

INSTRUCTION MANUAL

DIGIFLO 1000

Digital Gas Flow Meter



110 Toledo Street • Farmingdale, NY 11735 • USA

www.netech.org

Dear User,

We appreciate your purchase of the Digiflo 1000 Digital gas flow meter. Properly used, the Digiflo 1000 will deliver years of high performance and accuracy.

This instruction manual has been designed as a tool to assist you in getting the most from your Digiflo 1000. In order to properly use and to maintain this instrument, please read the manual carefully.

Netech is recognized as an innovative designer and manufacturer of advanced biomedical and industrial test instruments. We are ISO 9001 2000 registered and fully committed to a continual improvement process. Further, we guarantee absolute satisfaction with our products.

Your business is important to us and we are dedicated to providing you with the best customer and technical service possible. Please contact us should you have any questions or concerns regarding your instrument.

We hope you will consider us again when you have a requirement for accurate, reliable, affordable test instruments.

Sincerely,

NETECH CORPORATION

Copyright

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Quality Assurance

Netech Corporation is ISO 9001-2000 registered. This instrument was thoroughly tested and inspected according to Netech's ISO 9001-2000 quality standards and test procedures, and was found to meet those specifications when it was shipped from the factory.

Warranty

Netech warrants the Digiflo 1000 against defects in materials and workmanship for one year from the date of original purchase. ***The standard warranty is extended for a second year if the instrument is returned to Netech for its recommended yearly recalibration.***

During the warranty period, we will repair or, at our option, replace at no charge a product that proves to be defective, provided you return the product shipping prepaid to Netech Corporation. This warranty does not apply if the product has been damaged by accident or misuse, or as the result of service or modification by other than Netech Corporation, or if its serial number is defaced or removed.

Netech reserves the right to discontinue the Digiflo 1000 at any time, and change its specifications, price, or design without notice and without incurring any obligation. Netech guarantees availability of service parts for 5 years after the manufacture of the unit is discontinued.

The warranty is void if you elect to have the unit serviced and / or calibrated by someone other than Netech.

The purchaser assumes all liability for any damages or bodily injury that may result from the use or misuse of the unit by the purchaser, his employees, agents or customers.

In no event shall Netech Corporation be liable for consequential damages

Trademarks

Netech and Digiflo 1000 are trademarks of Netech Corporation. Any other trademark names used in this manual are only for editorial purposes and the benefit of the respective trademark owner, with no intention of improperly using that trademark.

Safety Considerations

General

Before using the DigiFlo 1000 read the instruction manual and become familiar with all of the functions and controls.

Safety Symbols

WARNING

The “**WARNING**” sign denotes a hazard. It calls attention to a procedure, practice or the like, which, if not correctly performed or adhered to, could result in personal injury. Do not proceed beyond a “**WARNING**” sign until the indicated conditions are fully understood and met.

CAUTION

The “**CAUTION**” sign denotes a hazard. It calls attention to a procedure, practice or the like, which, if not correctly performed or adhered to, could result in damage to or destruction of part or all of the instrument. Do not proceed beyond a “**CAUTION**” sign until the indicated conditions are fully understood and met.



The symbol to the left is the operator's manual symbol. When you see this symbol on the instrument, refer to the operator's manual.

TABLE OF CONTENTS

Introduction	7
Caution	9
Functional Overview	10
Operations & Control	10
Menu Description	11
Flow Measurement	11
Gas Selection Peak	12
Gas Connections	12
Specifications	13
Instructions for Return	15

LIST OF FIGURES

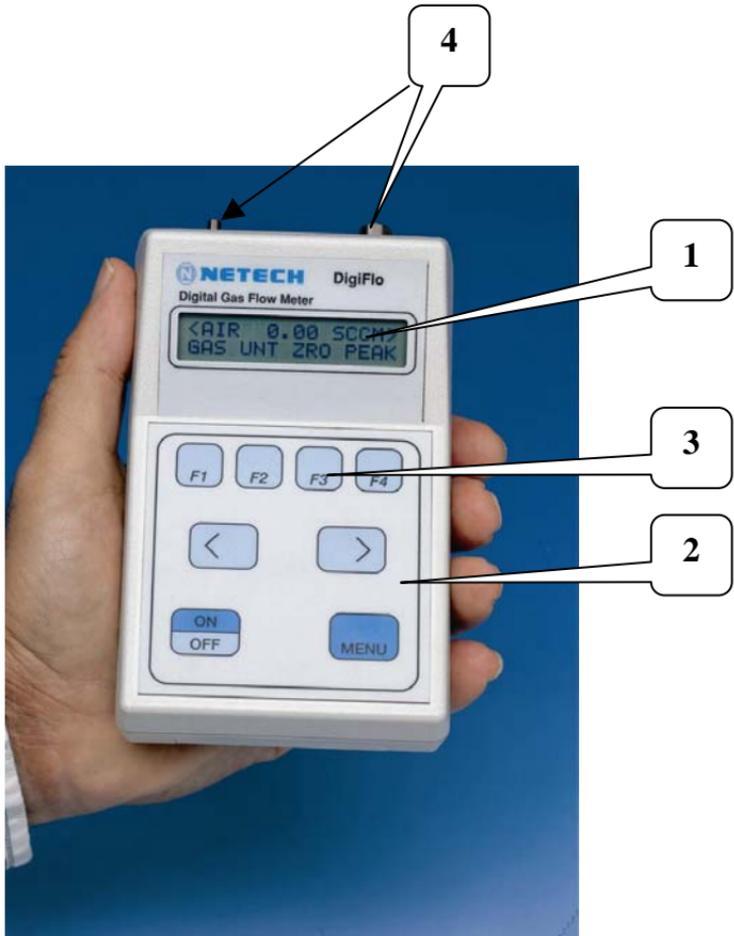
Figure 1	Front View DigiFlo 1000	8
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INTRODUCTION

DigiFlo is a micro controller based, hand –held air and gas flow meter designed for the accurate measurement of volumetric flow, which is independent of temperature and pressure. The measurement of the DigiFlo is direct and no correction is required for temperature and pressure unlike the “bubble flow” meters and “diaphragm” type flow meters. No water vapor corrections are necessary as with bubble meters.

DigiFlo incorporates an accurate micro-mass flow sensor, which operates on the theory of heat transfer due to mass airflow directed across the surface of the sensing element.

Though the DigiFlo is menu driven and user friendly, it is recommended to read the following sections to familiarize the user of all aspects of operation.



1. **Display:** Two line 16 Character LCD
2. **Keypad**
3. **Function Keys**
4. **Two Lure Locks for Gas Connection**

Figure 1
Front view of DigiFlo 1000

CAUTION

Before attempting to use the DigiFlo, please observe the following precautions:

1. When using the DigiFlo in line with a flow source, the input pressure should not exceed 20 PSI.

Hammer pressure levels in excess of 20 PSI will cause damage to the transducer.

2. Do not use the DigiFlo to measure gases containing liquid or liquid vapor.
3. Do not exceed a flow rate of 500 SCCM. If the DigiFlo is subjected to an overflow condition erroneous readings will occur and the unit may require re-calibration.
4. Do not use the DigiFlo to measure corrosive gases or H₂ gas and He gas.

Any of the above conditions may cause damage to the transducer and is not covered under Warranty.

FUNCTIONAL OVERVIEW

On Power up, the microcontroller performs a self-test and displays the model and software version for five seconds. If the battery voltage drops to below 6.8 volts, the microcontroller senses this and alerts the user by flashing the message “ Low Battery”. Do not use the DigiFlo should this message appear unless a fresh battery is installed or the unit is powered with the optional AC power adapter.

For the accurate performance of the DigiFlo, always use a fresh battery or AC adapter. Low battery condition will cause erroneous readings.

OPERATIONS & CONTROL

The display on the DigiFlo is a two line 16 character LCD. The Keypad consists of 8 tactile momentary keys marked as F1, through F4 hereafter referred to as the function keys. Left arrow (<), right arrow (>), menu and on/off.

MENU DESCRIPTION

On Power up, after displaying the model and software version, the display switches to the main menu as shown below:

<AIR 0.00 SCCM>
GAS UNIT ZRO PEAK

The top line indicates the gas selected, (The default selection is AIR), the reading, and the unit of measurement.

The bottom line shows four choices. To select these functions, use the function keys F1 to F4. The choices are:

GAS: Selection of gas under measurement

UNT: Unit of Measurement (The DigiFlo only measures in SCCM. Standard Cubic Centimeters per Minute)

ZRO: Zeros the display prior to actual measurement.

PEAK: Enables the peak capture mode of operation.

FLOW MEASUREMENT

From the main menu, select the gas to be measured. Connect the DigiFlo to the flow source. Insure the **system pressure** will not exceed **20 PSI** and the rate will not exceed 500 SCCM. The gas flow rate will be indicated in SCCM, and read directly without any conversion.

For in line operation connect the DigiFlo in line with the flow source. Observe the correct orientation with respect to input/output.

GAS SELECTION PEAK

From the main menu, press F1 key to select the desired gas under measurement. The available gases are displayed on the bottom line. Gases that the DigiFlo will measure are AIR, N2, O2, and CO2. The gas to be measured can then be selected by pressing the corresponding function key. The selected gas will then be displayed on the top line. After the gas selection is made, pressing menu will return the user to the main menu. The unit of measurement cannot be changed on the DigiFlo 1000. For PEAK readings press F4. The PEAK function flashes, indicating that the value displayed is the PEAK capture reading. To remain to the normal mode, press PEAK (F4) again.

GAS CONNECTIONS

The gas connections are made through the two “Lure Lock” connections on top of the unit. The left connector is for the input. The right connector is for the output. Reversal of these connections will result in a negative reading.

SPECIFICATIONS

FLOW RANGE: 0.1 to 500 SCCM auto-ranging

MAX. PRESSURE: 20 PSI

CALIBRATED GASES: Air, N₂, O₂, and CO₂

ACCURACY: +/- 2% FS, +/- 10 Digits

SENSOR TYPE: Micro Bridge Mass Flow

POWER REQUIREMENTS:

One 9 volt alkaline battery or
Optional AC Adapter

DISPLAY: 2 Line 16 character LCD

CONNECTORS: Luer Lock

PHYSICAL DIMENSIONS:

Size: 6.0 X 3.5 X 1.5 inches
(15.2 X 8.9 X 3.8 cm)

Weight: 10 oz (.28 kg)

ENVIRONMENTAL:

Operating range: 59 to 95⁰ F (15 to 35⁰ C)
Storage Temperature: 0 to 122⁰ F (-18 to 50⁰ C)
Relative Humidity: 90% (max) at Temperatures

APPENDIX

INSTRUCTIONS FOR RETURN

Damaged in Transit:

All shipments are carefully examined by NETECH and carefully packaged for shipment. They are insured in the customer's name with the carrier. On receipt, if the shipping container appears to have been damaged during shipment, the instrument should be thoroughly inspected.

The delivering carrier's paper should be signed noting the apparent damage. If the instrument is damaged beyond use, a new order should be placed with NETECH while awaiting reimbursement from the carrier for the damaged instruments.

Malfunction:

Please follow these steps for the repair or recalibration of your NETECH instrument:

1. Obtain a Service /Repair Form from our website at

www.Netech.org

Or from

Customer Service Department

Phone: 631-531-0100.

Fax: 631-531-0101

Toll Free: 800-547-6557

2. Complete the Service Form indicating the instrument's model number, serial number, shipping, and billing information. Include the purchase order number or credit card information for the cost of the repair and/or recalibration.

3. Securely package your instrument in a strong box, surrounded by at least two inches of suitable shock absorbing material.
4. Include a copy of the purchase order, or reference your purchase order on your packing slip.
5. Include the completed Service Form.
6. Ship the instrument to the following address:

**NETECH CORPORATION
110 TOLEDO STREET
FARMINGDALE, NY 11756 - USA
ATTN: SERVICE DEPT.**

Please visit our web site www.Netech.org for the latest product updates and new product releases.