LFD1000 Series
Microfluidic Dispenser

The Products

LFD1000 series microfluidic dispenser is the first commercially available thermal time-of-flight (TTOF) liquid flow sensors integrated with a micropump. The flow sensor provides the precise feedback that controls the pump for a reproducible delivery of the microfluid. For the water based microfluidic dispensing, the product has a resolution up to 20µL/min with a turn-down better than 10:1.

It can be applicable for both liquid and gas.

Features

⊙ General purpose fluid dispensing
⊙ Precisely controlled with microfluidic flow sensor
⊙ Resolution better than 20µL/min
⊙ Dynamic ranges over 10:1
⊙ Optional mechanical and electrical interfaces
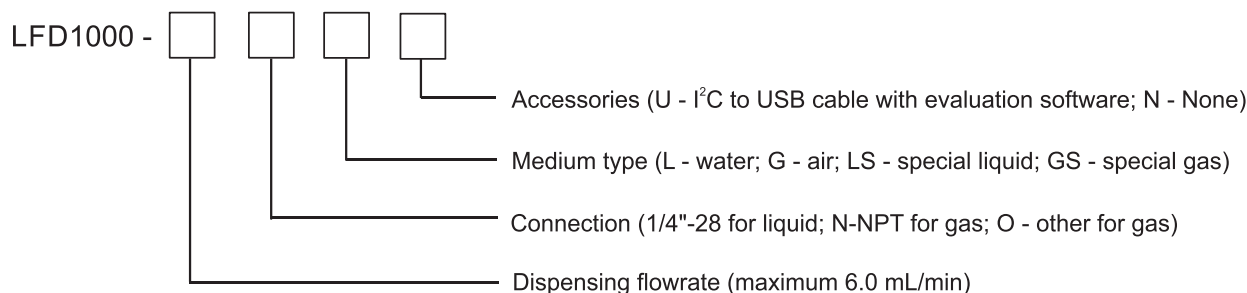⊙ Long pump lifetime

Mechanical Dimensions
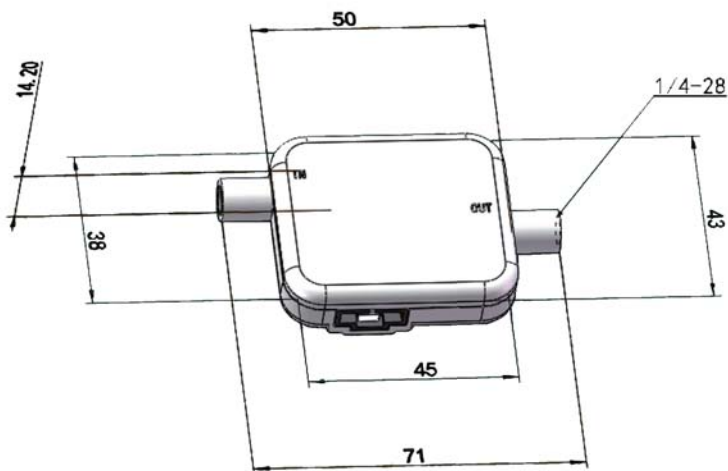
Specifications

	Value	Unit
Dispensing Range		
- Liquid	0.5 ~ 6.5	mL/min
- Gas	2.0 ~ 20.0	mL/min
Resolution [1]	± 0.05	mL/min
Accuracy	±3% or ±0.05mL/min, which ever is greater	
Pressure rating	2.0	bar
Back pressure	0.6 (liquid); 0.1(gas)	bar
Temperature rating	0 ~ 60	℃
Humidity (for gas)	0~90%RH and no icing or condensation	
Power supply	5 (±10%)	Vdc
Warming up time	200	msec
Settle time [2]	<20 (liquid); <5 (gas)	sec
Interface for control	I^2C	
Mechanical connection	1/4" - 28 (liquid); NPT or customized (gas)	
Wetted materials	Polyphenylsulfone, PEEK, SiNx, and stainless steel or aluminum alloy	
Reference conditions	20°C, 1013 mbar; DI water (liquid) or air (gas)	
Storage temperature	-10 ~ +70	℃
Pump lifetime	5000	Hours
Protection	IP50	
CE/RoHS	EN61326-1; -2;-3	

1. 0.02mL/min achievable for a stable flow.
2. Settle time is dependent on the requirements of a stable flow dispensing. If an larger than the specified errors allowed, a faster dispensing can be achieved.

Product Selection

The product part number is composed of the model number and suffixes indicating the full scale flow rate for dispensing, as well as the other parameters. Refer to the followings for details.

LFD1000 -

Accessories (U - I^2C to USB cable with evaluation software; N - None)

Medium type (L - water; G - air; LS - special liquid; GS - special gas)

Connection (1/4"-28 for liquid; N-NPT for gas; O - other for gas)

Dispensing flowrate (maximum 6.0 mL/min)

Note: for special liquid or gas other than water or air, please contact the manufacturer.