Digiflo™

DIGITAL FUEL FLOW
INDICATOR and TOTALIZER
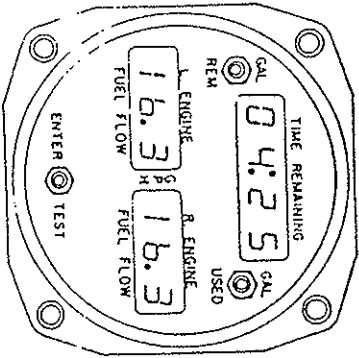
OPERATING MANUAL

(FOR P/N'S: 910501 AND 910502)

SHADIN CO., INC.

TABLE OF CONTENTS

LIMITED WARRANTY

SHADIN CO., INC. warranties to the original buyer of this product that it is free from defects of material and manufacture under normal use and service conditions. SHADIN CO., INC. will repair or replace without charge for a period of _____ year from the date of purchase (invoice date) any part which upon examination it shall disclose to its satisfaction to be defective. The product must not have been previously modified, repaired or serviced by anyone other than authorized service by SHADIN CO., INC., and the product must not have been subject to accident, negligence, alteration, abuse, misuse or operated in a manner contrary to the instructions pertaining to said product

No other warranties, either expressed or implied, including warranties of merchantability and fitness for any particular purpose, will be applicable to the product; under no circumstances will SHADIN CO., INC. be liable for consequential damages sustained in connection with the product; and SHADIN CO., INC. does not assume or authorize any representative or other person to assume for it any obligation or liability whatsoever other than as is expressly set forth hereinabove

NOTES

DIGIFLO™

Although the FAA does not require it, it is recommended that this manual be attached to the FAA approved Flight Manual, or always kept on board for handy reference.

1. SYSTEM DESCRIPTION

DIGIFLO™ is a Digital Fuel Flow Meter designed to improve fuel monitoring and management through a digital display of fuel flow, fuel remaining, fuel used, and time remaining within an accuracy of 2%.

DIGIFLO™ is designed for use in both injected and pressure carburetted engines. In the latter, a fuel flow transducer is added in the return line, enabling the instrument to subtract the return flow and display actual net fuel flow.

1.2 FUEL FLOW TRANSDUCER

The fuel flow transducer(s) mounted in the fuel line(s) measures the flow of fuel and generates electrical pulses directly proportional to the amount of fuel flow. The transducers are fail-safe designed; rotor blockage will not interrupt fuel flow.

1.3 PANEL MOUNTED UNIT

All system electronics, control functions and digital displays are contained in a single instrument that mounts in a standard 3-1/8" and requires no maintenance, adjustment or calibration once properly installed.

DIGIFLO™ features solid state electronic components and a microprocessor designed to count the pulses generated by the fuel flow transducer and convert it to gallons.

Fuel flow in gallons is continuously displayed. Time remaining, gallons used, and gallons remaining are continuously computed and either displayed or stored for later display.

During power shut-down, the amount of fuel remaining is stored in the memory powered by an internally charged battery.

Time remaining calculations are based on gallons remaining and actual fuel flow, which means that reducing the power or leaning the mixture will result in increasing the time remaining.

If the calculated time remaining at any particular power setting drops below 30 minutes, the "Time Remaining" digits in the display window will start flashing.

2. PREFLIGHT PROCEDURES

DIGIFLO™ is a fuel flow measuring system and NOT a sensing device which determines the amount of fuel available in the fuel tanks. It is therefore imperative that the usable fuel be entered into the system to update the computer. A visual inspection of the fuel tanks is strongly recommended.

2.1 PREFLIGHT CHECK

Apply D.C. power to fuel flow meter by having the aircraft master switch on. Press the test switch for more than one second. All figures will flash sequentially for ten seconds. If the computer checks out, the word GOOD will show in the top window for 3 seconds. There is NO display of time remaining in top window.

4. SPECIFICATIONS

SPECIFICATIONS

Digital Fuel Flow Meter Catalog Number 4005-000

Maximum usable fuel: 999.9 gallons
Maximum altitude: 40,000 ft.
Operating Temperature: -30 to 50° C
Humidity: up to 95% @ 32° C
Accuracy: better than ± 2%
Flow Range: .6-60 GPH/Engine

ELECTRICAL RATING

Input voltage: 14-28 volt D.C.
Input current: 500 ma @ 14V. or
28V. Avg.
Memory Battery (internal): Internally charged
nickel cadmium
GE 3.6V.

MECHANICAL RATING

Vibration: 5g
Weight: Panel Unit: 1.3 lb.,
Transducer(s):
App. 5 oz. each

TRANSDUCER SPECIFICATIONS

Model Number: 201B
Flow Range: 0.6-60 GPH
Linearity Across Flow Range, ÷ 1% (8-60 GPH)
percent of reading: ÷ 3% (0.6-60 GPH)
Average K Factor (pulses/gal): 84,000
Working Pressure: 200 psi
Minimum Bursting Pressure: 2000 psi
Temperature Range: -65 to 125° C

- Press "Gallons Used" button; upper window will display gallons used since last reset.

- Press "Gallons Remaining" button; upper window will display gallons of fuel remaining onboard. Pilot should confirm this figure with actual fuel onboard.

2.2 NO FUEL ADDED

As data is already stored, no action is needed. Upon starting the engine(s), the computer will display fuel flow and time remaining. the other two functions become available by pressing the appropriate buttons.

2.3 FUEL TANKS FULL

- Press the "Gal. Rem." button and HOLD.

- Press the "Enter/Test" button to increment fuel quantity until the total usable fuel is reached. (The longer you press, the faster the incrementing.)

- Release the "Enter/Test" button and the total usable fuel onboard is entered into the memory.

2.4 PARTIAL FUEL ADDED

Add the amount of fuel remaining to the amount of fuel from the refuelling meter. Enter this number as follows:

- Press "Gal. Rem." button and HOLD.

- Press "Enter/Test" button to increment fuel quantity until the figure to be entered is reached.

- Release "Gal. Rem." button. The total usable fuel onboard is entered into the memory.

2.5 CORRECTING INPUT ERROR

In case an error has been made by exceeding the correct amount in entering the number for total usable fuel, press "Gal. Used" button and simultaneously press "Enter/Test" button. Gallons used will be reset and the fuel remaining will appear on display for 4 seconds. The figures will decrement until the correct figure is reached (the longer you press, the faster the decrementing).

2.6 TEST FUNCTION

The test function will enable the pilot to check the software and hardware against malfunction through simulating two sample rates and checking the results against stored results. To do so, press the "Test" button. All digits will display "8" sequentially for ten seconds. If the computer checks out the word "GOOD" will show in the top window. If the test is not successful, the word "BAD" will be be displayed.

NOTE: Using the test function while engines are running will cause the computer to lose 13 seconds of fuel count.

3. INFLIGHT OPERATION

3.1 INSTRUMENT OPERATION

Fuel flow and time remaining (in hours and minutes) are continuously displayed.

To display gallons used or remaining, press the appropriate buttons.

Gallons used may be reset at any time by pressing "Gal. Used" and momentarily pressing the "Enter/Test" button no longer than 4 seconds. Otherwise, the computer will start decreasing the fuel remaining.