Inertial Labs
a VIAVI Solutions company

AIR DATA COMPUTER



Datasheet

MADE IN USA

The **Inertial Labs Air Data Computer (ADC)** is an IP67 rated stand-alone device compatible with Inertial Labs' complete line of high performing Inertial Navigation Systems (INS) and can be seamlessly integrated with other external sensors. The ADC calculates and provides air data parameters including pressure altitude, air speed, air density, and outside air temperature (OAT) for avionic applications.



The Inertial Labs **ADC** is one of the most lightweight, cost-effective, and efficient solutions on the market. It's compact form factor makes it easy for users to integrate in existing UAV systems with stringent size and weight requirements. The **ADC** calculates the air data parameters from information received from the integrated pitot and static pressure sensors and an outside air temperature probe.

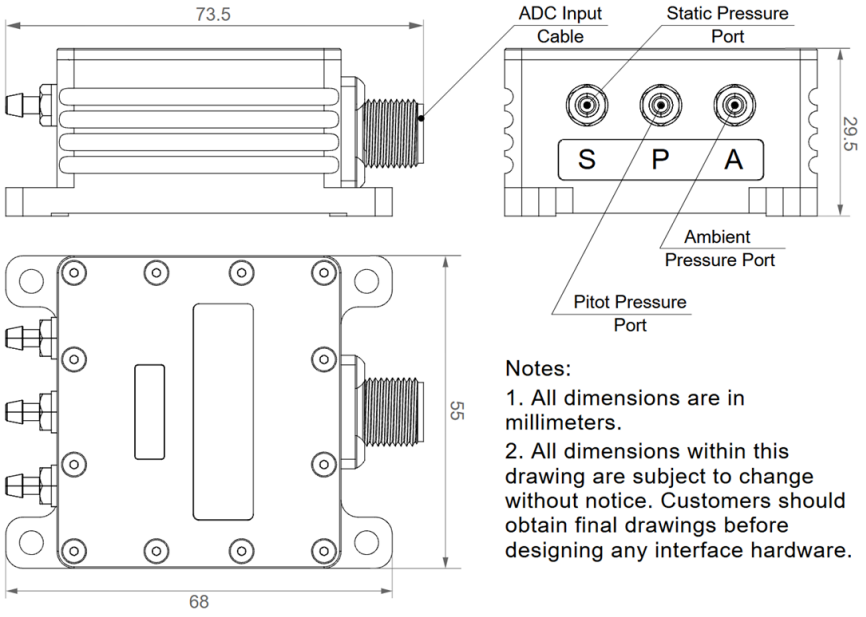
KEY FEATURES, BENEFITS & FUNCTIONALITY

- Small size, lightweight & low power: 73.5 x 55 x 29.5 mm, 130-grams, <1 watt
- Total and Static Pressure Sensors for calculating Indicated Airspeed
- Environmentally sealed (IP67)
- Aiding data: external GNSS receiver data and ambient air data
- MIL-STD-810 compliant
- Serial Interface RS-232 & RS-422
- Calculates Mach-Number, calibrated air speed, and baro-corrected pressure altitude

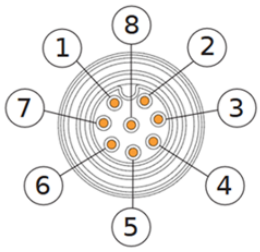
Specifications

	Parameter	Units	Air Data Computer		
Performance	Aiding Data Input		External GNSS receiver data, ambient air data		
	Pressure Sensor Measurement Range	mbar	±25	±600	±4000
	Static Pressure (calibrated)	hPa, % FS	300 to 1100 hPa, from -2000 ft to 30000 ft, Accuracy: ±0.1% FSS		
	Dynamic Pressure (calibrated)	hPa, % FS	0.15 to 25 hPa / 10 to 124 KCAS, Accuracy: ±0.25% FSS	0.15 to 600 hPa / 10 to 600 KCAS, Accuracy: ±0.25% FSS	0.15 to 4000 hPa / 10 to 1570 KCAS, Accuracy: ±0.25% FSS
	Baro-Corrected Pressure Altitude	meters	-500 to 9000 meters; Accuracy: 1		
	Pressure Altitude	meters	-500 to 9000 meters; Accuracy: 1		
	Calibrated Airspeed	meters/sec	5 to 64 meters/sec; Accuracy: 0.5	5 to 310 meters/sec; Accuracy: 0.5	5 to 800 meters/sec; Accuracy: 0.5
	True Airspeed	meters/sec	5 to 64 meters/sec; Accuracy: 0.5	5 to 310 meters/sec; Accuracy: 0.5	5 to 800 meters/sec; Accuracy: 0.5
	Mach-Number	M	0.01 to 0.2 M, Accuracy: 0.001 M	0.01 to 0.99 M, Accuracy: 0.002 M	0.01 to 2.5 M, Accuracy: 0.002 M
	Static Pressure Over Total Pressure		0.97 to 1, Resolution 0.000001	0.63 to 1, Resolution 0.000001	0.20 to 1, Resolution 0.000001
	Air Density	kg/m3	0.3 to 1.6 kg/m^3; Accuracy 0.002		
	Outside Air Temperature (OAT)	deg C	-40 to +85 degC; Resolution 0.01		
	Environment	Units	Air Data Computer		
General	Operating Altitude	meters	Up to 10000 meters / 32800 ft		
	Humidity	%	<95		
	Operating temperature	deg C	-40 to +85		
	Storage temperature	deg C	-50 to +90		
	Type of Sealing		IP-67		
	Sand, Dust, Water, Humidity, Shock, Vibration		MIL-STD-810G		
	MTBF (GM)	hours	100,000		
	Electrical	Units	Air Data Computer		
	Supply voltage	V DC	5-30		
	Power consumption	Watts	Range: 0.26-0.63, Typical: 0.35		
	Output Interface	-	RS-232 or RS-422		
	Output data format	-	Binary		
	Physical	Units	Air Data Computer		
	Nominal Size	mm	73.5 x 55 x 29.5		
	Weight	gram	130		

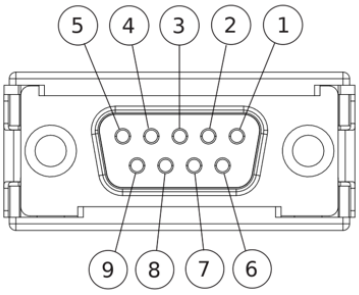
Mechanical & Electrical Interfaces Description



Notes:
1. All dimensions are in millimeters.
2. All dimensions within this drawing are subject to change without notice. Customers should obtain final drawings before designing any interface hardware.



SUPPLY INPUT	1
SUPPLY RETURN	2
RS422-RX+ (RS232-RX)	3
RS422-RX-	4
RS422-TX+	5
RS422-TX- (RS232-TX)	6
1PPS INPUT	7
INTERFACE SELECT	8



1	GROUND
2	RS232-RX
3	DNC
4	DNC
5	1PPS INPUT
6	GROUND
7	RS232-TX
8	DNC
9	POWER

ADC Data Transfer Cable (Left) and RS232 Interface Connector (Right) Pinout

Product Code Structure

Model	Pressure Sensor	Connector	Color	Version	Interface
ADC	P25	C15	S	1	.12
	P600				
	P4000				

Product code details:
- ADC: Enclosed IP67 Rated Air Data Computer
- P25: ±25 mbar measurement range pressure sensor
- P600: ±600 mbar measurement range pressure sensor
- P4000: ±4000 mbar measurement range pressure sensor
- C15: 8-pin M12-A Male Panel Mount Connector
- S: Silver Color (default)
- V1: Version: 1
- .12: RS-232 and 422

Example:
ADC-P25-C15-S-V1.12
ADC-P600-C15-S-V1.12
ADC-P4000-C15-S-V1.12

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