

TAS 1000

The Essential Component For Your GPS System

Multi-Function Data Source

www.insightavionics.com

TSO'd and STC'd



Unlock The Power In Your GPS

Insight
Instrument Corp.

Here's Why You Need Insight's TAS 1000 MFDS

TAS 1000

Multi-Function Data List:

Air Data Functions

Pressure Altitude
Barometric Setting
Density Altitude
Density Altitude Difference
Indicated Air Speed
True Air Speed
Ground Speed
MACH Number
IVSI
Climb/Descent Gradient
Total Air Temperature
Static Air Temperature
ISA Temperature
Battery Voltage

Alert Functions

Altitude Alerts
Overspeed Warning

Fuel Functions

Total Fuel Flow
Total Fuel Used
Total Fuel Remaining
Left Fuel Flow
Left Fuel Used
Right Fuel Flow
Right Fuel Used
Fuel Flow Left/Right
Fuel Efficiency

Wind Functions

Wind Speed
Wind Direction
Wind Component
Wind Correction Angle

Exclusive Jet Functions

Take-Off Decision Speed
Rotation Speed
Take-Off Distance
Take-Off Power Setting
Climb Speed
Approach Speed
Landing Distance
Current Aircraft Weight
Static Error Correction

TAS 1000 - technology you will use every flight.

The essential component for your GPS system

Today's modern avionics integrate many functions with your GPS, but standard installations leave many important features untapped. The TAS 1000 Multi-Function Data Source was specifically designed to supply all the information needed to fill in the missing pieces of your GPS or MFD display in real-time.



Stand-alone multi-function instrument

In addition to its role as an important partner in your GPS system, the TAS 1000 MFDS is a versatile multi-function instrument. Configured by the pilot to meet exact needs, TAS 1000 is simple and user-friendly.

I just love that Windicator™!

Everyone underestimates the importance of having an instantaneous display of wind speed and direction until they see it in action. Once pilots have experienced flying with the Windicator™, they won't fly without it!



Full function fuel computer

The simple dedicated fuel computer is now obsolete. The TAS 1000 MFDS offers extensive fuel management information, and is user configured using a rotary switch for fuel setting. TAS makes it easier and faster to initialize, than other fuel computers.

An altitude alerter

The TAS has the best, built-in Altitude Alerter on the market. Unlike other add-on alerters that depend on the coarse resolution of an altitude encoder, the TAS uses baro-corrected altitude derived directly from static pressure.

Improve safety and precision of your IFR procedures with TAS 1000's altitude alerter.



The magic baro connection

Modern GPS systems require a baro setting input. The TAS 1000 MFDS can read baro setting from many types of altimeters, incorporate it into its calculations, and transmit to most GPS's. The pilot just sets the altimeter and everything else is automatically updated.

Gradient may save your life

Among the many features that are unique, the TAS 1000 MFDS displays Gradient. The rate of climb or descent is expressed in feet per nautical mile. Safe IFR arrival and departure procedures depend on minimum gradients for safe obstacle clearance. Most pilots have little practical experience gauging gradient. It changes with airplane configuration, engine performance, altitude, temperature, and wind. Gradient becomes critically important when an engine fails. The TAS allows you to maximize glide gradient in a single. In a twin, on one engine, blue line speed rarely offers best performance. However, the TAS display in feet per nautical mile is a direct measure of climb performance under all conditions. Knowing your gradient performance in an emergency can make a critical difference.



SAT temperature will clarify your icing decisions

When an aircraft is in motion the OAT probe reports a temperature higher than the surrounding air. The faster the indicated airspeed, the greater the error. That is why pilots are taught icing can occur in above freezing temperatures. Of course it can't. The TAS 1000 MFDS computes Static Air Temperature, that represents the actual temperature of water droplets in the cloud. When you use SAT, your icing decisions will be a lot clearer.



ISA temperature, the key to your performance charts

Does your airplane meet the book? Pilot Operating Handbook tables require temperature expressed as a deviation from a standard that changes with altitude. The TAS computes the required ISA temperature from altitude, airspeed, and outside air temperature. Erroneous temperature data will destroy the accuracy of any performance calculation. The TAS provides the correct value.

End your altitude encoder woes

Inexpensive blind encoders are the most common causes of altitude reporting problems. The TAS 1000 MFDS's accurate altitude information can be sent to your transponder and GPS. It is aviation's most precise encoder.

Important backup for your essential IFR instruments

Safe flight in IFR conditions demands precise altitude, air speed and vertical speed information. With near perfect accuracy, the TAS 1000 will serve as a standby altimeter, air speed and IVSI, independently of the primary instruments.

Land off airport with wind information

Helicopter, seaplane, EMS, and bush pilots who land off airport can now have the advantage of real-time, right-now wind information.

Simplify floatplane operations

Floatplanes offer a challenge like no other airplane. Every landing is different. The pilot alone must assess the wind conditions and decide where to land. The Windicator's™ accurate real-time wind information ensures landing directly into the wind on every approach. Even as the winds change below the tree line or near rugged terrain, the Windicator™ keeps you informed. For floatplane operations, it's magic.

Predict wind shear on approach

Wind shear is invisible and takes its victims by surprise. Sudden and significant loss of airspeed can bring even the biggest airplane down. Knowledge of real-time wind information on short final can prevent wind shear accidents. When the winds reported by the tower and the Windicator™ differ, you know there will be a wind shift during the approach.

Optimize the winds

Work the winds to your best advantage on every flight. You'll save time and money when you do. Pick the best tail wind or the least head wind and easily decide on best speed or range. The dynamic display of actual fuel efficiency responds immediately to changes in conditions so you can assess the effect of winds even in climb.

Aerial application

Drop your payload with Windicator™ accuracy.

Jet parameter functions

Jet aircraft flight parameters based on current conditions are immediately available on the TAS display. You need not refer to charts, tables or graphs or calculate anything by hand. Just turn the knob to display V1, Vr, V2, Vref, etc for current conditions. This information is custom tailored for your specific aircraft.

Insight has a **TAS 1000 MFDS** for every type of aircraft:



Single Engine



Twin Engine



Helicopters



Float Planes



Aerial Application Aircraft



High Altitude Turboprops and Jets

Versatile

TAS 1000 Multi-Function Data Source is several instruments in one. Prior to Insight's innovation, several instruments were required to provide the functionality now available in one small box. Fuel totalizers have long been a part of the GA cockpit, but air data has traditionally been available only for heavy aircraft - until the TAS 1000.

Affordable

Air Data computers evolved in jets as a component of sophisticated autopilots, as a data source for FMS (flight management systems), and inertial navigation systems. The TAS Multi-Function Data Source can provide the same functionality for at a fraction of the cost.

Advanced

Those who fly jet aircraft are also served by the Insight TAS 1000, as it is TSO certified to 55,000 ft and 500 kts, and can be purchased with additional high performance options.

Certified Accuracy

While the TAS 1000 meets the stringent requirements of no less than 5 FAA TSO's, it comes with actual calibration documents to prove it. Don't be surprised to see accuracy ten times better than the requirements.

TAS 1000 - technology you will use every flight.

Aviation's most advanced winds aloft computer.

Windicator™ continuously shows the complete wind picture in real-time.

Actual winds aloft for the aircraft's current altitude.

Wind direction relative to the aircraft's heading.

Head/tail wind component.

Wind correction angle.

Wind Computer Functions:

Wind Speed

Inner Graph

Wind Direction

Lit Pointer

Wind Component

Blinking LED

Wind Correction Angle

Inner Bar

Wind data is displayed in three ways: graphically on the windicator™, digitally on the TAS 1000, and on your GPS wind pages or EFIS display.

Below we show a Bendix King EFIS display that shows a wind direction arrow and the number 50 which represents the wind speed.



Knowledge of winds on short final may save your life.

Windicator™ has **REAL-TIME, RIGHT NOW** Winds Aloft



The Insight "Windicator™" is truly unique. It packs an amazing amount of information in a tiny package the size of a silver dollar. Wind speed, direction, component, and correction angle are displayed simultaneously in an easy to interpret format. Wind information displayed on the Windicator™ differs significantly from that displayed on a GPS. The Windicator™ has **REAL-TIME, RIGHT NOW** information. Surprisingly some popular GPS units do not calculate the winds correctly and others are so heavily averaged they may take 20 minutes to settle on the right value. TAS wind information is immediate, accurate and reliable.

The Windicator™ has application in all phases of flight. In climb and cruise, the pilot can determine the best tail wind or the smallest head wind. In cruise, the pilot is alert to changes in wind direction and speed. These may be compared with winds aloft forecasts. The passage of fronts and other meteorological phenomenon can be detected. When the wind forecasts are inaccurate, the weather forecast is likely incorrect too. Correction angle aids course interception and navigation. Enroute course changes and holding pattern entries are simplified. In descent and approach the "Windicator™" is indispensable allowing smooth intercepts of a localizer or inbound course. Comparing surface winds with the actual winds on the Windicator™, will warn of a wind shear. In the event of an emergency off airport landing, the pilot can land into wind.

Prediction of wind shear

The Windicator™ is aviation's only dedicated dynamic display of wind data, and the industry's only PREDICTOR of wind shear. Knowledge of the wind on short final can save your life. The Windicator™ provides the information you need to predict wind shear.

Wind shear is invisible and strikes without warning. It is an abrupt change in wind speed or direction. When this change results in a loss of airspeed and lift near the ground, a crash may be unavoidable. A specialized form of shear caused by a microburst, is associated with severe thunderstorm activity, but ordinary wind shears can happen anywhere - anytime there is a wind.

The key to avoiding a wind shear accident is predicting when the wind will change. All you need is a Windicator™ and a surface wind report. If the Windicator™ reports a 40 knot wind when the tower reports only 10 knots, you know the winds will change. When you see this on short final, you know it will happen soon. The knowledge of a wind change permits experienced pilots to add a safety margin to approach speed. A large wind shear should be avoided at all times.



Wind **direction arrow** with **wind speed** on the moving map page of Garmin GPS units.

TAS 1000's

Windicator™ displays winds aloft from lift-off to touchdown in real-time.



Windicator™ on approach with a 90 degree turn on to final.



1: On Approach - Windicator™ shows 40KT wind speed, 12KT tail wind and 15 degree left crab.

2: Turning on final - Windicator™ shows 40KT wind speed, 22KT head wind and 10 degree left crab.

3: Now on final - Windicator™ shows 40KT wind speed, 34KT head wind and 5 degree left crab.

Question: Winds don't match what tower is reporting, will I encounter wind shear on approach?



Gear and flaps down descending on final approach with Windicator™ showing a 32kt wind speed, 30kt head wind with a 5 degree right crab.

“Looking Good”



Suddenly your Windicator™ shows an abrupt change from head wind to tail wind.

“Abort”

Wind Facts:

Microburst

A microburst is a small diameter downburst of wind, with outbursts of damaging winds extending 2.5 miles or less. (despite it's small horizontal scale, a microburst can induce wind speeds up to 150 knots or 172.6 miles per hour)

Temperature Inversion

Air temperature generally decreases at a rate of about 2°C/1000ft of altitude. Occasionally the air above will be warmer than below. In unusually extreme cases the temperature may increase 20-30°C in a few hundred to a thousand feet or so. Inversions are identified when the temperature remains constant or rises during climb.

Wind Shear

Wind shear is defined as a change in wind speed and/or direction within a short distance. It can be in either a horizontal or vertical direction, or both.

Wind Shear Escape Procedure

Wind shears that result in a loss of lift requires immediate action from the pilot. If the loss of lift is small, a slight pitch up and/or increase in power may be all that is required. If the loss of lift is large, immediate application of FULL power and a large pitch up may be required. Wind shears are prone to happen near the ground where the risk of an accident is greatest.

TAS 1000 - technology you will use every flight.

Fully Integrated Fuel Computer

TAS 1000 automatically calculates, total fuel remaining, total fuel used, fuel flow and fuel efficiency.

Combining fuel data with GPS data provides accurate calculations of endurance, range, efficiency (mi/gal) and fuel reserves at destination.

With this valuable fuel information you will consult your GPS fuel pages on every flight.

The Insight fuel transducer avoids the risk of fire with an optical isolator. There is no direct electrical connection to airframe ground, and therefore no fire hazard.

User Configurable Fuel Functions:

- Total Fuel Flow
- Total Fuel Used
- Total Fuel Remaining
- Left Fuel Flow
- Left Fuel Used
- Right Fuel Flow
- Right Fuel Used
- Fuel Flow Left/Right
- Fuel Efficiency

User Selectable Units:

- Gallons
- Pounds
- Liters.

TAS 1000 - technology you will use every flight.

TAS 1000 FUEL FUNCTIONS

The most valuable feature of the TAS fuel computer functions is the integration of fuel and navigation data in the GPS. The GPS will display actual range, endurance, efficiency and fuel reserve at your destination. This information is dynamic and based on real-time data. If the wind changes so will your fuel reserve. It's easy to test the effect of different altitudes or power settings to optimize your range and minimize your flight time. You'll be able to skip some fuel stops with confidence.



TAS 1000 is simple and intuitive. It prompts for fuel entry at power up. Instead of chasing racing digits with a toggle switch, turning the knob increases or decreases the fuel quantity. The TAS also has three preset fill amounts. For example separate fuel quantities may be programmed for maximum fuel, maximum fuel less wing tips, and maximum fuel without an auxiliary tank. The three full fuel onboard filling amounts are accessed with first three counterclockwise clicks of the knob. After that, normal increment and decrement behavior resumes.

If you forget to set the fuel amount before take-off and you update in flight, the TAS automatically subtracts the fuel used from the filled amount. It's safe, precise and convenient.

A key feature that distinguishes this fuel computer from others is its user configurability. The pilot has a choice of display formats: fuel type, single/twin, aircraft fuel capacity, and gallons, pounds, or liters. Twin owners may chose a convenient dual display format of flow to both engines. The pilot may choose various configurations until the optimum setup is found. Trimming information

Fuel data from the **TAS 1000** can be displayed on a GPS receiver to provide complete flight management.

Below are just a few examples of GPS units displaying fuel data.



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Fuel sensor with diagnostic LED



Insight's Optional Fuel Sensor

The Insight transducer is unique in the industry. Other transducers have calibration factors, that vary from unit to unit. These transducers are not interchangeable. The Insight transducer calibration factor is identical from unit to unit and may be interchanged without affecting accuracy. Insight's fuel sensor is protected by a durable stainless steel case with an integral stainless mounting bracket for ease of installation. The transducer connector is waterproof. The entire assembly is designed to withstand the hostile environment of engine top mounting.

A built in diagnostic system confirms transducer function in a glance. Another exclusive safety feature is optical ground isolation. This prevents high current from flowing in the transducer circuit should the engine ground strap fail. While rare, it will destroy the fuel instrument, and has caused onboard fires. The optical isolation system also provides substantial immunity to engine and airframe electrical noise.

ALTITUDE ALERTER, Standard Function On All TAS 1000 MFDS's

An altitude alerter is designed to warn the pilot of deviations from a target altitude. While useful and convenient in cruise, it is most valuable during instrument approaches. Flying step down altitudes of GPS approaches are easier and safer with an alerter.

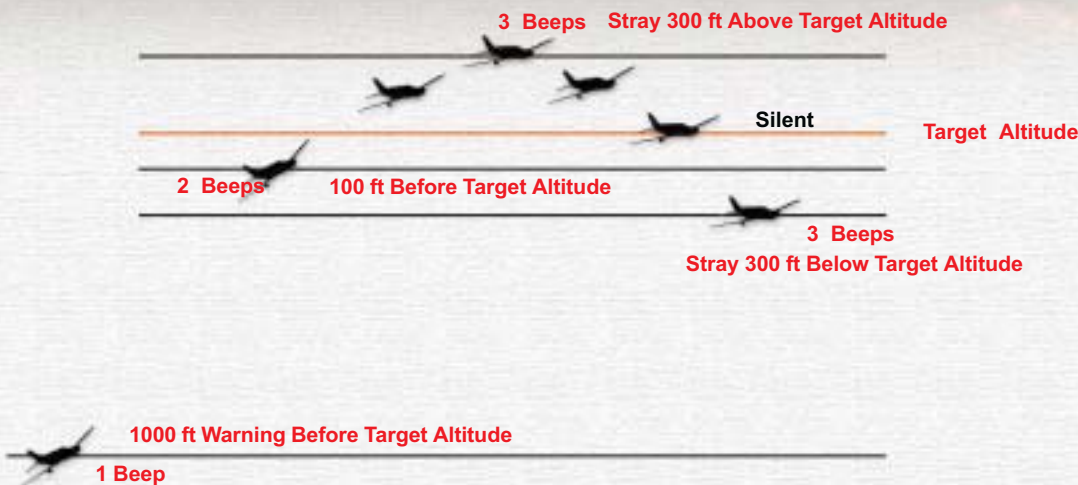
Alerters are mandatory in turboprops and jets, but troublesome and rare in piston aircraft. Add-on alerters have been prone to false alarms, require constant baro updating and were frustrating to use. The TAS alerter solves these problems.

Instead of reading encoder altitude, it has its own internal source of very accurate baro-corrected altitude derived directly from static pressure, so it performs precisely without false alarms.

TAS 1000 has the magic baro connection that will electronically read the baro setting right from your altimeter. Updating the baro on your primary altimeter updates your TAS altimeter, TAS alerter and GPS baro too. Automatically keeping the baro settings in perfect agreement prevents errors and false alarms. Like all other TAS functions the alerter is pilot configurable. You may tailor the warning band to meet your needs.

The TAS alerter is an integral function of all TAS systems, requires no extra equipment or installation time, no extra panel space and is included at no extra charge.

TAS 1000 MFDS Altitude Alerter in climb, cruise and approach.



Altitude Alerter in climbing to target altitude

Set target altitude.
 1000 feet prior to target altitude you will hear one beep.
 At 100 feet prior to target altitude you will hear two beeps.
 If you over shoot the target altitude you will hear three beeps.

Altitude Alerter in maintaining cruise altitude

Set cruise altitude.
 If you stray from cruise altitude you will hear three beeps.

Alerter Facts:

1000 Feet Warning

When the aircraft is 1000 feet away from the selected altitude the altitude alert you will hear one beep.

Target Warning

At 100 feet prior to target the TAS 1000 will activate the altitude alert and you will hear two beeps.

Outside The Altitude Warning Band

Once the airplane is inside the altitude warning band the TAS 1000 will enter the warning mode and remain silent. TAS 1000 will activate the altitude alert output and you will hear three beeps whenever the aircraft altitude goes above or below the altitude warning band.

New Target Altitude

If the pilot selects a different altitude alert value before the aircraft exceeds the altitude warning band, the TAS 1000 will not activate altitude alert output (equivalent with three beeps). Instead TAS will monitor the altitude and activate when the aircraft is 1000 feet away from the new target altitude selected value.

Configuring Altitude Warning Band

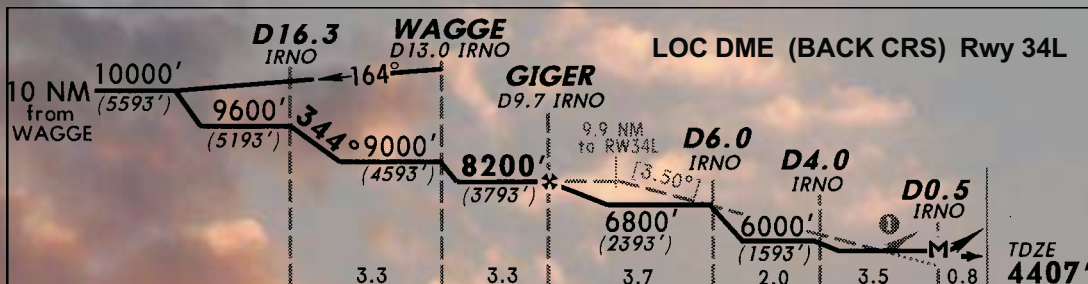
Alert warning function menu can be configured from the list of active menus in "Configuration Mode".

TAS 1000 - technology you will use every flight.

ALTITUDE ALERTER, Standard Function On All TAS 1000 MFDS's

Altitude Alerter on approach

On approach into Reno, Nevada (Classic example when altitude alerts are essential)



Encoder Facts:

Insight Instruments expansion module system provides altitude information and overspeed warning information to the pilot. It does so by receiving altitude and overspeed warning information from the **TAS 1000 Multi-Function Data Source**.

TAS 1000 measures static and pitot pressure, computes altitude and air speed every second, and sends them to the expansion module.

The expansion module acknowledges every successful reception of data, by sending back a special message to the **TAS 1000 MFDS**.

The expansion module receives the data, checks for transmission errors, converts the altitude to Gray code for use by the transponder or GPS. From the same data, the altitude encoder will determine whether or not it should activate the overspeed warning.

When the pilot wants to run an overspeed test he has to switch to this menu and push the button. During this test, the pilot should hear the overspeed warning.

TAS 1000 - technology you will use every flight.

The altitude alerter becomes an important and essential tool for an instrument approach. The TAS alert function prompts the pilot just prior to each step down fix and warns of deviations below the target altitude. Instrument approaches are safer and much easier. TAS 1000 altitude alerts add precision to any non-precision approach, guarding against an inadvertent descent into terrain.



To set altitude alert (AA)

- Push knob.
- Display will start flashing.
- Turn knob to desired altitude.
- Altitude alert function can be set in 100 foot increments from -900 to 54,900 feet.
- Push knob to stop display flashing.
- A new altitude is now set.

It is a good strategy to limit the information displayed on the TAS to data not shown on the GPS or other displays.

TAS 1000 Optional Encoder Module

Altitude Encoder / Overspeed Indicator

Insight's **TAS 1000** is an excellent altimeter with accuracy exceeding certified sensitive altimeters. A match box size module converts the TAS altitude data into encoder format. A unique feature of this module is the single cable connection to the TAS. This small cable conveys power and signal. This simplifies wiring and reduces complexity. Several modules may share this data buss to provide encoder information where needed, without running long multiconductor cables from the nose or tail.

This can save thousands of dollars in installation costs.

OVERSPEED

The TAS 1000 is TSO'd as a Mach overspeed and IAS overspeed system, features important in high performance turboprops and jets.

Every expansion module is programmed at Insight with overspeed alerts for your specific aircraft model type.





TAS 1000 MFDS with all the standard functions now offers advanced exclusive jet functions.

Jet pilots have to calculate flight parameters in preparation for every take-off and landing. This lengthy process involves calculating aircraft weight, outside air temperature, altitude, and other parameters to probe and interpolate various charts, graphs or tables.

The **TAS 1000** is ideally suited to this task because it measures all the input data needed to calculate this information. It couldn't be easier. Just enter the aircraft payload weight, then with a twist of the knob select the desired parameter.

Exclusive Jet Functions:

V1 - V₁ speed in knots: Take-off decision speed. Take-off can be safely aborted if the airplane has not reached V₁ speed. Past this speed, it is safest for the pilot to continue the take-off. V₁ speed varies with outside air temperature, altitude, airplane current weight and flaps setting.

N1 - N₁ setting: Engine take-off power setting expressed in percentage of maximum fan speed. N₁ varies with outside air temperature and altitude. The TAS 1000 calculates this value for the present altitude and outside air temperature.

Learjet 35A values are available. Contact Insight concerning other aircraft parameters.

V2 - V₂ speed in knots: This is the engine out best climb speed. It varies widely with airplane weight. A heavier airplane has a higher V₂ speed. TAS 1000 automatically calculates this value for the present weight of the airplane.

VRO - Vro rotate speed in knots: TAS 1000 automatically calculates this value for the present weight of the airplane.

TAK - Takeoff distance: This is the minimum runway length required for a safe take-off. Measured in feet, it varies with outside air temperature, altitude, and airplane take-off weight. TAS 1000 automatically calculates this value after fuel onboard and payload weight are entered.

VRF - Vref: This is the final approach speed in knots. TAS 1000 automatically calculates this value for the current weight of the airplane.

LAN - Landing distance in feet: This is the minimum runway required to land safely. It is measured in feet and varies with outside air temperature, altitude, and airplane landing weight. TAS 1000 automatically calculates landing distance.

CW - Current aircraft weight in pounds: PW payload weight + TFR fuel on board + EW empty weight = CW Current aircraft weight. TAS 1000 tracks aircraft weight as fuel is consumed.

Static error correction: Altimeter accuracy is affected by air speed. The airplane manufacturers provide static error correction charts, and special correction modules may be added to correct altimeters. Altimeters with static corrections are expensive and very delicate. TAS 1000 provides static corrections with the same or better accuracy, at no extra cost and with no additional hardware. Static corrections can be turned on or off in dealer mode.

TAS 1000

Jet Version Standard Function List:

Air Data Functions

Pressure Altitude
Barometric Setting
Density Altitude
Density Altitude Difference
Indicated Air Speed
True Air Speed
Ground Speed
MACH Number
IVSI
Climb/Descent Gradient
Total Air Temperature
Static Air Temperature
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Battery Voltage

Alert Functions

Altitude Alerts
Overspeed Warning

Fuel Functions

Total Fuel Flow
Total Fuel Used
Total Fuel Remaining
Left Fuel Flow
Left Fuel Used
Right Fuel Flow
Right Fuel Used
Fuel Flow Left/Right
Fuel Efficiency

Wind Functions

Wind Speed
Wind Direction
Wind Component
Wind Correction Angle

Exclusive Jet Functions

Take-Off Decision Speed
Rotation Speed
Take-Off Distance
Take-Off Power Setting
Climb Speed
Approach Speed
Landing Distance
Current Aircraft Weight
Static Error Correction

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TAS 1000 INTERFACE

Features:

Display

Orange LED display auto dimmed.

GPS Data Displayed

Fuel & air data on TAS display and GPS pages.

User Data Entry

Intuitive single rotary knob with integral push button.

Display Units

User selectable: In, Hg, mb, Gal, lbs, C, F, mi, kts nm.

Altitude Range

-1000 to 55000 ft

Altitude and Baro Set

Usable standby altimeter.

Altitude Accuracy

Easily exceeds the TSO requirements. Can calibrate regular altimeters.

Baro Interface

Custom calibrated to aircraft's altimeter; propagated to GPS.

Altitude Alserter

Built in alserter uses TAS 1000 baro setting.

Wind Display "Windicator™"

Intuitive, dynamic graphical display - direction, speed, component and drift.

Encoder Out to Transponder

Simple converter supplies altitude data for MODE C.

TSO Certifications

TSO 44b - fuel flow
TSO 106 - air data
TSO 95 - mach meter
TSO c88a - encoding alt
TSO 101 - overspeed

Static Error

Altimetry Corrections

Available for jets.

TAS 1000 - technology you will use every flight.



TAS 1000 receives inputs from several sources within the aircraft.

GPS Serial Data - The GPS interface is bidirectional. The TAS 1000 receives navigation track and ground speed from the GPS to calculate winds aloft. The TAS 1000 transmits to the GPS the parameters it calculates: pressure altitude, air speed, heading, wind direction and speed, total air temperature, static air temperature, and fuel flow data. Most GPS's provide new pages displaying this data.

Altimeter Baro Input/Output - Some high end altimeters provide an external signal reporting the barometer setting entered in the altimeter. This output is commonly required for autopilots, and altitude preselectors. The TAS 1000 accepts electronic baro setting from such altimeters. The baro information is also conveyed to some GPS units.

Static System - The input of static pressure provides fundamental data to calculate altitude, air speed, vertical speed and gradient.

Pitot System - The pitot input is measured to determine ram air pressure. This is a fundamental value required for calculation of air speed and wind functions.

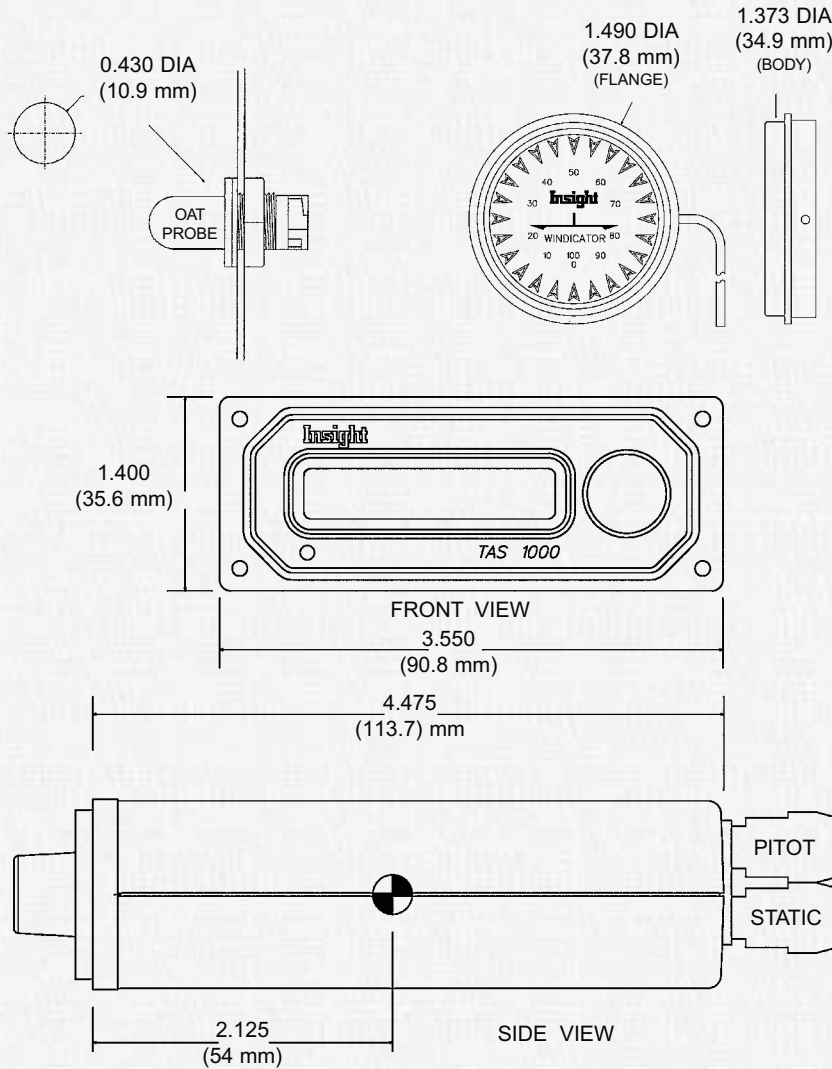
OAT Temperature - An electrical signal from Insight's innovative air temperature probe provides the measurement required to calculate temperatures (SAT, TAT, ISA) and air density related values (DA, DAD, TAS, MACH).

Fuel Flow Transducers - These inputs provide the TAS with the primary information needed to calculate fuel related functions.

HSI Compass System - Two formats of compass heading information are supported. The most desirable compass interface is the 400Hz AC synchro, as it conveys the compass heading directly without user intervention. The second choice is the stepper interface available in the KCS-55 compass system. This requires the user to initially set the heading manually, and then correct it if necessary. If no compass interface is available the user may set the heading manually.

TAS 1000 Specifications and Panel Planner

Drawings at 75% Scale



Features:

Advanced Jet Features
Jet performance charts built into TAS 1000 MFDS.

Temperature Measurements
SAT, TAT and ISA.

Configurability
Fully user configured.

Utilize Existing Transducer
Compatible with most transducers.

Pitot/Static Connections
Flexible

DC Fuel Flow
Standard

Fuel Transducer Pre-calibrated
Transducers fully interchangeable.

Calibration of Fuel K Factor
Easy to set in Dealer Mode.

Heading Input
Synchro Heading
Stepper Heading
Manual Heading

Single Wire to External Boxes?
Generally single conductor coax uses few pins.

Custom Calibrated Baro Interface
Easy to calibrate baro exactly to match altimeter.

Form Factor
Single, compact 1/3 ATI-3 panel unit.

Diagnostic and Installation Tools
Dealers have comprehensive installation support kit. Diagnostic test system and panel punches for a perfect fit.

TAS 1000 Certified Accuracy

While the TAS 1000 meets the stringent requirements of no less than 5 FAA TSO's, it comes with actual calibration documents to prove it. (Below are actual test results of a recently shipped TAS 1000).

Actual Altitude Test Data				
Altitude	TAS 1000	Tolerance	TAS	Actual
0	+2	26	2	2
1000	+1002	26	2	2
2000	+2002	26	2	2
3000	+3003	26	3	3
4000	+4003	26	3	3
5000	+5003	26	3	3
6000	+6003	27	3	3
7000	+7003	28	3	3
8000	+8004	31	4	4
9000	+9004	32	4	4
10,000	+10005	34	5	5
11,000	+11005	36	5	5
14,000	+14006	41	6	6
17,000	+17006	46	6	6
20,000	+20008	52	8	8

Actual Air Speed Test Data				
KIAS	TAS 1000	Tolerance	TAS	Actual
80	81	3.1	1.0	1.0
100	100	2.1	0.0	0.0
110	111	2.1	1.0	1.0
120	121	2.1	1.0	1.0
130	131	2.1	1.0	1.0
140	141	2.1	1.0	1.0
150	151	2.1	1.0	1.0
175	175	2.1	0.0	0.0
200	200	2.1	0.0	0.0
225	225	2.3	0.0	0.0
250	250	2.5	0.0	0.0
275	275	2.7	0.0	0.0
300	300	2.9	0.0	0.0
325	325	3.1	0.0	0.0
350	350	3.3	0.0	0.0

Every **TAS 1000 MFDS** shipped comes complete with it's own **altitude, air speed, MACH, OAT, fuel flow, heading, expansion module gray code** and **overspeed** test results.

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TAS 1000

Multi-Function Data List:

Air Data Functions

Pressure Altitude AL
Barometric Setting BR
Density Altitude DA
Density Alt. Difference DAD
Indicated Air Speed IAS
True Air Speed TAS
Ground Speed GRS
MACH Number MACH
IVSI VS
Climb/Descent Gradient GR
Total Air Temperature TAT
Static Air Temperature SAT
ISA Temperature ISA
Battery Voltage BT

Alert Functions

Altitude Alerts AA
Overspeed Warning OVS

Fuel Functions

Total Fuel Flow TF
Total Fuel Used TU
Total Fuel Remaining TR
Left Fuel Flow FL
Left Fuel Used UL
Right Fuel Flow FR
Right Fuel Used UR
Fuel Flow Left/Right FL/FR
Fuel Efficiency EF

Wind Functions

Wind Speed WSP
Wind Direction WDR
Wind Component H or TWD
Wind Correction Angle DRF

Exclusive Jet Functions

Take-Off Decision Speed V1
Rotation Speed VRO
Take-Off Distance TAK
Take-Off Power Setting N1
Climb Speed V2
Approach Speed VRF
Landing Distance LAN
Current Aircraft Weight CW
Static Error Correction . Built In

TAS 1000

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Patent Pending

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