

I/P® DIGITAL MODULAR DISPENSING DRIVES

FEATURES/BENEFITS

- ▶ Flow rates: 0.0006 to 19 LPM (0.0002 to 5.0 GPM) with I/P tubing; up to 26 LPM (7 GPM) with two Easy-Load® or Standard pump heads
- ▶ Separate drive and controller for convenient placement; a 1.8-m (6-ft) control cable is included. Extend that distance with optional 2.7-m (9-ft) extension cable
- ▶ Four-line graphical LCD shows four operating modes: continuous run, volume dispense, time dispense, and copy dispense
- ▶ 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 number of batches completed
- ▶ User-selectable English or metric flow/volume units
- ▶ PWM speed control with tachometer feedback for ±0.1% speed control accuracy
- ▶ Reversible, maintenance-free brushless motor
- ▶ Universal voltage, 90 to 260 VAC autoselect, 50/60 Hz
- ▶ Compatible with all I/P pump heads

DRIVE CONTROLS

- ▶ Protected power switch located on controller
- ▶ Lighted display indicates power is on
- ▶ Simple programming and operation of the following via sealed membrane keypad:
 - ◆ Speed control: 0 to 20 mA, 4 to 20 mA, or 0 to 10 V
 - ◆ Tubing size
 - ◆ Flow rate
 - ◆ Flow direction
 - ◆ Flow units (English or metric)
 - ◆ Motor speed (rpm)
 - ◆ Total volume
 - ◆ Dispense (volume/copy/time)
 - ◆ Batch count
 - ◆ On/off time
 - ◆ Antidrip
 - ◆ Control mode (remote/internal)
 - ◆ Prime
 - ◆ Start/stop
 - ◆ Calibration



Digital modular drive 07594-00 includes a benchtop controller (drive not shown)

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) or 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)

SELECTION CRITERIA

1. Motor rpm / flow rate.
 2. Benchtop or washdown, wall-mount controller.
- Order pump heads and tubing separately.

NEW

Digital modular drive 07594-10 includes a wall-mount controller; shown with I/P Easy-Load pump head 77601-10



CALIBRATION

1. Select TUBING CAL through 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.

ISO9001:2008
CERTIFIED SUPPLIER



2 year
warranty

ORDERING INFORMATION

Catalog number	rpm	Power (50/60 Hz)
Benchtop digital modular drive		
HL-07594-00	0.1 to 650	90 to 260 VAC
Digital modular drive with washdown controller		
HL-07594-10	0.1 to 650	90 to 260 VAC

I/P PUMP TUBING FLOW RATE INFORMATION

Order Masterflex I/P tubing on pages 126–130.

STANDARD
0.001 to 13 LPM
pages 120–121



EASY-LOAD®
0.001 to 13 LPM
pages 122–123



HIGH-PERFORMANCE
0.001 to 19 LPM
pages 124–125



Tubing cross sections	I/P Precision pump tubing sizes			I/P High-performance Precision pump tubing sizes†		
	I/P 26	I/P 73	I/P 82	I/P 70	I/P 88	I/P 89
Flow range @ 0.1 to 650 rpm	0.001 to 4 LPM (0.0002 to 1.0 GPM)	0.001 to 8 LPM (0.0002 to 2.1 GPM)	0.002 to 13 LPM (0.0005 to 3.5 GPM)	0.001 to 8 LPM (0.0002 to 2.1 GPM)	0.002 to 17 LPM (0.0005 to 4.5 GPM)	0.002 to 19 LPM (0.0005 to 5.0 GPM)

†Use with High-Performance pump head only.



SPECIFICATIONS for I/P Digital Modular Dispensing Drives

Catalog number	HL-07594-00	HL-07594-10
Performance Specifications		
Flow capacity	0.0006 to 19 LPM (0.0002 to 5 GPM)	
rpm	0.1 to 650	
Number of heads accepted	2	
Maximum torque	Starting	1102 N-cm (1560 oz-in)
	Running	367 N-cm (520 oz-in)
Reversible	Yes	
External control – Input	0 to 20 mA, 4 to 20 mA, 0 to 10 V; START/STOP, CW/CCW, PRIME via contact closure	
External control – Output	1 to 20 mA, 4 to 20 mA, 0 to 10 V; TTL pulse, drive running	
Electrical Specifications		
Voltage/Frequency VAC (Hz)	90 to 260 (50/60)	
Current	4.5 A at 115 V; 2.6 A at 230 V	
Fuse rating	6.3 A / 250 V	
Motor type	Continuous duty, brushless DC	
Motor size	280 W (% hp)	
Display	Four-line graphical LCD	
Motor/speed control type	PWM with microprocessor	
Speed regulation	±0.1%	
Soft start/Electronic brake	Yes/Yes	
Physical Specifications		
Housing materials	Drive	Painted steel and aluminum
	Controller	ABS plastic housing, coated aluminum chassis
IP rating†		IP33
		IP66 (NEMA 4X)
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)	Drive	36.2 x 17.8 x 16.5 cm (14¼" x 7" x 6½")
	Controller	26.3 x 21.1 x 14.0 cm (10¾" x 8¾" x 5½")
Shipping weight	12.6 kg (27.8 lb)	14.1 kg (30.8 lb)

†See page 194 for an explanation of IP ratings.

REMOTE CONTROL

Benchtop Modular Drive

- ▶ Remote control via 25-pin (DB25) female connection on back of controller
- ▶ 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
- ▶ Remote cable and foot switch options; order separately under "Accessories"

Modular Drive with Washdown, Wall-Mount Controller

- ▶ Remote control via 31-pin weather-resistant circular connection on bottom of controller
- ▶ 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
- ▶ Remote cable and foot switch options; order separately under "Accessories"

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

ACCESSORIES

For Benchtop Model 07594-00

HL-77301-82 Extension cable, 2.7 m (9 ft), to extend distance between motor and controller.

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

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

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

For Washdown Model 07594-10

HL-77301-82 Extension cable, 2.7 m (9 ft), to extend distance between motor and controller.

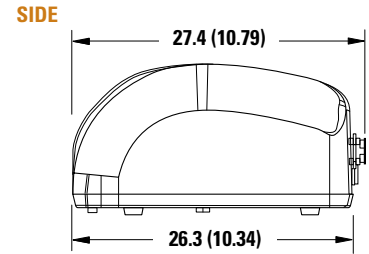
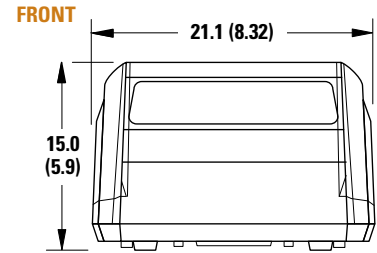
HL-07575-84 Washdown foot switch, momentary start/stop; 1.8-m (6-ft) cable.

HL-07575-80 Remote control cable assembly; 31-pin round water-tight connector and 7.9-m (25-ft) cable with stripped wire ends for remote control, wire to controller/PLC.

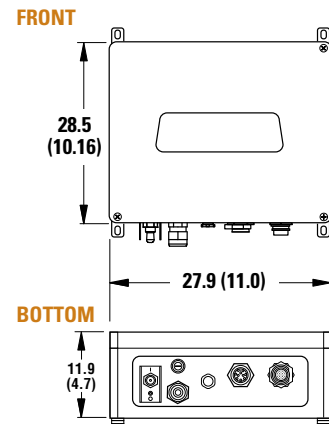
HL-17050-01 NIST-traceable calibration with data for peristaltic pump drive.

Dimensional Drawings cm (in.)

07594-00 Controller



07594-10 Controller



07594-Series Drive

