

# 1000HL<sub>f</sub>

## Hazardous Location Syringe Pump

The Teledyne ISCO HL<sub>f</sub>-Series pumps give you the same accurate, predictable flow and pressure control as our standard D-Series, while conforming to safety standards for use in UL Class I, Division 2, Groups A B C & D, T4 environments. The hazardous location rating is achieved through internal design modifications including the use of brushless DC motors. This approach eliminates the need for purge boxes or other additional safety devices.

*2,000 psi (138 bar) approved by UL for Class I, Division 2 Environments*

Wetted materials are compatible with most aqueous and organic liquids, corrosive solutions, heated fluids, liquefied gases, viscous fluids, or slurries and pastes.

The HL<sub>f</sub> controller has a keypad and LCD, as well as built-in and optional interfaces for computer control and other devices. Programming is easy and flexible, with instant access to menu screens even when the pump is running. This allows you to change operating parameters on the fly.

### Chemical Compatibility

Wetted materials have been tested for compatibility with the following fluids.

- ethane
- butane
- diesel fuel
- isopropanol
- benzene
- ethylene
- butadiene
- jet fuel
- acetone
- ethylbenzene
- propane
- hexane
- ammonia
- acetonitrile
- propylene
- gasoline
- methanol
- heptane
- isobutylene
- methane



### Applications:

- Metering and dispensing in experiments and pilot plants where explosive conditions may occur
- Precision fluid addition in research and manufacturing processes
- Chemical/Reactant feed in chemical process development, catalyst evaluation, plastic formulation
- Accurate metering of liquefied gases

### Controller Features:

- Operating Modes
  - Constant flow or pressure with up to four pumps
  - Continuous flow or pressure with dual pump
  - Flow or pressure programming with a single pump
  - Dispense mode
- External Interface
  - RS232/485 serial interface
  - Analog voltage inputs
  - Digital inputs and output
  - Ethernet/USB

## 1000HL<sub>f</sub> Specifications

<b>Pump Module:</b>	1000HL <sub>f</sub>
<b>Capacity:</b>	1015 mL
<b>Flow Range (mL/min):</b>	1.0 µL–408 mL/min*
<b>Flow Accuracy:</b>	+ 0.5% of setpoint, (Maximum 1.5 µL/min seal leakage)
<b>Displacement Resolution:</b>	25.36 nL/stop
<b>Pressure Range:</b>	10–2,000 psi (0.7–137.9 bar)
<b>Standard Pressure Accuracy:</b>	0.5% FS, typical at constant temperature
<b>Optional Pressure Accuracy:</b>	0.1% FS, typical at constant temperature
<b>Wetted Materials (Standard):</b>	Nitronic 50, Graphite filled PTFE, TFE, Hastelloy C-276, Inert Polymers, Gold, Titanium
<b>Plumbing Ports:</b>	1/4" NPT
<b>Operating Temperature:</b>	5–40 °C Ambient
<b>Power Required:</b>	100 Vac, 117 Vac, 234 Vac, 50/60 Hz (specify)
<b>Dimensions (H x W x D)</b>	40.3 x 10.7 x 18.4 in (102 x 27 x 47 cm)
<b>Weight:</b>	Pump unit—84.9 lb (38.5 kg) Controller—6.5 lb (3.0 kg)
<b>Standards Conformity:</b>	UL 61010-1, ANSI/ISA 12.12.01-2012, CSA C22.2 No. 1010 and No. 213-M1987

\*Maximum flow rate is dependent upon operating pressure. (See manual for additional information.)

## 1000HL<sub>f</sub> Options & Accessories

- Temperature control jacket (i.e. cylinder cooling for filling with liquefied gas)
- Drivers for LabVIEW—National Instruments
- 4-20 mA inputs and outputs for flow rate and pressure control

## Ordering Information

1000HL <sub>f</sub> Pump Module, Nitronic .....	68-1260-016
HL <sub>f</sub> Series Controller, Basic .....	68-1260-013
HL <sub>f</sub> Series Controller with 4-20mA (only) .....	68-1260-011
Continuous Flow Air Valves, Hastelloy .....	68-1247-143
Manual Refill Kit .....	68-1247-117
Manual Outlet Kit .....	68-1247-118
Temperature Control Jacket .....	68-1247-115

1000HL<sub>f</sub>  
Continuous Flow  
System

