

# Thermo Scientific Masterflex® P/S

NEMA 4X Process  
Digital Pump Systems

Transfer, feed, meter, process and washdown environments. IP66 and NEMA 4X rated. Powder coated housing and sealed keypad are protected from dust, water, and chemicals in the wash down environment—simply hose down to clean.



NEMA 4X Process  
Digital Pump  
1301-3600-955

## Product Benefits

- **Wide range flow rate:** 0.006 to 3400 mL/min (0.0001 to 54 GPH) with P/S tubing. Flow rate depends on drive rpm and tubing size.
- **Graphical LCD display** shows six different parameters: motor rpm, flow rate, feed volume, cumulative volume, feed interval time, and copy number.
- **Brushless, maintenance-free motor** with improved 0.1% speed control accuracy between cycles for convenient, automated dispensing.
- **Feed by:** volume—in milliliters (0.001 to 99,999), liters, and gallons; copy—1 to 99,999 feed cycles. Set time interval (SEC) between feed cycles from 1 to 99,999 seconds.
- **Remote control capabilities** via fluid-resistant input/output connector on back of drive:
  - Speed control input: scalable 0 to 20 mA, 4 to 20 mA, 0 to 10 V
  - Pumping direction
  - Start/stop/purge
  - Tachometer output: scalable 0 to 20 mA, 4 to 20 mA, 0 to 10 V, or open collector
- **Impervious** to acids, caustics, oxidizers and organic solvents.
- **6000 to 1** turndown.



**Flow rates in mL/min (flow rates in parentheses can only be obtained with the High-Performance Pump Head)**

RPM	Precision Pump Tubing						High-Performance Precision Pump Tubing*			
	P/S 13	P/S 14	P/S 16	P/S 25	P/S 17	P/S 18	P/S 15	P/S 24	P/S 35	P/S 36
0.1 to 600	0.006 to 36 <i>0.002 to 13.7</i>	0.021 to 130 <i>0.008 to 49.4</i>	0.08 to 480 <i>0.630 to 162.6</i>	0.17 to 1000 <i>0.065 to 380.4</i>	0.28 to 1700 <i>0.107 to 646.7</i>	0.38 to 2300 <i>0.145 to 875.0</i>	0.17 to 1000 (0.18 to 1100) <i>0.065 to 38</i> ( <i>0.068 to 418</i> )	0.28 to 1700 (0.30 to 1800) <i>0.11 to 647</i> ( <i>0.11 to 685</i> )	.38 to 2300 (0.43 to 2600) <i>0.14 to 875</i> ( <i>0.16 to 985</i> )	0.48 to 2900 (0.57 to 3400) <i>0.18 to 1103</i> ( <i>0.22 to 1255</i> )
0.02 to 100	0.001 to 6 <i>0.000 to 2.3</i>	0.004 to 21 <i>0.002 to 8.0</i>	0.016 to 80 <i>0.066 to 30.4</i>	0.033 to 170 <i>0.013 to 64.7</i>	0.057 to 280 <i>0.622 to 106.5</i>	0.077 to 380 <i>0.629 to 114.1</i>	0.033 to 170 (0.033 to 180) <i>0.013 to 64</i> ( <i>0.013 to 65</i> )	0.057 to 280 (0.057 to 300) <i>0.022 to 106</i> ( <i>0.622 to 114</i> )	0.077 to 380 (0.077 to 430) <i>0.029 to 145</i> ( <i>0.029 to 164</i> )	0.096 to 480 (0.096 to 580) <i>0.037 to 183</i> ( <i>0.637 to 226</i> )

\*Values in parentheses are with high-performance pump heads Values in italics are gallons per day

**Specifications & Ordering Information**

Catalog Number	1301-3600-955	1301-3600-956	1301-3600-965	1301-3100-955	1301-3100-956	1301-3100-965
Includes Pump Head	EASY-LOAD II (thin wall)	EASY-LOAD II (thick wall)	High-Performance (thick wall)	EASY-LOAD II (thin wall)	EASY-LOAD II (thick wall)	High-Performance (thick wall)
Number of heads accepted	2	2	1	4	4	1
RPM	0.1-600	0.1-600	0.1-600	0.02-100	0.02-100	0.02-100
External control – input	0 to 20 mA, 0 to 10V; Scalable START/STOP, DIR. (CW/CC), PRIME via contact closure Remote / Local Enable Contact Secondary Speed Control 0-20mA or 4-20mA Auxiliary Contact (Limit Switch)					
External control – output	4 to 20 mA, or 0 to 10V					
Motor running logic	N.O. or N.C. (1A @ 24V)					
Tachometer output	5V, TTL pulse					
Power supply output	24 V, 150 mA					
Voltage (50/60 Hz)	115/230 V AC (auto selected)					
Motor type	Brushless continuous duty, TENV*, DC, permanent lubricated bearings					
Control type	PWM (Pulse Width Modulated)					
Speed regulation (repeatability)	±0.1%; ±0.1 rpm @ 600 rpm; %; ±0.21 rpm @ 100 rpm					
Operating temperature	0 to 40°C (32 to 104°F)					
Storage temperature	-25 to 65°C (-13 to 149°F)					
Housing materials	Polyester powder coated CRS					
IP rating	IP66 and NEMA 4X					
Agency approvals	ETL, cETL, CE, ROHS					
Controller dimensions (L x W x H)	13.0 x 8 x 8					
Shipping weight	30 lbs					

\*Totally enclosed, non-ventilating

