73  
L/S® PUMP SYSTEMS .....108–117

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