



Rev1.4

OPERATIONS MANUAL for TAS V1000 VARIO

14/02/05



INTRODUCTION

This instrument is designed to satisfy a need for a product that utilises the most current technology to produce the best possible performance at the lowest possible cost. It accommodates and expands on all the most important functions of a standard Vario, ie. Audio, current lift/sink rate, and includes the primary feature of an average display in the same small package.

Considerable effort has gone into developing an audio tone and pattern to convey to the pilot the maximum information without being intrusive or annoying. The result maximizes the pilots lookout time without the need for visual confirmation of the current climb rate.

FEATURES

- The instrument is centered on a custom LCD display. It incorporates two sections: a 270 deg. bar graph sweep display for visual representation of current climb rate, plus a 2.5 digit seven segment screen for current/average display (0-19.9). See fig 1.
- All functions are simply implemented by two front panel buttons. Normal operation consists of depressing the “PWR” switch for 1sec to select on/off. Audio volume is set by tapping + or -.
- As all control functions are implemented with a microcomputer. A simple mode selection procedure can change a number of operating functions such as response speed and displayed values to suit the user.
- A communications port is provided for connection to a “slave” display for two seat aircraft and a flight computer.
- The sensing is via a temperature compensated pressure transducer which, for glider applications, would normally be connected to a TE. probe. NOTE: no flask is required.
The instrument is in a standard aircraft pattern 2 1/4 inch circular face mount enclosure.
- Power is from an external 9-16V DC source and consumption is minimal (approx. 20mA depending on audio volume). Connections are made through rear panel modular or telephone type sockets via the cables supplied.



FIG 1

FEATURES

display

Current value display.

21 segments: selectable via front panel FUNCT/SELECT switches as +/-10 FSD or +/-20.FSD. (see settings below).

Digit display.

As either average or current value. Note: this display section also used to indicate current "MODE". (see "operation" below) and battery voltage.

LOW BAT

Illuminates if the voltage drops below 10.5 Volts, see below.

audio

Speaker

Internal: an extra external speaker. (25 ohm or higher) can be connected by splitting the power cable. Tasman Instruments SP190 recommended.

Volume selection via front panel switches.

power

9-16V DC polarity protected by internal fuse.

When the Variometer is powered on, the instrument supply voltage is tested and as a result of this test one of two modes are selected.

1. 12 volt supply: The LO BATT signal illuminates at 10.5 volts.
2. 9 volt supply: The LO BATT signal illuminates at 7.2 volts and the audio is not available.

The second mode is to allow operation from a 9V PP3 Alkaline type battery and will supply about 20 hours operation.

The Variometer will operate at full specification down to a supply of about 7.0 volts but will continue to operate to around 5 volts.

units

Knots or meters/second (V1000M)

average

20 sec.

memory

All settings are retained in memory and are restored on power up.

battery volts

Read battery volts directly by pressing both buttons simultaneously.

SWITCHES

The two push button switches have multiple functions;- These are in two groups:

1. Operation

Power; the RED button.

To power instrument ON:- press and hold PWR for one second. The display shows all segments for a few seconds and a single BELL will be heard. Two BELL sounds would indicate a memory fault has occurred and default values will be used.

To power instrument OFF:-press and hold PWR for approx **two** seconds.(the digit display counts from 2 down).

Volume

The volume has five settings; TAP + or - to increase or decrease.
("TAP" is push and release) The display shows the current setting as: **v1-5** for about 2 seconds after a key tap.



Battery Voltage

Pressing both buttons simultaneously will display the battery volts.
Note: the current value display and audio are suppressed.



This instrument is designed for sports aviation uses only.

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2. Setup

There are various MODES accessible via SETUP:

They are entered via. the FUNCT or “function” button and modified by the SEL or “select” button.

NOTE: No key press for 2 seconds will accept the value displayed and return to the normal display.

FUNCT; the Yellow button.

If this button is held down the audio is silent. If held down for more than one second a BELL will be heard and the current value display will be blank. The Digit display will now be a “SETUP” screen. Now release the key.

Each “TAP” of the FUNCT key will cycle through the modes from 1-4.

MODE 1 - average display:

The screen will show **F** or **SL**

F-(fast) The digit display will show the current value (see mode 3).

SL-(slow) The digit display will show a 20 second average value

TAP “SEL” to toggle.



TAP FUNCT

MODE 2 - full scale set:

The screen will show **5** or **10**

10- The current value display is +/-0-10 FSD.

5- The current value display is +/-0-5 FSD.

Note: m/s units display 2.5 or 5.0 FSD

TAP “SEL” to toggle

Note: The average display will not change.



TAP FUNCT

MODE3 - response time:

The screen will show **r1-7**.

1=1sec response time and it is incremented by 0.5 sec.

ie. **r3**=2 second response



TAP FUNCT

MODE 4 - tone on sink on/off:

The screen will show **t1** or **t2**

t1 tone on climb only.

t2 tone on climb and sink

TAP “SELECT” to toggle



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SPECIFICATIONS.

SIZE: H.62mm, W.62mm, D.85mm.
MOUNT: STANDARD 2,1/4 INCH CUTOUT.
WEIGHT: 245grams
POWER: 7.5-16VDC 20mA nom.(zero volume)
ACCURACY: 3%.FSD
RESOLUTION: 0.1
DISPLAY UNITS: KNOTS/ meters/second
SAMPLE RATE: 4/SEC.
ALTITUDE: -1000ft TO 35000ft.
OPERATING TEMP: -10 TO 70 DEG. CENTIGRADE NON CONDENSING.

OPTIONS.

REPEATER DISPLAY.

EXTERNAL SPEAKER.

OTHER UNITS SUCH AS FT/SEC or METERS/SEC ON REQUEST.

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